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Floral Diversity

of

Centurion University of Technology and Management (CUTM)

Bhubaneswar Campus, Odisha, India

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**Centurion University of Technology and Management (CUTM)
Bhubaneswar Campus, Odisha, India**

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FOREWORD

The exploration of vegetation abundance of an area gives us right comprehension of bio-assets for the advancement of people. Though diverse forms of plants ranging from lower to higher groups inhabit in the Centurion University Bhubaneswar campus, a scientific documentation on floral diversity of the campus has never been brought out before. It is, certainly a pleasure to note that Department of Botany, School of Applied Sciences of Centurion University has conducted a systematic study to record the floristic composition of our University campus. This botanized documentation based on an exhaustive phytodiversity study will not only provide information on the campus vegetation but will also hold enormous utilitarian value in form of an authentic piece of scientific literature for future reference. I am sure that this will be an asset to researchers, field naturalists and students in understanding and monitoring terrestrial as well as wetland ecosystem health. The book will also encourage the next generation of botanist to study the natural vegetation of a region together with documentation of endangered, newly introduced, and lesser known species with economic value.

I congratulate the research team of School of Applied Sciences of this University and their research associates from Utkal University for this scholastic endeavour.

Dr. Mukti Kanta Mishra
President
Centurion University of Technology
and Management
Odisha, India

Floristic inventory- an overview:

Presently, considerable attention is being addressed to biological diversity of biodiversity statue which refers to the occurrence of diverse biological forms including micro-organisms, plants and animals in a particular geographical area under a set of environmental conditions. Biodiversity is the reflection of genetic variability with which the different hierarchical forms of germplasm (strains, landraces/genotypes/varieties, species, genera, etc.) appear in the course of evolution. The genetic variation may exit either within the species (intra specific) to a certain extent or, to a larger scale, between different species (intra specific) and taxa of higher biological order. In fact, it is the ecosystem that supports the biological variability. The diverse living forms of the ecosystem are always in a state of change keeping pace with the global environment perturbations. An ecosystem is composed of both abiotic and biotic components which are quite interrelated and influences each other. For instance, the existence of the biota is influenced by various natural factors such as landscape, environmental temperature, rainfall, altitude etc. Ecosystem diversity encompasses varieties of living forms due to miscellany of niches, tropic levels and ecological processes like nutrient recycling, foods chain, food webs, energy flow and role of dominant species. Various modes of biotic inter-relationships inclusive of positive interactions (symbiosis / mutualism, proto-cooperation, commensalism), as well as negative interactions (predation, parasitism, competitions, ammensalism, etc.) play a pivotal role in shaping the ecosystem. Together, the living micro and macro-organisms also affect their immediate environment and the mutually adjusted equations account for the overall sustenance of the ecosystem. Being the pristine provider of essential of survival and sustainability, biodiversity is of colossal relevance to the human populace.

Assessment of biodiversity has become imperative as a tool of improving our understanding of the structure and functioning of ecological communities. Such investing has now assumed greater significance as ecologists make frantic efforts to document global changes in population diversity in the wake of unprecedented climatic pertubations and habitat loss. Environmental trends such as urban congestion, increased waste production & inadequacies of waste disposal, soil erosion, global warming & climate change, pollution, ozone depletion with consequent deterioration of landscape quality, loss of biodiversity & habitats extinction rates, overexploitation & depletion of resources, etc. are all symptoms of environment deterioration.

The reciprocal interplay between the vegetarian and the environment of a given area is a consistent process. Therefore, an intensive qualitative and quantitative analysis of the floristics communities, which can be referred to as “greenery audit”, is expected to generate information that can intimately mirror the holistic ecological scenario of the area under investigation. Needless to over-emphasize that the varieties and type of plants inhabiting an area reflect their adaptive potential to the existing edaphic, climatic and other environmental conditions. A floristic inventory helps understand the species composition and diversity status of an area, which also offer vital information regarding *insitu* conservation. Such an inventory

based on phytodiversity will expectedly facilities identifying plant species that are in different stages of vulnerability as well as the various factors that influence the existing vegetation of any region. The scope of the present study has been the determination of the floristics composition of Centurion University, Bhubaneswar campus of Odisha and bringing out a botanized documentation of it in form of an inventory for authentic reference.

Location, climate & topography of study area:

The present campus of Centurion University, in Bhubaneswar, covering an area of 48 acres, the place being famous as a hotspot of temples, historical monuments and archaeological remains. The modern Bhubaneswar has become the capital city of the Odisha State and has recently qualified to be the premier smart city of India. Strategically situated about 65 km from the Sun Temple at Konark and approximately at a similar distance away from the Lord Jagannath temple at Puri along the coast of the Bay of Bengal, it forms the golden triangle of tourism of Easter India.

Geographically, Bhubaneswar is located between 20° 12' N to 20° 25' N latitude and 85° 44' E to 85° 55' E longitude. The city is situated on the transitional zone of Eastern Ghat upland and coastal alluvial plain on the bank of the river *Kuakhai* and river *Daya*, the tributary of the river *Mahanadi*. With an average elevation of 46 meters from the seal level, Bhubaneswar comes under the jurisdiction of the Khurda district of the State. The place experiences an average annual rainfall of 147 mm, receiving about 120 mm of rainfall during South West monsoon between June to September, which contribution to around 75% of the annual rainfall. South West monsoon generally arrives over Bhubaneswar towards the end of June. Very often, monsoon depression which forms over Bay of Bengal moves northwest wards over Odisha bring rainfall over Bhubaneswar. The place is moderately hot and humid. The humidity remains high during July to September, the mean relative humidity at 08:30 hrs of IST is 70%. During monsoon month humidity at Bhubaneswar ranges 75-85% while during march to May, the latter being the hottest month with average maximum temperature around 45° Celsius. December is the coldest month in Bhubaneswar with minimum temperature often going below 15° Celsius. In January – February surface winds blowing over the area are light and variable. During March to August, South-westerly winds prevail. During September and October winds is relatively light and variable while in November and December Bhubaneswar is affected by northerly cold winds.

Topographically, the area is an undulating lateritic land sloping towards the east. The soil type slightly acidic in nature. The rock formation belongs to sandstones of Jurassic period with lateritic outcrops of varying depths.

Presently, the land area with vegetation cover approximately 20 acres excluding one water body covers 2.5 acres receiving waste water from the University campus.

Methodology:

Area of study

The entire campus covers an area of about 45 acre including one water body (Fig. 1). The campus have been divided into 4 blocks for extensive survey namely Block - 1, 2, 3 and 4;each block consist of a number of sub sectors.

Block wise Area under survey

Block -1 consist of the subunits - 1-10(excluding butterfly garden) including Gate- 1, Gate-2, Auditorium building, Action learning lab and waste to wealth lab, Wood engineering lab, Faculty residence (Rusikulya), Swimming Pool, Girls hostel-1 and Girls hostel-2.

Block - 2 consist of the subunits -11-20 including Girls hostel-3, School of Management & VC'S office (P), Academic building-3 (Madhusudan centre for excellence), Market complex, Academic building-2 (Koutilya), Bio compost 1, Bio compost 2, Academic building-1 (Aryabhata), Industrial training centre, Workshop (E-Rikshaw unit, Civil engineering, Electrical engineering).

Block -3 consist of the subunits -21-30 including Mechanical workshop, Advance centre of excellence for apparel textile and GTET corporation office, Institute of training of trainers (GTET), Multi use playground, Basket ball court, Tennis ball court, Consumer facility cum training and learning lab (Diesel outlet), Wheel alignment training centre, Boys hostel-1 (Baitarani) and Boys hostel-2 (Bhargabi).

Block - 4 consist of the subunits - 31-40 including Boys hostel-3 (Brahamni), Boys hostel-4 (Bansadhara), Boys hostel-5, Boys hostel-6, Central store, Power house, Boys hostel-7, Boys hostel-8 (P), Cowshed, Water body and Butterfly garden.

Plant collection

For the convenience of plant specimen collection, the area has been divided into different zones and each zone was visited several times in different seasons. Plant specimens were mostly collected in flowering and fruiting conditions as with the reproductive characters it become easy to ascertain the exact identification of the species. Important characters such as flower colour, presence of bracts and bracteoles, etc. were noted down in the field note.

Plant Identification

The plant specimens were studied in the field itself while fresh for ascertaining their identity. The characters of the plant specimens were noted down. After critical study, the specimens were identified following 'The Botany of Bihar and Orissa' (Haines, 1921- 1925) and 'The Flora of Orissa' (Saxena and Brahmam, 1994-1996) and recent monographs and reviews.

Photography of plants

Photographs were taken for all the voucher specimens collected and were kept for identification. All photographs were taken during mid-morning so that the flowers were remained in full blooming state and other parts of plants were not in wilted state.

System of Classification followed during Identification

Bentham and Hooker system of classification (Bentham and Hooker, 1862-83) is followed in arranging the families except the position of Gymnosperm which is placed between Pteridophytes and Angiosperms. The pattern of arrangement is followed in the present study: species under the families are arranged in alphabetical order for convenience. Botanical identification by local names was avoided as these vary from place to place.

Nomenclature

Utmost cares have been taken to check the nomenclature and make it as up to date as possible. The valid name with full citation has been given in first instance followed by its synonyms in reference to Haines (1921-25).

Mushroom Survey

As for the correct identification of mushroom some morphological characters are important, so macroscopic characteristics such as shape, size, colour, colour change on bruising or ageing, taste, odour were recorded. The cap shape, cap diameter, stipe shape, stipe length, attachment of gill with stipe was recorded by selecting a mature and healthy individual mushroom.

- Other field character like mycelium is present at base or not, exudation of white or other coloured latex and other special characters were noted.
- Ecological characteristics viz. nature of forest, tree composition, association, physiographic factors (altitudinal range, slope) and edapho-climatic status from the selected site were noted. Fungal fruiting bodies (sample) were recorded.
- Photograph in the natural habitat of mushroom was taken. Samples were kept in separate paper bags to avoid mixing and were taken to the laboratory.

Taking spore print: Taking spore prints of the collected mushroom is another confirmatory part of mushroom identification. So simultaneously a spore print was prepared by placing the pileus downwards where a black and white paper (half white and half black) was covered with bell jar (Singer 1975, Grimes 1994). Taken spore prints dried and preserved.

Identification and Nomenclature of Mushroom: Identification was made on the basis of critical observations of the specimens and perusal of relevant literature (Arora, 1986; Hesler & Smith, 1979; Singer, 1986; Moller, 1950, 1952; Kuo, 2003; Natarajan & Raman, 1983; Natarajan et al., 2005; Orton & Watling, 1979; Lincoff, 1981; Phillips, 1991; Watling & Gregory, 1980).

Preparation of Mushroom Herbarium: Collected specimens were dried, preserved in paper or polythene bags and numbered (Atri & Saini, 2000; Atri et al., 2003). All the Basidiomycetes

fruit body collections were preserved mostly dried and preserved by using Chlorobenzene and a few were kept in formalin-glycerol-ethanol.

Lichen Survey

- Both the micro and macrolichens are visible to naked eye in the field. However, a hand lens, preferably of 10x magnification, is necessary to examine the fine structure of the thallus while collecting. A sharp, flat edged chisel (1 to 2 inch wide edge) and a hammer (1 kg weight) are the tools required for collecting lichens from the bark.
- A pointed or stout flat edged chisel can be used to collect lichens growing on rocks. Polythene packets smaller (6 x 12 inch) and bigger sized, rubber bands, labelling stickers, a field notebook, pen, pencil, plant press, knife, secateur (twig cutter), hand lens, old news papers or blotters, ropes(nylon), collection bags, herbarium packets are the other necessary items required during a lichen collection trip. An altimeter, Global Positioning System (GPS), camera and few other instruments can be carried as per the objectives of the study.
- The field book is different from the notebook in having printed columns for entering required data, such as date, locality, altitude, collector's name and remarks. Every page of field book has serial number. The numbers are also printed several times, one below the other on the free (right) side of the field book. These numbers are for placing along with the specimen in the field.
- The lichens are usually collected along with their substratum irrespectively of their growth form. Only the lichens that are very loosely attached to substratum are scraped out and collected. The corticolous lichens growing on tree trunk at reachable height (up to 2 - 3 m from ground) are usually collected and canopy lichens can be found fallen on ground.
- Special tree climbing methods can be adopted for studying the canopy lichens. Superficial bark should be removed with the help of chisel or knife in order to avoid damage to the trees.
- The ramicolous lichens are collected by cutting twig with secateur. In case of saxicolous lichens smaller pieces of the rocks should be collected in order to avoid over weight. The lichens on the edges or crevices of rock are collected by breaking the rock.
- Sufficient amount of specimens (at least 2 thallus or patch of 5-10 cm) should be collected, as the material will be consumed for chemical analysis (TLC) and microscopic study.
- The bulk collection also helps to designate it as various types (Holotypes, Isotype, Paratype) in case it is new taxa. Further, it will also be convenient to distribute it to other herbaria as exsiccates or voucher specimens.
- However, unnecessary or repeated collection of same material should be avoided in order to conserve this group of plants. For beginner different lichen specimens can look same or specimens of same species may look different.

- Till one gains experience, samples looking different on careful observation can be collected. The collected lichen samples are transferred to the polythene packets, labeled and closed with the help of rubber bands.
- Several such packets are then transferred to larger polythene or collection bags. Or one can also keep the collected material in newspaper or blotter packets. It will be better if the different specimens are kept in different packets to avoid mixture.
- Otherwise, all the collections from a single tree can be kept together, or even collections from several same species of tree in a study area can also be put together in bigger polythene bag. The lichen specimens should not be kept in polythene packets for longer duration as it gets spoiled due to fungal attack when wet or changes in colour as it dries. While collecting the lichens the field data required should be noted in the field book and its respective number is cut and put in the packet along with the specimen.
- After returning from field all the specimens should be transferred to newspaper or blotter packets along with their labels for drying. The lichen specimens on wet barks should be kept in plant press and tied tightly.
- Otherwise the bark gets curled up as it dries, makes uncomfortable to preserve in herbarium packets and also gives shabby look. Much dried and curled specimens can be stretched using water and by spreading on blotters. The specimens can be dried under sun. If the specimen-processing place is moist, damp or if it is winter or rainy season, the materials can be dried with the help of heater or hot-air oven.
- If insects are seen in a collection they should be killed either by drying the specimens openly in hot sun or by placing sealed specimen polythene in deep freezer (- 20°C) for three days.
- The lichen herbarium packets should be made up of thick, white or brown hand made acid free paper. The paper sheet of dimension 13.5x11.5 inches is folded lengthwise twice and then side ways to produce the packets of dimension 7x5 inches with upper flap of 3.5 inches to stick the label.
- The herbarium label should contain the information of name and family of the lichen (which can be written after the identification), detailed locality and altitude from where it has been collected, date of collection, a reference number, collectors name and notes on its substratum and any other interesting observation.
- After the identification name of the person who identified (determined) the specimen can also be mentioned. The label should be written legibly with black, waterproof, permanent ink pen and not with ballpoint or gel pen. Alternatively A4 sized paper can also be used for making herbarium packets. If it is used, the dimensions of the packet change slightly.
- Using A₄ papers has the advantage of saving time, avoiding messy gum, ink and shabby look due to bad handwriting by printing the details on the paper. A label template can be designed in the word processor for this purpose. If all the information regarding a species is available in computer, it is even possible to programme PC to

print large number of label within a short period of time. The black laser print should be taken and not inkjet prints.

- The collected lichen specimens are initially segregated according to their growth form. Within the growth forms the specimens can be further grouped according to the type of their fruiting bodies (apothecia, perithecia, or sterile).
- Before starting the examination of specimen for identification, one should have a tool or pencil box containing few items needed for handling the specimens.
- The simple but necessary items needed are razor or snapper blades, plastic-handled needles, pointed and flat-tipped forceps, injection syringes (2 ml capacity) or capillary tubes or glass rods, pencil, sharpener, eraser, small transparent scale, round brush of 0 – 1 size, Quick Fix, permanent ink pen, etc. The syringes are used for keeping and applying chemical reagents during identification. One syringe will always have distilled water in it. The syringes are kept capped while not in use.

Lichen Herbarium Preparation: The lichen herbarium packets should be made up of thick, white or brown hand made acid free paper. The paper sheet of dimension 13.5x11.5 inches is folded lengthwise twice and then side ways to produce the packets of dimension 7x5 inches with upper flap of 3.5 inches to stick the label. The herbarium label should contain the information of name and family of the lichen (which can be written after the identification), detailed locality and altitude from where it has been collected, date of collection, a reference number, collectors name and notes on its substratum and any other interesting observation.

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Identification of Lichen:

Lichens were identified by studying the morphology, anatomy and chemistry of the specimen. The micro and macrolichen keys of Awasthi (1988, 1991) were the important literature referred for identification of lichens. The morphological characters of a lichen specimen were studied under dissection or stereomicroscope. Type of thallus (leprose, crustose, foliose, squamulose, dimorphic, fruticose), its shape (irregular, circular) and size was noted.

Bryophytic Survey

Random sampling method was carried out in each study sites. For our convenience the study site was divided into seven macro habitats, they were (1) Semi-evergreen forest (2) Grassland (3) Scrubby forest (4) *Eucalyptus* plantation (5) Home-based environments. Each macro habitat was further divided into five micro habitats such as Soil (terricolous), rock (rupicolous), tree barks (corticolous), on leaves (foliicolous) and dead logs (lignicolous). Identification of the specimens was based on the gametophytic and sporophytic characters

using the standard manuals and by referring the literatures (Kashyap, 1929-1932; Chopra, 1975; Gangulee, 1985; Nair et al., 2005, Satisha 2007). Identification of substrate tree species by referring the floras (Saxena and Brahmam, 1994-1996).

Pteridophytic Survey

The plants were collected from different localities and photographs were taken in the natural condition by digital camera. The observations were made from diverse habitats such as aquatic, terrestrial and epiphytic before made in to herbarium specimens. The taxonomic characters considered in the investigation includes habit and habitat, shape and size of the plants, rhizome and petiole length, scales, leaflets and venation pattern, fertile spike, spike length and shape and size of spores.

The identification of the specimens were confirmed by consulting available literatures published on ferns and Flora of Orissa (Saxena and Brahmam, 1994-1996).



Fig 1: Map of the Centurion University, Bhubaneswar campus

Observations and Discussion:

Biodiversity is an intrinsically valuable tool meant to characterize and estimate the structure and functioning of ecological communities. Studies on floral, faunal and microbial biodiversity have now assumed a considerable significance and desperate efforts are being made to document global biodiversity in the face of unprecedented climate change, habitat loss and extinction frequency. Environmental deterioration are indicated by alarming trends of urban congestion, ever increasing waste production and inadequate waste disposal, soil erosion, pollution, climatic perturbations, global warming, ozone layer depletion, with consequent adverse effects on landscape quality, loss of biodiversity & habitats, over-exploitation of natural resources etc.

The Centurion University Bhubaneswar campus is endowed with rich and diverse floristic communities. However, to date, a systematic scientific exploration on the vegetational diversity of this University campus has not been carried out to an adequate extent. This prompted the authors to conduct an exhaustive study to document the floral composition of this area. The outcome of the study can be used constructively in planning sustainability of the natural environment of the study site. The investigation on the phytodiversity of this piece of area was conducted during a period beginning November 2018 till November 2018. The study involved seasonal documentation of the flora for its abundance and distribution. The study involved field visits to the campus covering an area of about 45 acres.

A total of 625 plant species of plant belonging to 430 genera and 152 families were recorded during our survey. About 102 species of trees, 101 species of shrubs, 69 species of climbers including 01 species of parasite, 242 species of herbs, 42 species of grasses, 18 species of hydrophytes, 01 species of parasites, 02 species of orchids, 06 species of gymnosperms, 14 species of pteridophytes, 04 species of bryophytes, 03 species of lichens, as well as 22 species of mushrooms were identified and presented in this Book (Table-1). Among the families Poaceae is rated as the largest represented by 31 species, followed by Fabaceae (28), Asteraceae and Acanthaceae each with 27, Euphorbiaceae (26), Rubiaceae (21), Amaranthaceae (20) and Apocynaceae with 19 species respectively. *Cyperus* is considered as the most prominent genus represented by 11 species followed by *Euphorbia* and *Rosa* each with 9 species, *Solanum* (6), *Clerodendrum*, *Ficus*, *Justicia*, *Ipomoea*, *Phyllanthus* and *Ocimum* having 5 species each. It is interesting to note that the campus is having 09 RET (rare/endangered/threatened) category plant and 14 newly recorded plant species for the state of Odisha (Table -2 & Table- 3).

Table 1: List of Plants found in Centurion University, Bhubaneswar campus

Sl. No.	Botanical name	Family	Distribution
TREES			
1.	<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Mimosaceae	B-2, B-4
2.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	B-2
3.	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	B-3

Sl. No.	Botanical name	Family	Distribution
4.	<i>Albizia lebbbeck</i> (L.) Benth.	Mimosaceae	B-3
5.	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	B-2
6.	<i>Anacardium occidentale</i> L.	Anacardiaceae	B-2, B-4
7.	<i>Annona squamosa</i> L.	Annonaceae	B-2
8.	<i>Areca catechu</i> L.	Arecaceae	B-2
9.	<i>Artocarpus altilis</i> (Parkinson) Fosberg	Moraceae	B-2
10.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	B-2
11.	<i>Averrhoa carambola</i> L.	Averrhoaceae	B-2
12.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	B-2, B-3, B-4
13.	<i>Bauhinia acuminata</i> L.	Caesalpiniaceae	B-2
14.	<i>Bauhinia variegata</i> L.	Caesalpiniaceae	B-2
15.	<i>Bixa orellana</i> L.	Bixaceae	B-2
16.	<i>Borassus flabellifer</i> L.	Arecaceae	B-2
17.	<i>Brya ebenus</i> (L.) DC.	Fabaceae	B-2
18.	<i>Cinammomum tamala</i> (<u>Buch.-Ham.</u>) <u>T.Nees&C.H. Eberm.</u>	Lauraceae	B-2
19.	<i>Cinammomum verum</i> <u>J.Presl</u>	Lauraceae	B-2
20.	<i>Cocos nucifera</i> L.	Arecaceae	B-1, B-2
21.	<i>Coffea arabica</i> L.	Rubiaceae	B-2
22.	<i>Commiphora wightii</i> (<u>Arn.</u>) <u>Bhandari</u>	Burseraceae	B-2
23.	<i>Couroupita guianensis</i> <u>Aubl.</u>	Lecythidaceae	B-2
24.	<i>Crataeva magna</i> (Lour.) DC	Capparaceae	B-2
25.	<i>Delonix regia</i> (<u>Boj.</u> ex <u>Hook.</u>) <u>Raf.</u>	Caesalpiniaceae	B-2, B-4
26.	<i>Dillenia indica</i> L.	Dilleniaceae	B-2,
27.	<i>Diospyros melanoxylon</i> <u>Roxb.</u>	Ebenaceae	B-2
28.	<i>Elaeis guineensis</i> Jacq.	Arecaceae	B-4
29.	<i>Eucalyptus citrodora</i> <u>Hook.</u>	<u>Myrtaceae</u>	B-2
30.	<i>Ficus benghalensis</i> L. var. <i>benghalensis</i>	Moraceae	B-2, B-4
31.	<i>Ficus elastica</i> L.	Moraceae	B-2
32.	<i>Ficus racemosa</i> L.	Moraceae	B-4
33.	<i>Ficus religiosa</i> L.	Moraceae	B-2, B-4
34.	<i>Gliricidia sepium</i> (Jacq.)Walp.	Fabaceae	B-2
35.	<i>Gardeniagummifera</i> <u>L.f.</u>	Rubiaceae	B-2
36.	<i>Gmelina arborea</i> <u>Roxb.</u>	Verbenaceae	B-3
37.	<i>Haldina cordifolia</i> (Roxb.) Ridsale	Rubiaceae	B-2
38.	<i>Helictres isora</i> L.	Sterculiaceae	B-4
39.	<i>Hibiscus tiliaceus</i> L.	Malvaceae	B-2
40.	<i>Hylandia dockrillii</i> Airy Shaw	Euphorbiaceae	B-2
41.	<i>Lagerstroemia speciosa</i> (L.)Pers.	Lythraceae	B-1, B-2

Sl. No.	Botanical name	Family	Distribution
42.	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	B-2
43.	<i>Leucaena leucocephala</i> (Lam.) de Wit	Fabaceae	B-2,B-3
44.	<i>Licuala peltata</i> Roxb.ex Buch.-Ham.	<u>Arecaceae</u>	B-2
45.	<i>Limonia acidissima</i> L.	<u>Rutaceae</u>	B-2
46.	<i>Livistona chinensis</i> (Jacq.) R.Br. ex Mart.	Arecaceae	B-2
47.	<i>Macaranga peltata</i> (Roxb.)Muell-Arg.	Euphorbiaceae	B-2
48.	<i>Magnolia champaca</i> (L.) <u>Baill. ex Pierre</u>	Magnoliaceae	B-2
49.	<i>Mangifera indica</i> L.	Anacardiaceae	B-1,B-2,B-3,B-4
50.	<i>Manilkara zapota</i> (L.) P.Royen	Sapotaceae	B-1
51.	<i>Melaleuca citrine</i> (Curtis) Dum.Cours.	Lythraceae	B-2
52.	<i>Mesua ferea</i> L.	Clusiaceae	B-2
53.	<i>Millettia pinnata</i> (L.) <u>Panigrahi</u>	Fabaceae	B-2,B-3
54.	<i>Millingtonia hortensis</i> L.f.	Bignoniaceae	B-2
55.	<i>Mimusops elengi</i> L.	Sapotaceae	B-2,B-3
56.	<i>Mitragyna parviflora</i> (Roxb.) <u>Korth</u>	Rubiaceae	B-3
57.	<i>Morinda pubescens</i> Sm.	Rubiaceae	B-2,B-3
58.	<i>Moringa oleifera</i> Lam.	Moringaceae	B-2
59.	<i>Muntingia calabura</i> L.	<u>Muntingiaceae</u>	B-1,B-2
60.	<i>Murraya koengii</i> (L.) Spreng	Rutaceae	B-2
61.	<i>Murraya paniculata</i> (L.) <u>Jack</u>	Rutaceae	B-1,B-2,B-3
62.	<i>Neolamarckia cadamba</i> (Roxb.) <u>Bosser</u>	Rubiaceae	B-1,B-2
63.	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	B-1,B-2,B-3,B-4
64.	<i>Olea europaea</i> L.	Oleaceae	B-2
65.	<i>Peltophorum pterocarpum</i> (DC.) <u>K.Heyne</u>	Caesalpiniaceae	B-2,B-4
66.	<i>Phoenix sylvestris</i> (L.) <u>Roxb.</u>	Arecaceae	B-3
67.	<i>Phyllanthus acidus</i> (L.) <u>Skeels</u>	Euphorbiaceae	B-2
68.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	B-2
69.	<i>Pimenta dioica</i> (L.)Merr.	Myrtaceae	B-2
70.	<i>Plumeria obtuse</i> L.	Apocynaceae	B-4
71.	<i>Plumeria rubra</i> L.	Apocynaceae	B-1,B-2,B-3,B-4
72.	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	B-1,B-2,B-3,B-4
73.	<i>Polyalthia suberosa</i> (Roxb.) Thwaites	Annonaceae	B-1
74.	<i>Prosopis cineraria</i> (L.) <u>Druce</u>	Mimosaceae	B-2
75.	<i>Psidium guajava</i> L.	Myrtaceae	B-1,B-2
76.	<i>Pterocarpus santalinus</i> L.f.	Fabaceae	B-2
77.	<i>Pterospermum acerifolium</i> (L.) <u>Willd.</u>	Sterculiaceae	B-2
78.	<i>Punica granatum</i> L.	Punicaceae	B-2
79.	<i>Ravenala madagascariensis</i> Sonn.	Strelitziaceae	B-2
80.	<i>Roystonea regia</i> (<u>Kunth</u>) <u>O.F.Cook</u>	Arecaceae	B-1,B-2

Sl. No.	Botanical name	Family	Distribution
81.	<i>Sambucus canadensis</i> L.	Adoxaceae	B-2
82.	<i>Santalum album</i> L.	Santalaceae	B-2
83.	<i>Saraca asoca</i> (Roxb.) Willd.	Caesalpiniaceae	B-2
84.	<i>Senna auriculata</i> (L.) Roxb.	Caesalpiniaceae	B-2
85.	<i>Senna siamea</i> (Lam.) H.S. Irwin & Barneby	Caesalpiniaceae	B-2
86.	<i>Sesbania grandiflora</i> (L.) Poiret	Fabaceae	B-2
87.	<i>Simarouba glauca</i> DC.	Simaroubaceae	B-4
88.	<i>Spathodea campanulata</i> P. Beauv.	Bignoniaceae	B-2,B-4
89.	<i>Spondias pinnata</i> (L.f.) Kurz	Anacardiaceae	B-2
90.	<i>Streblus asper</i> Lour.	Moraceae	B-2
91.	<i>Syzygium caryophyllifolium</i> (Lam.)DC.	Myrtaceae	B-2
92.	<i>Syzygium cumini</i> (L.)Skeels	Myrtaceae	B-1,B-2
93.	<i>Syzygium jambos</i> (L.)Alston	Myrtaceae	B-2
94.	<i>Syzygium samarhagense</i> (Bl.)Merr. & Perr.	Myrtaceae	B-2
95.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	B-2
96.	<i>Tectona grandis</i> L.f.	Verbenaceae	B-2
97.	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Malvaceae	B-4
98.	<i>Terminalia arjuna</i> ((Roxb.) Wight & Arn.	Combretaceae	B-1
99.	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Combretaceae	B-1
100.	<i>Terminalia catappa</i> L.	Combretaceae	B-2
101.	<i>Terminalia chebula</i> Retz.	Combretaceae	B-1
102.	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	B-1,B-2,B-3,B-4
SHRUBS			
103.	<i>Acalypha wilkesiana</i> Mull. -Arg.	Euphorbiaceae	B-2
104.	<i>Adenium obesum</i> (Forssk.) Roem. & Schult.	Apocynaceae	B-2
105.	<i>Agave Americana</i> L.	Agavaceae	B-2
106.	<i>Agave salmiana</i> Otto ex Salm-Dyck	Asparagaceae	B-2
107.	<i>Allamanda schottii</i> Hook.	Apocynaceae	B-2
108.	<i>Arachnothryx leucophylla</i> (Kunth) Planch.	Rubiaceae	B-2
109.	<i>Aucuba japonica</i> Thunb.	Garryaceae	B-2
110.	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	B-2
111.	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Caesalpiniaceae	B-2
112.	<i>Cajanus cajan</i> (L.)Millsp.	Fabaceae	B-4
113.	<i>Calliandra haematocephala</i> Hassk.	Mimosaceae	B-3
114.	<i>Calotropis gigantea</i> (Ait.) R.Br	Asclepiadaceae	B-1,B-2,B-3,B-4
115.	<i>Carica papaya</i> L.	Caricaceae	B-2,B-3
116.	<i>Carissa spinarum</i> L.	Apocynaceae	B-3
117.	<i>Cascabela thevetia</i> (L.)Lippold	Apocynaceae	B-2

Sl. No.	Botanical name	Family	Distribution
118.	<i>Cestrum nocturnum</i> L.	Solanaceae	B-2
119.	<i>Chromolaena odorata</i> (L.) R.King & H.Robins	Asteraceae	B-1,B-2,B-3,B-4
120.	<i>Citrus aurantifolia</i> (Christm.) <u>Swingle</u>	Rutaceae	B-2
121.	<i>Citrus grandis</i> (L.) Osbeck	Rutaceae	B-2
122.	<i>Clerodendrum indicum</i> (L.)Kuntze	Verbenaceae	B-2
123.	<i>Clerodendrum inerme</i> (L.) Gaertn.	Verbenaceae	B-2,B-4
124.	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	B-2,B-4
125.	<i>Codiaeum variegatum</i> (L.) Juss.	Euphorbiaceae	B-2
126.	<i>Coprosma repens</i> A.Rich.	Rubiaceae	B-2
127.	<i>Cordyline fruticosa</i> (L.) <u>A.Chev.</u>	Agavaceae	B-2
128.	<i>Crossandra infundibuliformis</i> (L.)Nees.	Acanthaceae	B-2
129.	<i>Crotalaria spectabilis</i> Roth	Fabaceae	B-2
130.	<i>Cryptostegia grandiflora</i> R.Br.	Apocynaceae	B-1
131.	<i>Cuphea hyssopifolia</i> Kunth	Lythraceae	B-2
132.	<i>Desmodium pulchellum</i> (L.)Benth.	Fabaceae	B-4
133.	<i>Dracaena marginata</i> Lam. ' <i>tricolor</i> '	Agavaceae	B-2
134.	<i>Dracena reflexa</i> Lam.	Agavaceae	B-2
135.	<i>Dracaena sanderiana</i> Mast.	Asparagaceae	B-2
136.	<i>Duranta repens</i> L.	Verbenaceae	B-2
137.	<i>Dyopsis lutescens</i> (H.Wendl.) Beentje & J.Dransf	Arecaceae	B-2
138.	<i>Euphorbia milii</i> Des Moul.	Euphorbiaceae	B-2
139.	<i>Euphorbia pulcherrima</i> Willd. ex Klotzsch	Euphorbiaceae	B-2
140.	<i>Euphorbia tithymiloides</i> L.	Euphorbiaceae	B-2
141.	<i>Fargesia stricta</i> Hsueh & C. M. Hui, Bull.	Poaceae	B-2
142.	<i>Flacourtia jangomas</i> (Lour.)Raeusch.	Salicaceae	B-4
143.	<i>Gardenia carinata</i> Wall. ex Roxb.	Rubiaceae	B-1
144.	<i>Gardenia jasminoides</i> J.Ellis	Rubiaceae	B-2
145.	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Rutaceae	B-1,B-4
146.	<i>Graptophyllum pictum</i> (L.)Griff.	Acanthaceae	B-2
147.	<i>Hamelia patens</i> Jacq.	Rubiaceae	B-2
148.	<i>Hibiscus mutabilis</i> L.	Malvaceae	B-1
149.	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	B-1
150.	<i>Hibiscus schizopetalus</i> (Mast.)Hook.f.	Malvaceae	B-1,B-2
151.	<i>Hypoestes phyllostachya</i> Baker	Acanthaceae	B-2
152.	<i>Impatiens glandulifera</i> Royle	Balsaminaceae	B-2
153.	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	B-1,B-4
154.	<i>Ixora coccinea</i> L.	Rubiaceae	B-2

Sl. No.	Botanical name	Family	Distribution
155.	<i>Jasminum auriculatum</i> Vahl	Oleaceae	B-2
156.	<i>Jasminum sambac</i> (L.) Ait.	Oleaceae	B-2
157.	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	B-2
158.	<i>Jatropha integerrima</i> Jacq.	Euphorbiaceae	B-2
159.	<i>Justicia adhatoda</i> L.	Acanthaceae	B-2
160.	<i>Justicia gendarussa</i> Brum.f.	Acanthaceae	B-2,B-4
161.	<i>Kopsia fruticosa</i> (Roxb.)A.DC.	Apocynaceae	B-2
162.	<i>Lagerstroemia indica</i> (L.)Pers.	Lythraceae	B-2
163.	<i>Lantana camara</i> L. var. <i>aculeata</i> (L.) Mold.	Verbenaceae	B-2
164.	<i>Lawsonia inermis</i> L.	Lythraceae	B-2
165.	<i>Loropetalum chinense</i> (R.Br.)Oliv. var. <i>chinense</i>	Hamamelidaceae	B-2
166.	<i>Malpighia coccigera</i> L.	Malpighiaceae	B-2
167.	<i>Malvaviscus arboreus</i> Cav.	Malvaceae	B-2
168.	<i>Melastoma malbathricum</i> L.	Melastomataceae	B-2
169.	<i>Mussaenda frondosa</i> L.	Rubiaceae	B-2
170.	<i>Mussaenda phillipica</i> A.Rich.	Rubiaceae	B-2
171.	<i>Nerium oleander</i> L.	Apocynaceae	B-2
172.	<i>Ocimum basilicum</i> L.	Lamiaceae	B-2
173.	<i>Ocimum gratissimum</i> L.	Lamiaceae	B-2
174.	<i>Ocimum kilimandscharicum</i> Guerke	Lamiaceae	B-2
175.	<i>Ocimum sanctum</i> L.	Lamiaceae	B-1,B-2
176.	<i>Opuntia stricta</i> (Haw.) Haw. var. <i>dillenii</i> (Ker-Gawl.) Benson	Cactaceae	B-2
177.	<i>Pereskia bleo</i> (Kunth)DC.	Cactaceae	B-2
178.	<i>Phoenix loureiroi</i> Kunth	Arecaceae	B-2
179.	<i>Phyllanthus myrtifolius</i> (Wight)Muller	Euphorbiaceae	B-2
180.	<i>Plumbago auriculata</i> Lam.	Plumbaginaceae	B-2
181.	<i>Polyscias filicifolia</i> (C.Moore ex E.Fourn.) L.H.Bailey	Araliaceae	B-2
182.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Apocynaceae	B-2
183.	<i>Rauvolfia tetraphylla</i> L.	Apocynaceae	B-2
184.	<i>Rhapis excelsa</i> (Thunb.) A.Henry	Arecaceae	B-2
185.	<i>Ricinus communis</i> L.	Euphorbiaceae	B-1,B-2,B-3,B-4
186.	<i>Rosa alba</i> L.	Rosaceae	B-2

Sl. No.	Botanical name	Family	Distribution
187.	<i>Rosa centifolia</i> L.	Rosaceae	B-2
188.	<i>Rosa chinensis</i> Jacquin	Rosaceae	B-2
189.	<i>Rosa damascina</i> Miller	Rosaceae	B-2
190.	<i>Rosa fortuneana</i> Lindley	Rosaceae	B-2
191.	<i>Rosa gallica</i> L.var. <i>complicata</i>	Rosaceae	B-2
192.	<i>Rosa gallica</i> var. <i>officinalis</i>	Rosaceae	B-2
193.	<i>Rosa indica</i> L.	Rosaceae	B-2
194.	<i>Rosa odorata</i> (Andr.)Sweet var. <i>odorata</i>	Rosaceae	B-2
195.	<i>Sauropus androgynus</i> (L.) <u>Merr.</u>	Euphorbiaceae	B-2
196.	<i>Solanum torvum</i> Sw.	Solanaceae	B-2,B-4
197.	<i>Sterblus taxoides</i> (Roth)Kurz	Moraceae	B-2
198.	<i>Tabernaemontana divaricata</i> (L.) R.Br. ex Roem. & Schult.cv.plena	Apocynaceae	B-2
199.	<i>Tecoma stans</i> (L.) Kunth.	Bignoniaceae	B-1,B-2
200.	<i>Thunbergia erecta</i> (Benth.)T.Anderson	Acanthaceae	B-1,B-2
201.	<i>Vitex negundo</i> L.	Verbenaceae	B-2
202.	<i>Wrightia antidysenterica</i> (L.)R.Br.	Apocynaceae	B-2
203.	<i>Ziziphus oenoplia</i> (L.) Mill.	Rhamnaceae	B-4
HERBS			
204.	<i>Abelmoschus esculentus</i> (L.)Moench	Malvaceae	B-1,B-2
205.	<i>Abelmoschus manihot</i> (L.) Medic subsp. <i>tetraphyllus</i>	Malvaceae	B-4
206.	<i>Abelmoschus moschatus</i> Medic.	Malvaceae	B-1,B-4
207.	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	B-1,B-2,B-3,B-4
208.	<i>Acalypha indica</i> L.	Euphorbiaceae	B-1,B-2,B-3,B-4
209.	<i>Achyranthes aspera</i> L.	Amaranthaceae	B-1,B-2,B-3,B-4
210.	<i>Acorus calamus</i> L.	Araceae	B-2
211.	<i>Aerva javanica</i> (Burm.f.) Shult.	Amaranthaceae	B-4
212.	<i>Aerva lanata</i> (L.) Juss.ex Schultes.	Amaratnhaceae	B-1,B-2,B-3,B-4
213.	<i>Aerva sanguinolenta</i> (L.) Bl.	Amaranthaceae	B-2
214.	<i>Aeschynomene aspera</i> L.	Fabaceae	B-3,B-4
215.	<i>Aeschynomene indica</i> L.	Fabaceae	B-1,B-4
216.	<i>Ageratum conyzoides</i> L.	Asteraceae	B-1,B-2,B-3,B-4
217.	<i>Allmania nodiflora</i> (L.) R.Br. ex Wt.	Amaranthaceae	B-1,B-3,B-4
218.	<i>Alocasia macrorrhizos</i> (L.) G.Don	Araceae	B-4

Sl. No.	Botanical name	Family	Distribution
219.	<i>Aloe vera</i> (L.) Burm.f.	Liliaceae	B-1,B-2
220.	<i>Alpinia galanga</i> (L.)Willd.	Zingiberaceae	B-2
221.	<i>Alpinia nutans</i> K.Schum.	Zingiberaceae	B-2
222.	<i>Alpinia purpurata</i> K.Schum.	Zingiberaceae	B-2
223.	<i>Alternanthera bettzickiana</i> (Regel) G.Nicholson	Amaranthaceae	B-2
224.	<i>Alternanthera paronychioides</i> St.	Amaranthaceae	B-1,B-2,B-3,B-4
225.	<i>Alternanthera philoxeroides</i> (C. Martius) Grisebach	Amaranthaceae	B-1,B-2,B-3,B-4
226.	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	B-1,B-2,B-3,B-4
227.	<i>Alysicarpus vaginalis</i> (L.) DC. var. <i>nummularifolius</i> Miq.	Fabaceae	B-1,B-2,B-3,B-4
228.	<i>Amaranthus caudatus</i> L.	Amaranthaceae	B-2
229.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	B-1,B-2,B-3,B-4
230.	<i>Amaranthus tricolor</i> L.	Amaranthaceae	B-1,B-4
231.	<i>Amaranthus viridis</i> L.	Amaranthaceae	B-1,B-2,B-3,B-4
232.	<i>Ammannia baccifera</i> L.	Lythraceae	B-1,B-2,B-3,B-4
233.	<i>Ammannia multiflora</i> Roxb.	Lythraceae	B-4
234.	<i>Ananas comosus</i> (L.)Merr.	Bromeliaceae	B-2
235.	<i>Andrographis paniculata</i> (Brum.f.) Wall. ex Nees	Acanthaceae	B-1,B-2,B-3,B-4
236.	<i>Angelonia salicarifolia</i> Humb.&Bonpl.	Scrophulariaceae	B-2
237.	<i>Anisochilus carnosus</i> (L.f.) Wall.	Lamiaceae	B-1,B-3
238.	<i>Anisomeles indica</i> (L.) Kuntze	Lamiaceae	B-1,B-4
239.	<i>Argemone mexicana</i> L.	Papaveraceae	B-1,B-2,B-3,B-4
240.	<i>Artemisia absinthium</i> L.	Asteraceae	B-2
241.	<i>Asparagus densiflorus</i> (Kunth)Jessop	Asparaceae	B-2
242.	<i>Aster indamellus</i> Griers.	Asteraceae	B-2
243.	<i>Asystasia gangetica</i> (L.) T. Anderson	Acanthaceae	B-2
244.	<i>Barleria cristata</i> L.	Acanthaceae	B-4
245.	<i>Barleria prionitis</i> L.	Acanthaceae	B-1,B-3,B-4
246.	<i>Bassia scoparia</i> (L.) Schrad.	Amaranthaceae	B-2
247.	<i>Biophytum sensitivum</i> (L.) DC.	Oxalidaceae	B-1,B-2,B-3,B-4
248.	<i>Blepharis maderaspatensis</i> (L.) Heyne ex	Acanthaceae	B-1,B-2,B-3,B-4

Sl. No.	Botanical name	Family	Distribution
	Roth		
249.	<i>Blumea lacera</i> (Burm.f.) DC.	Asteraceae	B-1,B-2,B-3,B-4
250.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	B-1,B-2,B-3,B-4
251.	<i>Brassica campestris</i> L.	Brassicaceae	B-1,B-2,B-3
252.	<i>Brassica napus</i> L. var. <i>glauca</i> (Roxb.) Schulz	Brassicaceae	B-2
253.	<i>Brassica oleracea</i> L. var. <i>capitata</i>	Brassicaceae	B-2
254.	<i>Brassica oleracea</i> L. var. <i>oleracea</i>	Brassicaceae	B-2
255.	<i>Caladium bicolor</i> (Aiton) Vent.	Araceae	B-2
256.	<i>Canna indica</i> L.	Cannaceae	B-2
257.	<i>Capsicum annum</i> L.	Solanaceae	B-2
258.	<i>Catharanthus roseus</i> (L.) G.Don	Apocynaceae	B-2
259.	<i>Celosia argentea</i> L.	Amaranthaceae	B-1,B-2,B-3,B-4
260.	<i>Celosia cristata</i> L.	Amaranthaceae	B-2
261.	<i>Celosia argentea</i> var. <i>plumosa</i>	Amaranthaceae	B-2
262.	<i>Centella asiatica</i> (L.)Urban	Apiaceae	B-2
263.	<i>Chamaecostus cuspidatus</i> (Nees & Mart.) C.Specht & D.W. Stev.	Costaceae	B-2
264.	<i>Chenopodium album</i> L.	Chenopodiaceae	B-4
265.	<i>Chrozophora rottleri</i> (Geisel.) Juss.	Euphorbiaceae	B-3,B-4
266.	<i>Chrysanthemum cinerariifolium</i> (Trev.) Vis.	Asteraceae	B-2
267.	<i>Cleome rutidosperna</i> DC.	Capparaceae	B-1,B-2,B-3,B-4
268.	<i>Cleome viscosa</i> L.	Capparaceae	B-1,B-2,B-3,B-4
269.	<i>Coldenia procumbens</i> L.	Boraginaceae	B-1,B-2,B-3,B-4
270.	<i>Colocasia esculenta</i> (L.) Schott	Araceae	B-4
271.	<i>Commelina benghalensis</i> L.	Commelinaceae	B-1,B-2,B-3,B-4
272.	<i>Commelina erecta</i> L.	Commelinaceae	B-1,B-2,B-3,B-4
273.	<i>Commelina longifolia</i> Lam.	Commelinaceae	B-4
274.	<i>Commelina paludosa</i> Blume	Commelinaceae	B-3
275.	<i>Coriandrum sativum</i> L.	Apiaceae	B-2
276.	<i>Cosmos caudatus</i> Kunth	Asteraceae	B-3,B-4
277.	<i>Costus speciosus</i> (Koenig) Sm.	Costaceae	B-4
278.	<i>Crinum asiaticum</i> L.	Liliaceae	B-2

Sl. No.	Botanical name	Family	Distribution
279.	<i>Crotalaria pallida</i> Ait.	Fabaceae	B-1,B-2,B-3,B-4
280.	<i>Crotalaria prostrata</i> L.	Fabaceae	B-4
281.	<i>Crotalaria verrucosa</i> L.	Fabaceae	B-4
282.	<i>Croton bonplandianus</i> Baill	Fabaceae	B-1,B-2,B-3,B-4
283.	<i>Curcuma amada</i> Roxb.	Zingiberaceae	B-1,B-2,B-3,B-4
284.	<i>Curcuma longa</i> L.	Zingiberaceae	B-2
285.	<i>Curcuma zedoaria</i> (Christm.)Rosc.	Zingiberaceae	B-2
286.	<i>Cyanotis cristata</i> (L.) D.Don	Commelinaceae	B-2,B-4
287.	<i>Cyanotis tuberosa</i> (Roxb.)Schult.&Schult.f.	Commelinaceae	B-3,B-4
288.	<i>Dentella repens</i> (L.) J.R. & G. Forst. var. <i>repens</i>	Rubiaceae	B-1,B-2,B-3,B-4
289.	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	B-2
290.	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	B-1,B-2,B-3,B-4
291.	<i>Dicliptera bupleuroides</i> Nees	Acanthaceae	B-1,B-2,B-3,B-4
292.	<i>Digera muricata</i> (L.) Mart	Amaranthaceae	B-1,B-4
293.	<i>Dipteracanthus prostratus</i> (Poir.) Nees	Acanthaceae	B-1,B-2,B-3,B-4
294.	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	B-1,B-2,B-3,B-4
295.	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	B-1,B-2,B-3,B-4
296.	<i>Eranthemum capense</i> L.	Acanthaceae	B-3,B-4
297.	<i>Eryngium foetidum</i> L.	Apiaceae	B-1,B-2,B-3,B-4
298.	<i>Euphorbia heterophylla</i> L.	Euphorbiaceae	B-3,B-4
299.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	B-1,B-2,B-3,B-4
300.	<i>Euphorbia indica</i> Lam.	Euphorbiaceae	B-2
301.	<i>Euphorbia rosea</i> Retz.	Euphorbiaceae	B-1,B-3
302.	<i>Euphorbia serpens</i> H.B.K	Euphorbiaceae	B-1,B-4
303.	<i>Euphorbia thymifolia</i> L.	Euphorbiaceae	B-1,B-2,B-3,B-4
304.	<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	B-1,B-3,B-4
305.	<i>Evolvulus nummularius</i> (L.) L.	Convolvulaceae	B-1,B-2,B-3,B-4
306.	<i>Evovulus sericeus</i> Sw.	Convolvulaceae	B-3
307.	<i>Foeniculuem vulgare</i> L.	Apiaceae	B-2,B-3
308.	<i>Gaillardia aristata</i> Pursh	Asteraceae	B-2
309.	<i>Gaillardia grandiflora</i> Hort	Asteraceae	B-2
310.	<i>Glinus oppositifolius</i> (L.) A.DC.	Molluginaceae	B-1,B-2,B-3,B-4

Sl. No.	Botanical name	Family	Distribution
311.	<i>Globba marantina</i> L.	Zingiberaceae	B-2
312.	<i>Gnaphalium polycaulon</i> Pers.	Asteraceae	B-1,B-2,B-3,B-4
313.	<i>Gomphrena celosioides</i> Mart.	Amaranthaceae	B-1,B-2,B-3,B-4
314.	<i>Gomphrena globosa</i> L.	Amaranthaceae	B-2
315.	<i>Grangea maderaspatana</i> (L.) Poir.	Asteraceae	B-1,B-2,B-3,B-4
316.	<i>Hedyotis bracheata</i> Miq.ex Hook.f.	Rubiaceae	B-1,B-3,B-4
317.	<i>Hedyotis corymbosa</i> (L.)Lam.	Rubiaceae	B-1,B-2,B-3,B-4
318.	<i>Hedyotis puberula</i> (G.Don)Thw.	Rubiaceae	B-3
319.	<i>Heliconia latispatha</i> Benth.	Heliconiaceae	B-2
320.	<i>Heliconia rostrata</i> Ruiz & Pavon	Heliconiaceae	B-2
321.	<i>Heliotropium indicum</i> L.	Boraginaceae	B-1,B-2,B-3,B-4
322.	<i>Heliotropium strigosum</i> Willd.	Boraginaceae	B-1,B-4
323.	<i>Heliotropium supinum</i> L.	Boraginaceae	B-1,B-4
324.	<i>Hibiscus cannabinus</i> L.	Malvaceae	B-1
325.	<i>Hippeastrum amaryllis</i> (L.)Herb.	Amaryllidaceae	B-2
326.	<i>Hippeastrum reginae</i> (L.)Herb.	Amaryllidaceae	B-2
327.	<i>Hybanthus enneaspermus</i> (L.) F.v. Muell.	Violaceae	B-1,B-2,B-3,B-4
328.	<i>Hygrophila auriculata</i> Schumach.	Acanthaceae	B-1,B-3,B-4
329.	<i>Hyptis suaveolens</i> (L.) Poit.	Lamiaceae	B-1,B-2,B-3,B-4
330.	<i>Impatiens balsamina</i> L.	Balsaminaceae	B-2
331.	<i>Indigofera linnaei</i> Ali	Fabaceae	B-1,B-2,B-3,B-4
332.	<i>Indoneesiella echioides</i> (L.) Sreemadh.	Acanthaceae	B-1,B-2,B-3,B-4
333.	<i>Justicia betonica</i> L.	Acanthaceae	B-3,B-4
334.	<i>Justicia japonica</i> Thunb.	Acanthaceae	B-2,B-3
335.	<i>Justicia quinqueangularis</i> Koen. ex Roxb.	Acanthaceae	B-1,B-4
336.	<i>Kalanchoe blossfeldiana</i> Poelln.	Crassulaceae	B-2
337.	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	B-2
338.	<i>Laportea interrupta</i> (L.) Chew	Urticaceae	B-1,B-2,B-3,B-4
339.	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	B-3,B-4
340.	<i>Leucas cephalotes</i> (Roth) Spreng.	Lamiaceae	B-1,B-4
341.	<i>Leucas indica</i> (L.) R.Br.ex Vatke	Lamiaceae	B-4
342.	<i>Lindernia ciliata</i> (Colsm.)Pennell	Scrophulariaceae	B-1,B-2,B-3,B-4
343.	<i>Lindernia crustacea</i> (L.) F.v. Muell.	Scrophulariaceae	B-1,B-2,B-3,B-4

Sl. No.	Botanical name	Family	Distribution
344.	<i>Lippia javanica</i> (Burm.f.) Spreng.	Verbenaceae	B-4
345.	<i>Lobelia alsinoides</i> Lam.	Lobeliaceae	B-1,B-4
346.	<i>Lobularia maritima</i> (L.) Desv.	Brassicaceae	B-3
347.	<i>Ludwigia perennis</i> L.	Onagraceae	B-1,B-3,B-4
348.	<i>Malachra capitata</i> (L.) L.	Malvaceae	B-3
349.	<i>Maranta arundinacea</i> L.	Marantaceae	B-2
350.	<i>Martynia annua</i> L.	Martyniaceae	B-4
351.	<i>Mazus pumilus</i> (Brum.f.) Steenis	Scrophulariaceae	B-2,B-4
352.	<i>Mecardonia procumbens</i> (Mill.) Small	Scrophulariaceae	B-1,B-3,B-4
353.	<i>Melochia corchorifolia</i> L.	Sterculiaceae	B-3,B-4
354.	<i>Mentha arvensis</i> L.	Lamiaceae	B-2
355.	<i>Mentha piperita</i> L.	Lamiaceae	B-2
356.	<i>Mentha spicata</i> L.	Lamiaceae	B-2
357.	<i>Merremia hederacea</i> (Burm.f.) Hall.f.	Convolvulaceae	B-4
358.	<i>Micrococca mercurialis</i> (L.) Benth.	Euphorbiaceae	B-1,B-2,B-3,B-4
359.	<i>Mimosa pudica</i> L.	Mimosaceae	B-1,B-2,B-3,B-4
360.	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	B-2
361.	<i>Mitracarpus villosus</i> (Sw.) DC.	Rubiaceae	B-1,B-2,B-3,B-4
362.	<i>Mollugo pentaphylla</i> L.	Molluginaceae	B-1,B-2,B-3,B-4
363.	<i>Murdannia nodiflora</i> (L.) Brenan	Commelinaceae	B-1,B-2,B-3,B-4
364.	<i>Murdannia spirata</i> (L.) Brueck.	Commelinaceae	B-1,B-3,B-4
365.	<i>Musa acuminata</i> var. <i>rubra</i>	Musaceae	B-2
366.	<i>Musa paradisiaca</i> L.	Musaceae	B-2
367.	<i>Ocimum canum</i> Sims.	Lamiaceae	B-4
368.	<i>Origanum majorana</i> L.	Lamiaceae	B-2
369.	<i>Oxalis corniculata</i> L.	Oxalidaceae	B-1,B-2,B-3,B-4
370.	<i>Oxalis debilis</i> Kunth	Oxalidaceae	B-2
371.	<i>Oxalis triangularis</i> A.St.-Hil.	Oxalidaceae	B-2
372.	<i>Panadnus amarylifolius</i> Roxb.	Pandanaceae	B-2
373.	<i>Parthenium hysterophorus</i> L.	Asteraceae	B-1,B-2,B-3,B-4
374.	<i>Peperomia pellucida</i> Kunth	Piperaceae	B-1,B-3,B-4
375.	<i>Peristrophe paniculata</i> (Forssk.) Brummitt	Acanthaceae	B-1,B-3,B-4
376.	<i>Persicaria virginiana</i> (L.) Gaertn.	Polygonaceae	B-2

Sl. No.	Botanical name	Family	Distribution
377.	<i>Petunia hybrid</i> Juss.	Solanaceae	B-2
378.	<i>Phaulopsis imbricata</i> (Forssk.) Sw.	Acanthaceae	B-3,B-4
379.	<i>Phyla nodiflora</i> (L.)Greene	Verbenaceae	B-4
380.	<i>Phyllanthus fraternus</i> Webster	Euphorbiaceae	B-1,B-2,B-3,B-4
381.	<i>Phyllanthus virgatus</i> Forst.f.	Euphorbiaceae	B-1,B-3,B-4
382.	<i>Physalis longifolia</i> Nutt.var. <i>longifolia</i>	Solanaceae	B-3
383.	<i>Physalis minima</i> L.	Solanaceae	B-4
384.	<i>Pilea microphylla</i> (L.)Liebm.	Urticaceae	B-1,B-2,B-3,B-4
385.	<i>Plectranthus amboinicus</i> (Lour.)Spreng	Lamiaceae	B-2
386.	<i>Plectranthus barbatus</i> Andr.	Lamiaceae	B-2
387.	<i>Plectranthus scutellarioides</i> (L.) R.Br.	Lamiaceae	B-2
388.	<i>Plumbago indica</i> L.	Plumbaginaceae	B-2,B-4
389.	<i>Polygala arvensis</i> L.	Polygalaceae	B-3,B-4
390.	<i>Polygonum barbatum</i> L.	Polygonaceae	B-3,B-4
391.	<i>Portulaca oleracea</i> L. var. <i>oleracea</i>	Portulacaceae	B-1,B-2,B-3,B-4
392.	<i>Portulaca pilosa</i> L. subsp. <i>grandiflora</i> (Hook.) Geesink	Portulacaceae	B-2
393.	<i>Portulaca quadrifida</i> L.	Portulacaceae	B-1,B-2,B-3,B-4
394.	<i>Portulaca umbraticola</i> Kunth	Portulacaceae	B-2
395.	<i>Ruellia brittoniana</i> Leonard	Acanthaceae	B-2
396.	<i>Ruellia tuberosa</i> L.	Acanthaceae	B-1,B-3
397.	<i>Rungia pectinata</i> (L.) Nees	Acanthaceae	B-1,B-2,B-3,B-4
398.	<i>Sansevieria cylindrica</i> Bojer	Asparagaceae	B-2
399.	<i>Sansevieria roxburghiana</i> Schult. & Schult.f.	Asparagaceae	B-2
400.	<i>Sansevieria trifasciata</i> Prain.	Asparagaceae	B-2
401.	<i>Scadoxus multiflorus</i> (Martyn) Raf.	Amaryllidaceae	B-2
402.	<i>Scoparia dulcis</i> L.	Scrophulariaceae	B-1,B-2,B-3,B-4
403.	<i>Sebastiania chamalea</i> (L.) Muell.-Arg.	Euphorbiaceae	B-2,B-4
404.	<i>Senna occidentalis</i> (L.) Link	Caesalpiniaceae	B-2,B-4
405.	<i>Sesamum orientale</i> L.	Pedaliaceae	B-3,B-4
406.	<i>Sida acuta</i> Burm.f.	Malvaceae	B-1,B-2,B-3,B-4
407.	<i>Sida cordata</i> (Burm.f.) Borssum	Malvaceae	B-1,B-3,B-4
408.	<i>Sida cordifolia</i> L.	Malvaceae	B-3,B-4

Sl. No.	Botanical name	Family	Distribution
409.	<i>Sida rhombifolia</i> L. subsp. <i>rhombifolia</i> var. <i>rhombifolia</i>	Malvaceae	B-4
410.	<i>Solanum lycopersicon</i> L.	Solanaceae	B-2
411.	<i>Solanum melongena</i> L.	Solanaceae	B-2
412.	<i>Solanum nigrum</i> L.	Solanaceae	B-1,B-2,B-3,B-4
413.	<i>Solanum tuberosum</i> L.	Solanaceae	B-2
414.	<i>Solanum virginianum</i> L.	Solanaceae	B-4
415.	<i>Spathiphyllum cochlearispathum</i> (Liebm.)Engl.	Araceae	B-2
416.	<i>Spermacoce articularis</i> L.f.	Rubiaceae	B-1,B-2,B-3,B-4
417.	<i>Spermacocoe exilis</i> (L.O.Williams)C.D. Adams	Rubiaceae	B-1,B-2,B-3,B-4
418.	<i>Sphaeranthus indicus</i> L.	Asteraceae	B-3,B-4
419.	<i>Spilanthes calva</i> DC.	Asteraceae	B-3,B-4
420.	<i>Spilanthes paniculata</i> Wall. ex DC.	Asteraceae	B-1,B-2,B-3,B-4
421.	<i>Synedrella nodiflora</i> (L.) Gaertn.	Asteraceae	B-1,B-2,B-3,B-4
422.	<i>Tagetes patula</i> L.	Asteraceae	B-2
423.	<i>Talinum triangulare</i> (Jacq.)Willd.	Talinaceae	B-2
424.	<i>Tephrosia purpurea</i> (L.) Pers. var. <i>purpurea</i>	Fabaceae	B-3,B-4
425.	<i>Theriophonum minuatatum</i> (Willd.)Bail	Araceae	B-2
426.	<i>Tithonia diversifolia</i> (Hemsl)A.Gray	Asteraceae	B-1,B-2
427.	<i>Tradescantia zebrine</i> (Schinz)D.R Hunt	Commelinaceae	B-2
428.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	B-2,B-4
429.	<i>Tridax procumbens</i> L.	Asteraceae	B-1,B-2,B-3,B-4
430.	<i>Triumfetta pentandra</i> A.Rich	Sterculiaceae	B-1,B-4
431.	<i>Triumfetta rhomboidea</i> Jasq.	Sterculiaceae	B-3,B-4
432.	<i>Turnera ulmifolia</i> L.	Turneraceae	B-2
433.	<i>Uraria picta</i> (Jacq.)Desv.ex DC.	Fabaceae	B-2
434.	<i>Urena lobata</i> L. subsp. <i>sinuata</i> (L.) Borssum var. <i>sinuata</i>	Malvaceae	B-1,B-3,B-4
435.	<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	B-1,B-2,B-3,B-4
436.	<i>Waltheria indica</i> L. var. <i>indica</i>	Sterculiaceae	B-3,B-4
437.	<i>Wedelia chinensis</i> (Osbeck) Merr.	Asteraceae	B-2

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438.	<i>Withania somnifera</i> (L.)Dunal	Solanaceae	B-2
439.	<i>Xanthium indicum</i> Koenig	Asteraceae	B-3,B-4
440.	<i>Xanthosoma robustum</i> Schott.	Araceae	B-1
441.	<i>Zephyranthes candida</i> (Lindl.)Herb.	Amaryllidaceae	B-2
442.	<i>Zephyranthes rosea</i> (Lindl.)	Amaryllidaceae	B-2
443.	<i>Zinnia elegans</i> Jack.	Asteraceae	B-2
444.	<i>Zornia diphylla</i> (L.) Pers.	Fabaceae	B-3,B-4
445.	<i>Zornia gibbosa</i> Spanoghe	Fabaceae	B-3,B-4
HYDROPHYTES(ANGIOSPERMS)			
446.	<i>Alisma plantago-aquatica</i> L.	Alismataceae	B-2
447.	<i>Ceratophyllum demersum</i> L.	Ceratophyllacae	B-2
448.	<i>Eichhornia crassipes</i> (Mart.) Solms-Laub.	Pontederiaceae	B-4
449.	<i>Hydrilla verticillata</i> (L.f.) Royle	Hydrocharitaceae	B-2
450.	<i>Lemna perpusila</i> Torr.	Lemnaceae	B-2,B-4
451.	<i>Monochoria hastata</i> Solms-Laub.	Pontederiaceae	B-4
452.	<i>Monochoria vaginalis</i> (Burm.f.) Presl	Pontederiaceae	B-4
453.	<i>Nelumbo nucifera</i> Gaertn.	Nelumbonaceae	B-2
454.	<i>Nuphar pumila</i> (Timm) <u>DC.</u>	Nymphaeaceae	B-2
455.	<i>Nymphaea mexicana</i> Zucc.	Nymphaeaceae	B-2
456.	<i>Nymphaea nouchali</i> Burm.f.	Nymphaeaceae	B-2
457.	<i>Nymphaea pubescens</i> Willd.	Nymphaeaceae	B-2
458.	<i>Nymphoides hydrophila</i> (Lour.)Kuntze	Menyanthaceae	B-2
459.	<i>Nymphoides indica</i> (L.) <u>Kuntze</u>	Menyanthaceae	B-2
460.	<i>Pistia stratiotes</i> L.	Araceae	B-4
461.	<i>Potamogeton nodosus</i> Poir.	Potamogetonaceae	B-2
462.	<i>Spirodela polyrhiza</i> (L.) Schleiden	Lemnaceae	B-4
463.	<i>Typha angustifolia</i> L.	Typhaceae	B-2
CLIMBERS			
464.	<i>Abrus precatorius</i> L.	Fabaceae	B-4
465.	<i>Aganosma caryophyllata</i> (Roxb. ex Sims) G.Don	Apocynaceae	B-2
466.	<i>Allamanda blanchetti</i> A.DC.	Apocynaceae	B-2
467.	<i>Antigonon leptopus</i> <u>Hook. & Arn.</u>	Polygonaceae	B-4
468.	<i>Argeyria nervosa</i> (Burm.f.) Bojer	Convolvulaceae	B-2

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469.	<i>Artabotrys hexapetalus</i> (L.f.) Bandari	Annonaceae	B-2
470.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	B-2
471.	<i>Atylosia scarabaeoides</i> (L.) Benth.	Fabaceae	B-3,B-4
472.	<i>Basella alba</i> L.	Basellaceae	B-2
473.	<i>Campsis radicans</i> Seem.	Bignoniaceae	B-2
474.	<i>Cayratia pedata</i> (Wall.) Gagnep.	Vitaceae	B-3,B-4
475.	<i>Cayratia trifolia</i> (L.) Domin	Vitaceae	B-1,B-3,B-4
476.	<i>Cissampelos pareira</i> L.	Menispermaceae	B-2
477.	<i>Cissus quadrangularis</i> L.	Vitaceae	B-2
478.	<i>Clerodendrum splendens</i> G.Don	Verbenaceae	B-2
479.	<i>Clerodendrum thomsoniae</i> <u>Balf.</u>	Verbenaceae	B-2
480.	<i>Clitoria ternatea</i> L.	Fabaceae	B-2
481.	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	B-3,B-4
482.	<i>Cocculus hirsutus</i> (L.) Diels	Cucurbitaceae	B-3,B-4
483.	<i>Cucumis melo</i> L.	Cucurbitaceae	B-2
484.	<i>Cucumis sativus</i> L.	Cucurbitaceae	B-2
485.	<i>Cucurbita maxima</i> Duchesne	Cucurbitaceae	B-2
486.	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	B-4
487.	<i>Dioscorea alata</i> L.	Dioscoreaceae	B-2
488.	<i>Diplocyclos palmatus</i> (L.) C.Jeffrey	Cucurbitaceae	B-4
489.	<i>Epipremnum aureum</i> (Linden & André) <u>G.S.Bunting</u>	Araceae	B-2
490.	<i>Ficus pumila</i> L.	Moraceae	B-2
491.	<i>Gymnema sylvestre</i> R.Br.	Asclepidaceae	B-2
492.	<i>Hemidesmus indicus</i> (L.) R.Br. var. <i>indicus</i>	Periplocaceae	B-2,B-3,B-4
493.	<i>Ichnocarpus frutescens</i> (L.) <u>W.T.Aiton</u>	Apocynaceae	B-2
494.	<i>Ipomoea obscura</i> Ker.-Gawl.	Convolvulaceae	B-4
495.	<i>Ipomoea pes-tigridis</i> L.	Convolvulaceae	B-1,B-4
496.	<i>Ipomoea quamoclit</i> L.	Convolvulaceae	B-3
497.	<i>Ipomoea sepiaria</i> Koenig ex Roxb.	Convolvulaceae	B-3,B-4
498.	<i>Luffa acutangula</i> (L.) <u>Roxb.</u>	Cucurbitaceae	B-2
499.	<i>Luffa aegyptiaca</i> Mill.	Cucurbitaceae	B-4

Sl. No.	Botanical name	Family	Distribution
500.	<i>Mansoa alliacea</i> Gentry.	Bignoniaceae	B-2
501.	<i>Merremia tridentata</i> (L.) Hall.f. subsp. <i>hastata</i> (Hall.f.) Ooststr.	Convolvulaceae	B-3
502.	<i>Mikania micrantha</i> Kunth	Asteraceae	B-1,B-3,B-4
503.	<i>Momordica charantia</i> L.	Cucurbitaceae	B-2
504.	<i>Momordica dioica</i> <u>Roxb.</u> ex <u>Willd.</u>	Cucurbitaceae	B-2
505.	<i>Mukia maderaspatana</i> (L.) M.Roem.	Cucurbitaceae	B-3
506.	<i>Operculina turpethum</i> (L.)Silva Manso	Convolvulaceae	B-2
507.	<i>Paederia foetida</i> L.	Rubiaceae	B-2
508.	<i>Passiflora foetida</i> L.	Passifloraceae	B-2, B-3
509.	<i>Passiflora incarnata</i> L.	Passifloraceae	B-2
510.	<i>Passiflora vitifolia</i> Kunth	Passifloraceae	B-2
511.	<i>Pentalinon luteum</i> (L.) <u>B.F.Hansen</u> & <u>Wunderlin</u>	Apocynaceae	B-2
512.	<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepidaceae	B-4
513.	<i>Petrea volubilis</i> L.	Verbenaceae	B-2
514.	<i>Philodendron scandens</i> K. Koch & Sello	Araceae	B-2
515.	<i>Piper betel</i> L.	Piperaceae	B-2
516.	<i>Piper longum</i> L.	Piperaceae	B-2
517.	<i>Podranea ricasoliana</i> (Tanf.) Sprague	Bignoniaceae	B-2
518.	<i>Pyrostegia venusta</i> (Ker.Gawl.)Miers	Bignoniaceae	B-2
519.	<i>Quisqualis indica</i> L.	Combretaceae	B-2
520.	<i>Rhaphidophora decusirva</i> (Roxb.) Schott	Araceae	B-2
521.	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	B-3
522.	<i>Syngonium podophyllum</i> Schott	Araceae	B-2
523.	<i>Thunbergia fragrans</i> Roxb.	Acanthaceae	B-2
524.	<i>Thunbergia grandiflora</i> (Roxb.ex Rottl.)Roxb.	Acanthaceae	B-1,B-2
525.	<i>Tinospora cordifolia</i> (Thunb.) Miers	Menispermaceae	B-2
526.	<i>Trichosanthes cucumerina</i> L.	Cucurbitaceae	B-2
527.	<i>Trichosanthes dioica</i> Roxb.	Cucurbitaceae	B-2
528.	<i>Trichosanthes tricuspidata</i> Lour.	Cucurbitaceae	B-4
529.	<i>Tylophora indica</i> (Burm. f.) Merr.	Asclepiadaceae	B-2
530.	<i>Typhonium trilobatum</i> (L.)Schott	Araceae	B-2

Sl. No.	Botanical name	Family	Distribution
531.	<i>Vernonia elliptica</i> DC.	Asteraceae	B-1,B-2
532.	<i>Vitis vinifera</i> L.	Vitaceae	B-2
EPIPHYTES			
533.	<i>Vanda tessellata</i> (Roxb.)Hook.ex G.Don	Orchidaceae	B-2
534.	<i>Dendrobium ursula</i> Strengé	Orchidaceae	B-2
GRASSES			
535.	<i>Aristida setacea</i> Retz.	Poaceae	B-1,B-2,B-3,B-4
536.	<i>Bambusa arundinacea</i> (Retz.) Willd.	Poaceae	B-2
537.	<i>Bambusa vulgaris</i> Schrad. Ex J.C.Wendl.	Poaceae	B-2
538.	<i>Bothriochloa pertusa</i> (L.) A. Camus	Poaceae	B-1,B-2,B-3,B-4
539.	<i>Brachiaria distachya</i> (L.) Stapf	Poaceae	B-1,B-2,B-3,B-4
540.	<i>Brachiaria mutica</i> (Forssk.) Stapf	Poaceae	B-4
541.	<i>Brachiaria ramosa</i> (L.) Stapf	Poaceae	B-1,B-3,B-4
542.	<i>Chloris barbata</i> Sw.	Poaceae	B-1,B-2,B-3,B-4
543.	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	B-1,B-4
544.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	B-1,B-2,B-3,B-4
545.	<i>Cyperus brevifolius</i> (Rottb.) Hassk.	Cyperaceae	B-1,B-4
546.	<i>Cyperus compactus</i> Retz.	Cyperaceae	B-4
547.	<i>Cyperus difformis</i> L.	Cyperaceae	B-1,B-3,B-4
548.	<i>Cyperus halpan</i> L.	Cyperaceae	B-1,B-3
549.	<i>Cyperus imbricatus</i> Retz.	Cyperaceae	B-4
550.	<i>Cyperus iria</i> L.	Cyperaceae	B-1,B-4
551.	<i>Cyperus kyllingia</i> Endl.	Cyperaceae	B-1,B-3,B-4
552.	<i>Cyperus paniceus</i> (Rottb.) Boeck.	Cyperaceae	B-4
553.	<i>Cyperus pygmaeus</i> Rottb.	Cyperaceae	B-4
554.	<i>Cyperus rotundus</i> L. var. <i>rotundus</i> Kern.	Cyperaceae	B-1,B-2,B-3
555.	<i>Cyperus triceps</i> Endl.	Cyperaceae	B-4
556.	<i>Dactyloctenium aegypticum</i> (L.) P.Beauv.	Poaceae	B-1,B-2,B-3,B-4
557.	<i>Digitaria abludens</i> (Roem. & Schult.) Veldk.	Poaceae	B-3
558.	<i>Digitaria ciliaris</i> (Retz.) Koeler	Poaceae	B-1,B-2,B-3,B-4
559.	<i>Echinochloa colona</i> (L.) Link	Poaceae	B-1,B-2,B-3,B-4
560.	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	B-1,B-2,B-3,B-4
561.	<i>Elusine coracana</i> (L.)Gaertn	Poaceae	B-2

Sl. No.	Botanical name	Family	Distribution
562.	<i>Eragrostis ciliaris</i> (L.) R.Br.	Poaceae	B-3
563.	<i>Eragrostis ciliata</i> Roxb. Nees	Poaceae	B-1,B-2,B-3,B-4
564.	<i>Eragrostis unioides</i> (Retz.) Nees ex Steud.	Poaceae	B-1,B-2,B-3,B-4
565.	<i>Eriochloa procera</i> (Retz.)Hubbard	Poaceae	B-1,B-2,B-3,B-4
566.	<i>Paspalum scrobiculatum</i> L.	Poaceae	B-2,B-3
567.	<i>Paspalum vaginatum</i> Sw.	Poaceae	B-1,B-3
568.	<i>Pennisetum pedicellatum</i> Trin.	Poaceae	B-1,B-3,B-4
569.	<i>Pennisetum purpureum</i> Schumach	Poaceae	B-3,B-4
570.	<i>Perotis indica</i> (L.)Kuntz	Poaceae	B-3,B-4
571.	<i>Pogonatherum crinitum</i> (Thunb.)Kunth	Poaceae	B-2
572.	<i>Sachharum officinarum</i> L.	Poaceae	B-2
573.	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Poaceae	B-1,B-3,B-4
574.	<i>Setaria verticillata</i> (L.) P.Beauv.	Poaceae	B-1,B-4
575.	<i>Sorghum vulgare</i> L.	Poaceae	B-2
576.	<i>Zea mays</i> L.	Poaceae	B-2
GYMNOSPERMS			
577.	<i>Araucaria columnaris</i> (Forst.f.) Hook.	Araucariaceae	B-2
578.	<i>Cycas revoluta</i> Thunb.	Cycadaceae	B-2
579.	<i>Juniperus communis</i> L.	Cupressaceae	B-2
580.	<i>Pinus roxburghii</i> Sargent	Pinaceae	B-2
581.	<i>Podocarpus nerefolius</i> D.Don	Podocarpaceae	B-2
582.	<i>Platycladus orientalis</i> (L.) Franco	Cupressaceae	B-2
PTERIDOPHYTES			
583.	<i>Adiantum incisum</i> Forssk.	Adiantaceae	B-4
584.	<i>Adiantum phillipense</i> L.	Adiantaceae	B-1,B-2,B-3,B-4
585.	<i>Ampelopteris prolifera</i> (Retz.) Copel.	Thelypteridaceae	B-2,B-4
586.	<i>Azolla microphylla</i> Kaulf	Azollaceae	B-4
587.	<i>Ceratopteris thalictroides</i> (L.) Brongn	Ceratopteridaceae	B-4
588.	<i>Dryopteris cochleata</i> (D.Don) C.Chr.	Dryopteridaceae	B-2,B-4
589.	<i>Marsilea minuta</i> L.	Marseliaceae	B-4
590.	<i>Marsilea quadrifolia</i> L.	Marseliaceae	B-4
591.	<i>Nephrolepis exaltata</i> (L.) Schott	Nephrolepidaceae	B-2
592.	<i>Phymatosorus membranifolius</i> (R.Br.)S.G.	Polypodiaceae	B-2

Sl. No.	Botanical name	Family	Distribution
	Lu		
593.	<i>Pteris vittata</i> L.	Pteridaceae	B-1,B-2,B-3,B-4
594.	<i>Salvinia cuculata</i> Roxb.	Salviniaceae	B-4
595.	<i>Salvinia molesta</i> D.S. Mitch.	Salviniaceae	B-4
596.	<i>Selaginella ciliaris</i> (Retz.) Spring	Selaginellaceae	B-4
BRYOPHYTES			
597.	<i>Barbula calycina</i> Schwägr	Pottiaceae	B-2,B-4
598.	<i>Marchantia polymorpha</i> L.	Marchantiaceae	B-1,B-4
599.	<i>Riccia beyrichiana</i> Hampe ex Lehm	Ricciaceae	B-3,B-4
600.	<i>Trichostomum crispulum</i> Bruch	Pottiaceae	B-2
MUSHROOMS			
601.	<i>Agaricus bisporous</i> (J.E.Lange) Emil.J.Imbact	Agaricaceae	B-2
602.	<i>Agaricus compestris</i> L.	Agaricaceae	B-4
603.	<i>Amanita multisquamosa</i> Peck	Amanitaceae	B-4
604.	<i>Amylostereum laevigatum</i> (Fr.) Boidin	Amylostereaceae	B-4
605.	<i>Bulgaria inquinans</i> (Pers.) Fr	Bulgariaceae	B-4
606.	<i>Byssomerulius corium</i> (Pers.) Parmasto	Irpicaceae	B-4
607.	<i>Chaetoderma luna</i> (Romell ex D.P. Rogers & H.S. Jacks.) Parmasto	Stereaceae	B-4
608.	<i>Clavaria aurea</i> Schaeff.	Clavariaceae	B-4
609.	<i>Crinipellis scabella</i> (Alb. & Schwein.) Murrill	Marasmiaceae	B-4
610.	<i>Dacryopinax spathularia</i> Schweien & G.W.Martin	Dacrymycetaceae	B-4
611.	<i>Deconia coprophila</i> (Bull.) P. Karst.	Strophariaceae	B-4
612.	<i>Entoloma unicolor</i> (Perk) Hesler	Entolomataceae	B-4
613.	<i>Ganoderma lucidum</i> (Curtis) P. Carst.	Ganotodermaceae	B-4
614.	<i>Lactarius alnicola</i> A.H. Smith	Russulaceae	B-4
615.	<i>Marasmius rotula</i> (Scop.) Fr.	Marasmiaceae	B-1
616.	<i>Protostropharia semiglobata</i> (Batsch) Redhead, Moncalvo & Vilgays	Strophariaceae	B-4
617.	<i>Psilocybe cubensis</i> (Earle) Singer	Hymenogastraceae	B-1
618.	<i>Terana caerulea</i> (Lam.) Kuntze	Phanerochaetaceae	B-4
619.	<i>Termitomyces eurrhizus</i> (Berk.&Broome) R.Heim	Lyophyllaceae	B-4

Sl. No.	Botanical name	Family	Distribution
620.	<i>Termitomyces heimii</i> Natarajan	Lyophyllaceae	B-4
621.	<i>Termitomyces microcarpus</i> (Berk. & Broome) R. Heim	Lyophyllaceae	B-4
622.	<i>Xylaria longipes</i> Nitschke	Xylariaceae	B-4
LICHENS			
623.	<i>Chrysothrix chlorina</i> (Ach.) J.R. Laundon	Chrysothricaceae	B-4
624.	<i>Cryptothecia scripta</i> G.Thor	Arthoniaceae	B-4
625.	<i>Graphis scripta</i> (L.) Ach.	Graphidaceae	B-1,B-2,B-3,B-4

Table-2: List of plants of the University campus coming under RET category

Sl.No.	Botanical name	Family	Remarks
1.	<i>Saraca asoca</i> (Roxb.) Willd	Caesalpiniaceae	CR
2.	<i>Operculina turpethum</i> (L.) Silva Manso	Convolvulaceae	VU
3.	<i>Paederia foetida</i> L.	Rubiaceae	VU
4.	<i>Piper longum</i> L.	Piperaceae	EN
5.	<i>Uraria picta</i> (Jacq.)Desv.ex DC.	Fabaceae	EN
6.	<i>Mesua ferea</i> L.	Clusiaceae	VU
7.	<i>Crataeva magna</i> (Lour.) DC	Capparaceae	VU
8.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Apocynaceae	EN
9.	<i>Gardeniagummifera</i> L.f.	Rubiaceae	VU

Table-3: New addition of plant species to the flora of Odisha state

Sl.No.	Botanical name	Family
1.	<i>Aucuba japonica</i> Thunb.	Garryaceae
2.	<i>Alpinia nutans</i> K.Schum.	Zingiberaceae
3.	<i>Alpinia purpurata</i> K.Schum.	Zingiberaceae
4.	<i>Coprosma repens</i> A.Rich.	Rubiaceae
5.	<i>Evolvulus sericeus</i> Sw.	Convolvulaceae
6.	<i>Gardenia carinata</i> Wall. ex Roxb.	Rubiaceae
7.	<i>Hylandia dockrillii</i> Airy Shaw	Euphorbiaceae
8.	<i>Lobularia maritima</i> (L.) Desv.	Brassicaceae
9.	<i>Loropetalum chinense</i> (R.Br.)Oliv. var. <i>chinense</i>	Hammamelidaceae
10.	<i>Nuphar pumila</i> (Timm) DC.	Nymphaeaceae
11.	<i>Nymphaea mexicana</i> Zucc.	Nymphaeaceae
12.	<i>Physalis longifolia</i> Nutt.var. <i>longifolia</i>	Solanaceae
13.	<i>Ruellia brittoniana</i> Leonard	Acanthaceae
14.	<i>Xanthosoma robustum</i> Schott.	Araceae

ENUMERATION

TREES

Acacia auriculiformis A. Cunn. ex Benth.

[Mimosaceae]

[**Syn:** *Racosperma auriculiforme* (Benth.)
Pedley]

Vernacular name(s): Acasia (O & H);
Ear leaf acacia (E).

Distribution: B-2, B-4.

Description: Trees, evergreen, to 20 m tall. Phyllodes falcate-oblong, 10-20 × 1.5-4(-6) cm, Spikes 1 to several, fasciculate, axillary or terminal, 3.5-8 cm. Flowers orange-yellow. Petals oblong, 1.5-2 mm. Legume 5-8 × 0.8-1.2 cm, valves woody. Seeds ca. 12, black, ca. 5 × 3.5 mm.



Aegle marmelos (L.) Corr.

[Rutaceae]

[**Syn:** *Feronia pellucida* Roth]

Vernacular name(s): Bela (O); Bael (H);
Wood apple (E).

Distribution: B-2.

Description: Tree to 12 m tall, deciduous. Leaves alternate-3-foliolate, sometimes 5-foliolate, ovate-elliptic or elliptic-lanceolate, Inflorescences axillary and terminal, racemose or corymbose, few-flowered. Flowers bisexual, greenish white or yellow, fragrant. Calyx cupular, caducous; Petals 5, ovate-oblong, yellowish, ca. 12 x 6 mm. Berries ovoid, 6-10 cm across, woody, yellowish, many seeded; seeds oblong and flat.

Ailanthus excelsa Roxb.

[Simaroubaceae]

Vernacular name(s): Ghora Nimba (O);
Mahanimb (H); Tree of Heaven (E).

Distribution: B-3.

Description: Large deciduous tree, bark light grey and smooth. Leaves alternate, pinnately compound. Greenish-yellow flower, clusters droop at leaf bases. Fruit a 1-seeded samara, lance shaped, flat, pointed at ends.



Albizia lebbbeck (L.) Benth.

[Mimosaceae]

[Syn: *Mimosa lebbbeck* L.]

Vernacular name(s): Sirisa (O);
Siris (H); Siris tree (E).

Distribution: B-3.

Description: Tree. Pinnately compound obovate-oblong leaves arranged in 2-4 pairs, glabrescent, 4-5 nerved. Flower-heads white, fragrant, 1-3 together in the axils of the leaves of young shoot. Pods yellow, oblong and glabrous. Seeds oval.



Alstonia scholaris (L.) R.Br.

[Apocynaceae]

Vernacular name(s): Chhatiana (O);
Chatian (H); Dita bark (E).

Distribution: B-2.

Description: Tree, whorled branches with milky latex, 3-7 obovate-oblong, glabrous leaves, usually 6 in a whorl. Umbellately branched inflorescence, cymose panicle, puberulous. Pendulous, terete, narrow follicles. Seeds linear.

Anacardium occidentale L.

[Anacardiaceae]

Vernacular name(s): Kaju (O, H);
Cashew-nut (E).

Distribution: B-2, B-4.

Description: Trees, 4-10 m tall; leaf blade obovate, 8-11 × 6-8.5 cm, leathery, glabrous on both sides, lateral veins ca. 12 pairs. Inflorescence paniculate, 10-20 cm, Calyx grayish, ca. 4 × 1.5 mm. Petals 5, greenish yellow to red, 7-9 × ca. 1.2 mm. Fleshy hypocarp 3-7 × 4-5 cm, purplish red at maturity; drupe reniform, 2-2.5 × ca. 1.5 cm.



Annona squamosa L.

[Annonaceae]

Vernacular name(s): Ata (O); Saripha (H); Custurd apple (E).

Distribution: B-2.

Description: Small tree, 5-6 m high. Leaves elliptic to oblong-obovate, 8-11 × 3-4.3 cm, acute to obtuse with cuneate to subrounded base, leaf opposed or terminal on short axillary branches, 1-2-flowered. Sepals broadly deltoid, 1.5-3 × 3-4 mm, petals oblong, 20-27 × 7-9 mm, pale yellow with deep purple spot inside at base. Fruit 5-10 × 5-7.5 cm, yellowish green, tuberculate, pulp soft, pure white or yellow tinged. Seeds dark brown to black.



Areca catechu L.

[Arecaceae]

Vernacular name(s): Gua (O); Supari (H); Betel nut (E).

Distribution: B-2.

Description: Erect palm. Leaves in a terminal crown with many leaflets. Spadices several on the axils of fallen leaves, spikes flexuous or straight. Spathes boat-like, coriaceous. Flowers monoecious; lower ones female, 1-3 at spike-base; upper ones male, many. Fruit to 4 × 2.5 cm, with fibrous mesocarps, orange-red in colour.

Artocarpus altilis (Parkinson) Fosberg

[Moraceae]

Vernacular name(s): Kalikati Panasa (O);

Distribution: B-2.

Description: 10-15 tall tree. Leaves leathery, pinnately-lobed, dark green 10-36 long and to 10-20 wide, each of which features 5-11 deeply cut lobes. Male flowers appear in pendant spikes to 10 long and female flowers in oval-rounded heads to 2 1/2" long. Female flowers give way to large, rounded, green to yellowish-green, compound, rounded fruits. Each fruit has white to pale yellow flesh.



Artocarpus heterophyllus Lam.

[Moraceae]

(Syn: *Artocarpus integrifolius* auct. non L.f.)

Vernacular name(s): Panasa (O); Kathal (H); Jack tree (E).

Distribution: B-2.

Description: Tree. Leaves dark shining green above with elliptic or obovate shaped; stipule spathaceous. Lateral receptacles on the trunk and branches. Leathery inflorescence with yellowish bract. Syncarp very large, oblong or cylindric, tubercled.



Averrhoa carambola L.

[Averrhoaceae]

Vernacular name(s): Karamanga (O); Averrhoea (E).

Distribution: B-2.

Description: Plants 3-12(-15) m tall. Leaves 7-25 cm; leaflets (3-)5-13; leaflet blades ovate to elliptic, 3-8 × 1.5-4.5 cm. Inflorescences axillary or rameal, panicles or cymes, branches and flower buds crimson. Flowers numerous, small. Berry yellow to yellow-brown, oblong, 7-13 × 5-8 cm, deeply (3-)5(or 6)-ribbed, stellate in cross section, very fleshy. Seeds numerous, blackish brown.

Azadirachta indica A. Juss.

[Meliaceae]

Vernacular name(s): Nimba (O); Neem (H); Margosa (E).

Distribution: B-2, B-3, B-4.

Description: Tree, up to 15 m tall. Leaves imparipinnate, pulvinnus at the base; leaflets alternate to opposite, 2.5-7 cm long, 1.5-4 cm broad, ovate, subsessile, acuminate. Flowers white, sweet-scented. Sepals obovate, 1.5 mm long. Petals 6 mm long, obovate to oblong, white, margin ciliate. Drupe oblong, 1.3-2 cm long, greenish-yellow, 1-seeded.



Bauhinia acuminata L.

[Caesalpiaceae]

Vernacular name(s): Sweta Kanchana (O); Kachnar (H); Dwarf white Bauhinia (E).

Distribution: B-2.

Description: Small trees, to 3 m tall. Leaf blade ovate-cordate to cordate, 9-12 × 8-12.5 cm, subleathery, Inflorescence a raceme, with few (3-15) flowers. Flower buds ca. 2.5 cm, Calyx spathe open on one side, shortly 5-toothed. Petals white, obovate-elliptic, 3.5-5 × ca. 2 cm, sessile. Legume straight or slightly curved, linear-oblongate, compressed, 6-12 × ca. 1.5 cm, Seeds 5-12, compressed, 8-10 mm in diam.



Bauhinia variegata L.

[Caesalpiaceae]

Vernacular name(s): Patali Kanchana (O); Kachnar (H); Mountain-ebony(E).

Distribution: B-2.

Description: Trees, deciduous, to 15 m tall. Leaf blade suborbicular or broadly ovate, 5-9 × 7-11 cm, subleathery, Flower buds fusiform, smooth, subsessile. Petals white, or with pink or purplish spots, obovate or oblanceolate, 4-5 cm, clawed. Legume linear, flat, valves woody. Seeds 10-15, compressed, sub-orbicular, ca. 10 mm in diam.

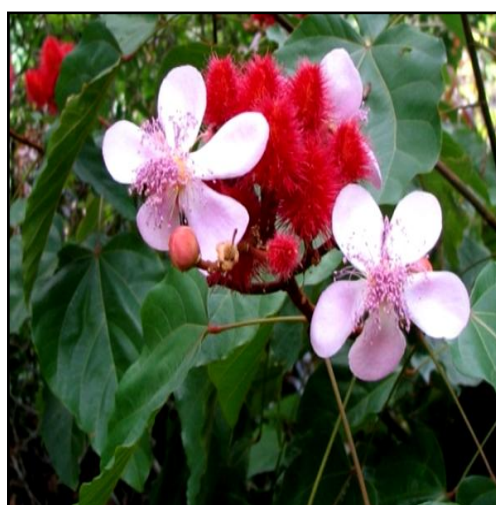
Bixa orellana L.

[Bixaceae]

Vernacular name(s): Kunkuma (O); Latkan (H); Lipstick tree (E).

Distribution: B-2.

Description: Small tree, 2-6(8) m. Leaves ovate, 5-22 x 3.5-14 cm, base sub-cordate or truncate, apex acute to acuminate. Flowers corymbose panicles. Sepals purplish-red, broadly ovate to orbicular. Petals purplish-pink to nearly white. Filaments thin, 12 mm. Ovary prickly with long, pale yellow, soft prickles. Capsules ovoid or deltoid.



Borassus flabellifer L.

[Arecaceae]

Vernacular name(s): Tala (O); Tar (H); Palmyra palm (E).

Distribution: B-2.

Description: Tree with grayish-black stem. Leaves almost circular, margins split into 60-80 linear-lanceolate, acuminate segment; petiole stout, horny. Spadix, unisexual inflorescence; flowers seated on inner upper side of cavities. Drupe subglobose.



Brya ebenus (L.) DC.

[Fabaceae]

Vernacular name(s): Jamaican rain tree/Ebony (E).

Distribution: B-2.

Description: About 20-30 ft tall. Leaves are green, compound, whorled, obovate, small, waxy and smooth textured. Short inflorescence of tiny bright yellow pea-shaped flowers. Fruits are thin two-jointed pods about 1 inch long and containing multiple seeds.

Cinammomum tamala (Buch.-Ham.)

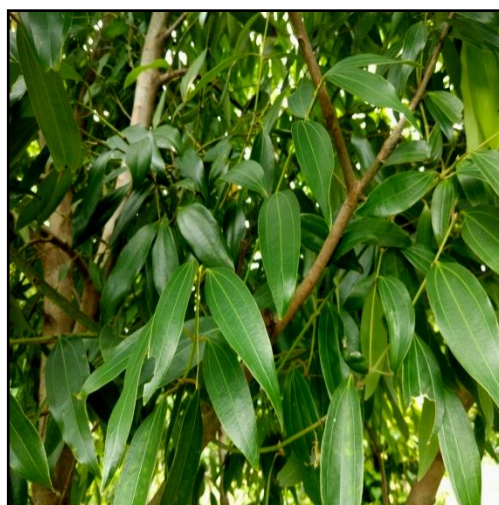
T.Nees & C.H.Eberm.

[Lauraceae]

Vernacular name(s): Tejapatra (O); Tejatta (H); Indian Bay leaf, (E).

Distribution: B-2.

Description: Trees, up to 20 m tall, bark gray-brown, scented. Leaves alternate or those on young branchlets sometimes subopposite; green and shiny adaxially, ovate, oblong, or lanceolate. Panicle axillary or terminal, 5-10 cm, many flowered, branched, apex of branch bearing a 3-5-flowered cyme. Flowers white-green, up to 6 mm. Fruit obovoid or ellipsoid.



Cinammomum verum J.Presl

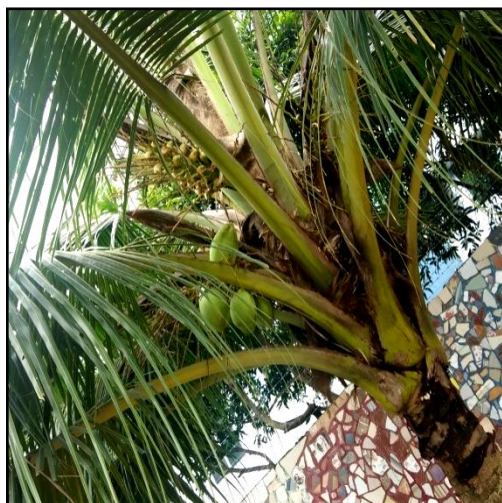
[Lauraceae]

(**Syn:** *Cinnamomum zeylanicum* Blume.)

Vernacular name(s): Dalchini (O & H);
Cinnamon, Ceylon cinnamon (E).

Distribution: B-2.

Description: Evergreen small trees, up to 10 m tall. Leaves opposite; ovate or ovate-lanceolate, 11-16 × 4.5-5.5 cm, leathery or glabrous on both surfaces. Panicle axillary or terminal, 10-12 cm; peduncle and rachis sericeous-puberulent. Flowers yellow, ca. 6 mm. Perianth tube obconical; perianth lobes 6, oblong, subequal. Fruit ovoid, 10-15 mm, black when mature.



Cocos nucifera L.

[Arecaceae]

Vernacular name(s): Nadia (O); Nariyal (H); Coconut (E).

Distribution: B-1, B-2.

Description: Perennial palm, growing to 30 m tall. Leaves pinnate, 4-6 m long, pinnae 60-90 cm long. Flowers polygamomonoecious, with both male and female flowers in the same inflorescence. Flowering occurs continuously, with female flowers producing seeds.

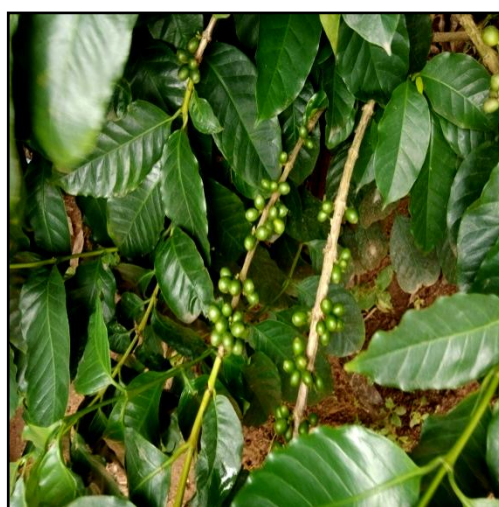
Coffea arabica L.

[Rubiaceae]

Vernacular name(s): Coffe (O, H & E)

Distribution: B-2.

Description: Small trees or large shrubs, 5-8 m tall. Leaf blade drying thinly leathery, elliptic, elliptic-oblong, or occasionally ovate-lanceolate. Inflorescences with 1 to several cymes in each axil, (1 or)2-5-flowered, sessile to pedunculate with peduncles to 4 mm. Bracts cupuliform, 1-2 mm. Calyx glabrous. Corolla white, funnellform, outside glabrous. Drupe red, ellipsoid to subglobose.



Commiphora wightii (Arn.) Bhandari

[Burseraceae]

[**Syn:** *Commiphora mukul* (Hook. ex Stocks) Engl.]

Vernacular name(s): Guggula (O); Gugulla (H); Indian Bdellium tree (E).

Distribution: B-2.

Description: Small trees up to 4-8 m tall. Leaves sessile, alternate or fascicled, 1-3-foliolate; leaflets glabrous, the terminal sessile or subsessile, obovate, serrate, 1-5 cm long, 0.5-2.5 cm broad. Male and female flowers separate. Petals reflexed, acute, 3-5 mm long, ca. 1 mm broad. Fruit up to 1 cm long, red.



Couropita guianensis Aubl.

[Lecythidaceae]

Vernacular name(s): Naga-champa (O); Nagalinga (H); Cannon-ball tree (E).

Distribution: B-2.

Description: A tall tree up to 25 m. Leaves oblong, obovate, elliptic or broadly lanceolate, \pm entire, 10-16 cm long, 4-6 cm broad, acute. Flowers yellow and red tinged, fragrant, 8-15 cm across, arranged in 40-70 cm long racemes. Petals fleshy, 3-5 cm long, 2-3 cm wide, oblong-ovate. Androphore large, spatulate, \pm cream coloured. Fruit nearly globular, 15-20 cm in diameter, reddish-brown, hard outside, pulpy inside.

Crataeva magna (Lour.) DC.

[Capparaceae]

Vernacular name(s): Bada Baruna (O); Barni (H); Caper tree (E).

Distribution: B-2.

Description: Trees or shrubs, 4-20 m tall. Twigs grayish brown, smooth or verrucose, with \pm circular lenticels. Leaflet blades ovate-lanceolate to oblong-lanceolate. Inflorescences corymbose racemes, 20-30 flowered, subtended by several leaves. Sepals lanceolate, petals white, abruptly acuminate. Fruit oblong-ellipsoid to oblong-ovate, 2.5-5 cm. Seeds 30-50 per fruit, dark brown, slightly flattened.



Delonix regia (Boj. ex Hook.) Raf.
[Caesalpinaceae]

Vernacular name(s): Krushnachuda (O);
Gulmohar (H); Royal Poinciana (E).

Distribution: B-2, B-4.

Description: Colourful tree 20 m height, with umbrella-like canopy. Flowers are striking, four spoon shaped spreading scarlet or orange-red petals. Leaves delicate, fern-like, composed of small individual leaflets, elegant wide-spreading umbrella-like canopy can be wider than its height.



Dillenia indica L.

[Dilleniaceae]

Vernacular name(s): Oou (O);
Chalta (H); Elephant Apple (E).

Distribution: B-2.

Description: Moderate sized evergreen tree. Leaves oblong to lanceolate, acute to acuminate. Flowers white, solitary. Sepals 5, elliptic. Petal 7-9 x 5-6.5 cm. Stamens in 2 distinct groups, the outer ones many, straight in bud, the inner ones reflexed in bud, yellow. Carpels yellowish-green. Seeds 5 or more in each carpel in colourless glutinous pulp.

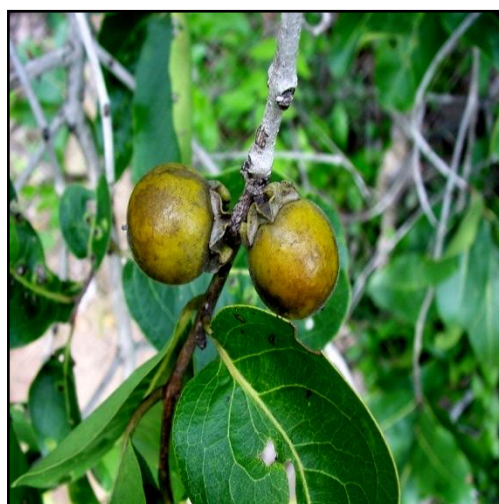
Diospyros melanoxylon Roxb.

[Ebenaceae]

Vernacular name(s): Kendu (O);
Tendu (H); East Indian Ebony (E).

Distribution: B-2.

Description: Tree, 12-15 m tall; young branches brown-tomentose. Leaves subopposite 9-21 x 5-10 cm, coriaceous, broadly ovate, orbicular, obtuse. Male flowers 3-12, in peduncled cymes; female flowers axillary, solitary, sub-sessile. Fruit globose. Seeds 3-4.



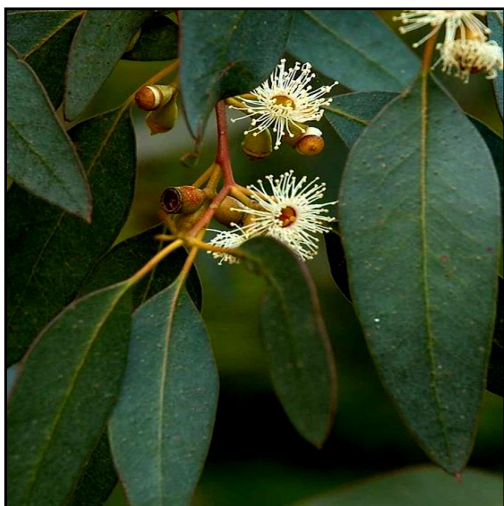
***Elaeis guineensis* Jacq.**

[Arecaceae]

Vernacular name(s): Taila tala (O); African oil palm or macaw-fat (E).

Distribution: B-4.

Description: Single-stemmed, 20 m tall. Leaves pinnate and reach 3-5 m long. Flowers produced in dense clusters; each individual flower is small, with three sepals and three petals, palm fruit takes 5–6 months to mature, reddish, about the size of a large plum, and grows in large bunches. Each fruit is made up of an oily, fleshy outer layer (the pericarp), with a single seed (the palm kernel), also rich in oil.



***Eucalyptus citrodora* Hook.**

[Myrtaceae]

[Syn: *Eucalyptus maculata* Hooker var. *citriodora* (Hooker) Bailey.]

Vernacular name(s): Patas (O & H); Eucalyptus (E).

Distribution: B-2.

Description: Trees, to 28 m tall. Leaf blade lanceolate, with glandular trichomes, base rounded, 15-18 × 3-4 cm. Mature leaves strongly smelling of lemon; petiole 1.5-2 cm. Inflorescences terminal or axillary, paniculate, umbels 3-flowered; peduncle 3-4 mm, 2-ridged. Flower buds long obovate, 6-7 mm. Capsule pot-shaped to ovoid, 1-1.2 × 0.8-1 cm.

Ficus benghalensis* L. var. *benghalensis

[Moraceae]

Vernacular name(s): Baragachha (O); Bargad (H); Banyan (E).

Distribution: B-2, B-4.

Description: Evergreen tree, numerous prop roots arises for support. Leaves elliptic-ovate, glossy above. Figs in axillary pairs, sessile, globose, silky pubescent, basal bracts suborbicular. Male and female flowers in the same receptacle. Syconus fruit scarlet red when ripe.



Ficus elastica L.

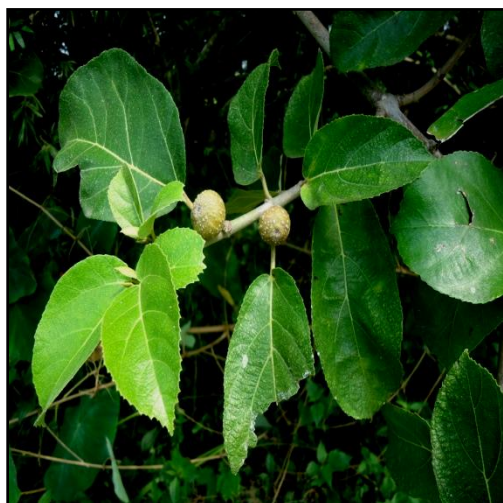
[Moraceae]

[Syn: *Ficus cordata* Kunth & Boucharlet]

Vernacular name(s): Rubber gachha(O); Rubracho pard (H); Indian Rubber tree (E).

Distribution: B-2.

Description: Trees, 20-30 m tall. Stipules dark red, ca. 10 cm, membranous; petiolate, leaf blade oblong to elliptic, thickly leathery. Figs axillary on leafless branchlets, paired, yellowish green, ovoid-ellipsoid, ca. 10 × 5-8 mm, sessile. Male flowers: scattered among other flowers, pedicellate; calyx lobes 4. Female flowers: sessile. Achenes ovoid, tuberculate.



Ficus racemosa L.

[Moraceae]

[Syn: *Ficus glomerata* Roxb.]

Vernacular name(s): Dimiri (O); Gular (H); Goolar fig (E).

Distribution: B-4.

Description: Tree with few short aerial roots; bark grey to rusty. Leaves ovate-lanceolate, dark green above, paler beneath, glabrous above, 3 nerved. Figs on short leafless, scariously bracteolate, globose to pyriform, pubescent or tomentose.

Ficus religiosa L.

[Moraceae]

[Syn: *Urostigma religiosum* (L.) Gasparrini]

Vernacular name(s): Aswastha (O); Peepal (H); Sacred fig (E).

Distribution: B-2, B-4.

Description: Trees evergreen upto 30 m. Petiole slender, 3.5-13 cm. Leaf blade broadly ovate to ovate-orbiculate, 7-25 × 4-16 cm, thinly leathery, apex abruptly long-caudate or long-acuminate, tip to 2.5-9 cm, basal veins 2(-3) pairs, lateral veins 6-9 pairs, the main veins finely reticulate. Syconia paired, sessile, dark purple, nearly globose, 1-1.5 × 1-1.5 cm, glabrous, ostiole closed by 3 bracts, 2-3 mm wide, umbonate.



Gliricidia sepium (Jacq.)Walp.

[Fabaceae]

[Syn: *Gliricidia maculata* (Kunth) Walp.]

Vernacular name(s): Saranga (O);
Mother of cocoa (E).

Distribution: B-2.

Description: Short tree up to 8 m tall with loose canopy, branches softer, long and slender. Leaves elliptic-oblong, 3-5×1.5-3cm; crushed leaf smells strong. Flowers in long dense bunches, pinkish. Fruit flat, woody, bean like; seeds flat and round.



Gardenia gummifera L.f.

[Rubiaceae]

Vernacular name(s): Kurudu(O);
Cumbi-gum tree (E).

Distribution: B-2.

Description: Small trees, to 8 m high. Leaves simple, opposite, decussate; stipules intrapetiolar, connate; lamina 4-8 × 1.5-4 cm, ovate, obovate or obovate-oblong, shiny, coriaceous; lateral nerves 8-20 pairs, parallel. Flowers bisexual, white turns to yellow, axillary, solitary or in lax cymes. Corolla 4.5 cm across, cylindrical. Fruit a berry, 4 × 3 cm, ellipsoid or oblong; seeds rugose.

Gmelina arborea Roxb.

[Verbenaceae]

[Syn: *Premna arborea* (Roxb.) Roth]

Vernacular name(s): Gambhari (O);
Gambhar (H); Gumbar tree (E).

Distribution: B-3.

Description: Tree, 8-15 m tall, with greyish-yellow, smooth bark. Leaves opposite, broadly ovate, acuminate, cordate, glabrous above, tomentose beneath. Flowers brownish yellow, 2.5-3.7 cm long. Calyx campanulate. Corolla tomentosely hairy. Drupe obovoid, usually 2-1 celled and seeded.



Haldina cordifolia (Roxb.) Ridsale

[Rubiaceae]

[**Syn:** *Adina cordifolia* (Roxb.) Hook. ex Jack.]

Vernacular name(s): Kuruma (O); Hardu (H); Yellow teak (E).

Distribution: B-2.

Description: Tree, 10-15 m tall with grey-light bark. Leaves 5-20 x 2-18 cm, broadly ovate, orbicular, abruptly acuminate, entire, glabrous above, pubescent beneath, cordate at base; petiole 2-6 cm long. Flowers dull yellow, in globose heads, 2 cm across, axillary. Calyx tubes linear. Corolla 5.5 mm. Fruiting heads dry.



Helicteres isora L.

[Sterculiaceae]

[**Syn:** *Helicteres roxburghii* G. Don.]

Vernacular name(s): Mesa shrungi (O); Marod phalli (H); East-Indian screw tree (E).

Distribution: B-4.

Description: Small trees, up to 2(-8) m tall puberulent. Leaf blade broadly oblong-obovate, or almost circular, 10-12 (-23) × 7-9 (-17) cm, thinly leathery. Inflorescences axillary, usually 2 or 3 flowers per axil, 3.5-4 cm in diam. Petals red or purple. Capsule on ca. 2.5 cm stalk, cylindrical, conspicuously spirally twisted, black when mature, 4-8 × (0.5-) 0.7-0.9 (-1) cm. Seeds many to 2 mm.

Hibiscus tiliaceus L.

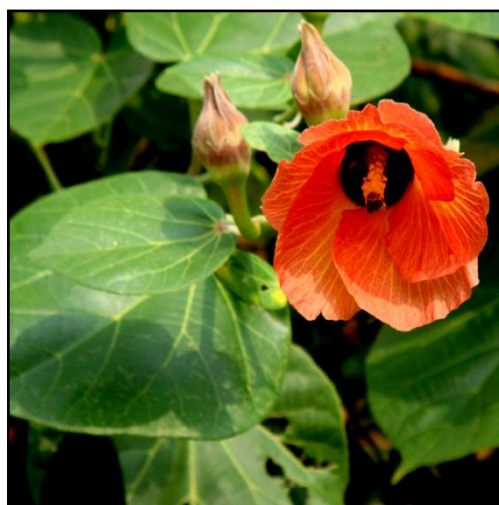
[Malvaceae]

[**Syn:** *Hibiscus boninensis* Nakai]

Vernacular name(s): Kurubeli(O); Sea hibiscus (E)

Distribution: B-2.

Description: Evergreen trees, 4-10 m tall. Leaf blade nearly orbicular to broadly ovate, 8-15 × 8-15 cm, leathery, green. Inflorescence a 1- to few-flowered cyme, terminal or axillary. Corolla yellow with dark purple center, campanulate, 6-7.5 cm in diam, petals obovate, 4-4.5 cm. Capsule subglobose to ovoid, ca. 2 cm, valves 5, woody. Seeds reniform, smooth, glabrous.



Hylandia dockrillii Airy Shaw
[Euphorbiaceae]

Vernacular name(s): Mansi katha (O);
Blush wood (E).

Distribution: B-2.

Description: Medium size tree. Leaf blades about 8-20 x 3.5-9.5 cm. Calyx and corolla ferruginous-pubescent on the outer surface. Calyx about 7-8 mm long. Corolla about 10-12 mm long. Fruits clothed in ferruginous hairs until maturity, depressed globular, laterally compressed, 2-lobed and longitudinally ribbed, about 20-30 x 35-45 mm. Seeds globular, about 12-15 mm diam.



Lagerstroemia speciosa (L.) Pers.
[Lythraceae]

(Syn: *Lagerstroemia reginae* Roxb.)

Vernacular name(s): Patali (O);
Jarul (H); Queen crape myrtle (E).

Distribution: B-1, B-2.

Description: Tree, 7 m or more tall. Leaves oval or elliptic, obtuse or acutish, 8.2-15.2 cm long, 3.3-7.1 cm broad. Panicles 14-35.5 cm long. Hypanthium 8-10 mm long, 11-13 mm broad, 12-ribbed, tomentose. Sepals 7-8 mm long, 4.5-5 mm broad, in fruit spreading, woody. Petals 3.2-3.5 cm long, 2.1-2.5 cm broad, claw 5-6 mm. Capsule 1.7-2 cm in diameter, rugose.

Lanea coromandelica (Houtt.) Merr.
[Anacardiaceae]

(Syn: *Dialium coromandelicum* Houtt.)

Vernacular name(s): Mahi (O);
Mohin (H); Indian ash tree (E).

Distribution: B-2

Description: A small to medium sized tree, 10 m or more tall. Leaves imparipinnate; leaflets 5-9(-11) in number, opposite, subsessile, 50-140 x 22-50 mm, ovate to ovate-oblong. Flowers unisexual, greenish, the male in compound and female in simple racemes. Petals 4, 2 mm long, oblong, green yellow. Drupe 10-12 mm long, oblong, compressed, red.



Leucaena leucocephala (Lam.) de Wit
[Mimosaceae]

(Syn: *Mimosa leucocephala* Lam.)

Vernacular name(s): Sajana Pati (O);
Kiswahili (H); Cow tamarind (E).

Distribution: B-2, B-3.

Description: Small tree usually growing 2-10 m tall. Leaves 35 cm long, bipinnate, 3-10 pairs pinnae, 2-10 cm long and each bears 5-22 pairs pinnules. Flowers in dense globular clusters, sepals 2-2.5 mm long, five small greenish-white coloured petals. The fruit are elongated, linear, flattened, pods with a pointed tip. Pods 8-22.5 cm long 10-20 mm wide. Seeds oval-elliptic.



Licuala peltata Roxb. ex Buch.-Ham
[Arecaceae]

Vernacular name(s): Bilati Tala (O);
Fan palms (E).

Distribution: B-2.

Description: Evergreen palm tree. Solitary-stemmed, sometimes suckers to produce a number of stems from the base, slender bole, range in height from 1.5 - 5 m, 5 - 10 cm in diameter.

Limonia acidissima L.
[Rutaceae]

(Syn: *Feronia elephantum* Corr.)

Vernacular name(s): Kaintha (O);
Kavitha (H); Wood apple (E).

Distribution: B-2.

Description: Tree with axillary spines. Leaves fasciated, leaflet 5-7, opposite, elliptic or obovate, entire. Flowers 7.5 mm diam, in short racemes or racemes paniced. Sepals minute. Petals green or reddish, oblong, 3 mm. Fruit 6-8 cm diam. Many seeded, rind rough, woody.



Livistona chinensis (Jacq.) R.Br. ex Mart.
[Arecaceae]

Vernacular name(s): Chinese Fountain Palm (E).

Distribution: B-2.

Description: Stems to 15 m tall. Leaves palmate; spines denser proximally, hastula to 3 cm; regularly divided to ca. 1/2 their length into 50-90 segments. Inflorescences 1-1.2 m, branched to 3 orders, with 6 or 7 partial inflorescences; rachillae 10-18 cm. Flowers hermaphroditic, borne in clusters of 4-7, white or yellow, 2-2.5 mm. Fruits green or blue-green, globose to ellipsoid or pear-shaped.



Macaranga peltata (Roxb.) Muell-Arg.
[Euphorbiaceae]

(Syn: *Macaranga flexuosa* Wt.)

Vernacular name(s): Gondoguria (O); Chanda (H); Macaranga (E).

Distribution: B-2.

Description: Dioecious trees, to 15 m high. Leaves simple, alternate, stipulate; margin entire, coriaceous; 8-10 ribs from base, palmate, prominent beneath; lateral nerves 7-8 pairs. Flowers unisexual, greenish-yellow; male flowers: in axillary, much branched, dense, tomentose, panicles, concealed in large bracts; bracteoles concave; tepals 3, minute, obovate, cuneate. Fruit a capsule, 5-6 mm across, globose, hairy, glandular, black; seed one, black.

Magnolia champaca (L.) Baill. ex Pierre
[Magnoliaceae]

(Syn: *Michelia champaca* L.)

Vernacular name(s): Champa (O & H); Joy perfume tree (E).

Distribution: B-2.

Description: Medium to large trees, 9-24 m tall. Leaves 13-25 cm long, 4.5-8.5 cm broad, lanceolate to ovate-lanceolate. Flowers solitary, axillary, 5-7 cm in diameter, fragrant; perianth of 12-15 (-20) segments each, 2-3.5 cm long, subequal, pale yellow to yellow. Fruiting axis 5-10 cm long. Follicles 1-2 cm long, brown. Seeds 1-2 or several, brown.



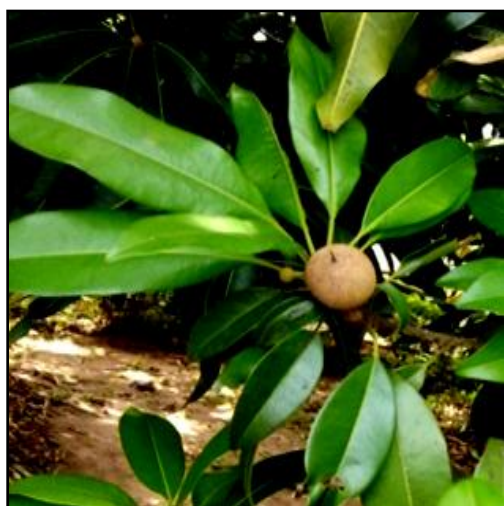
Mangifera indica L.

[Anacardiaceae]

Vernacular name(s): Amba (O);
Aam (H); Mango (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Evergreen tree, bark dark grey, rough with vertical fissures; blaze yellow; exudation yellowish, gummy. Leaves simple, alternate, clustered at the tips of branchlets. Flowers polygamous, yellowish-green, in terminal panicles. Fruit a drupe, mesocarp fleshy, endocarp fibrous. Seed sub-reniform.



Manilkara zapota (L.) P.Royen

[Sapotaceae]

(Syn: *Achras zapota* L.)

Vernacular name(s): Sapeta (O);
Chiku (H); Noseberry (E).

Distribution: B-1.

Description: Tree, 7-12 m tall, bark brown, rough. Leaves alternate, 4.5-6 x 2.5 cm, coriaceous, oblong-lanceolate or elliptic-oblong, glabrous, petiole 1-2 cm long. Flowers dull-white, solitary, axillary. Calyx-lobes 3+3. Corolla lobes 6, twisted. Berry 4.5-7 cm across, globose, rusty-brown. Seeds usually 5, oblong, large.

Melaleuca citrine (Curtis) Dum.Cours.

[Lythraceae]

[Syn: *Callistemon citrinus* (Curtis) Skeels]

Vernacular name(s): Ruchi granthi (O);
Bottle brush (E).

Distribution: B-2.

Description: A small tree growing to 5 m. Leaves alternate, flat, narrow egg-shaped with the narrower end near the base. Flowers red and arranged in spikes. The spikes are up to 45-70 mm in diameter and 60-100 mm long with up to 80 individual flowers. The petals are 3.9-5.8 mm long. Fruit woody, cup-shaped capsules, 4.4-7 mm long.



Mesua ferrea L.

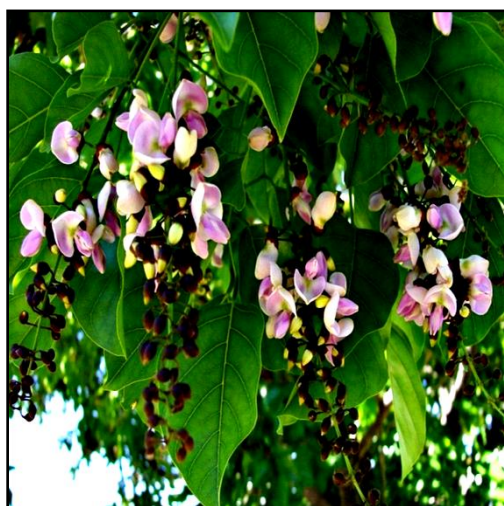
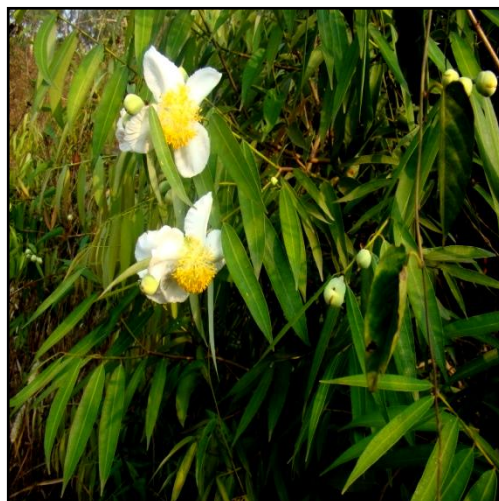
[Clusiaceae]

(**Syn:** *Calophyllum nagassarium* Burm.)

Vernacular name(s): Nageswara (O); Indian rose chestnut (E).

Distribution: B-2.

Description: Trees evergreen, 20-30 m tall. Leaves pendulous, petiolate; leaf blade lanceolate or narrowly ovate-lanceolate to linear-lanceolate, (4-)6-10 (-12) × (1-)2-4 cm, leathery. Flowers bisexual, solitary, axillary, 5-8.5 cm in diam. Sepals orbicular, convex. Petals white, obovate-cuneate, 3-3.5 cm. Fruit broadly ovoid or laterally depressed globose, ca. 3 × 2.5 cm, dry. Seeds 1-4, ± irregular in shape; coat brown, fragile.



Millettia pinnata (L.) Panigrahi

[Fabaceae]

(**Syn:** *Pongamia pinnata* (L.) Pierre)

Vernacular name(s): Karanja (O); Karanj (H); Pongam oil tree (E).

Distribution: B-2, B-3.

Description: Tree, 15-20 m tall. Leaf imparipinnate, rachis 5-15 cm long, leaflets 5-9, ca. 5-10 cm long, elliptic or ovate-oblong. Raceme shorter than the leaf. Pedicel ca. 7-10 mm long. Bract ca. 2.5 mm long. Calyx ca. 3.5-4.0 mm long, pubescent, obscurely toothed. Corolla white tinged with violet or pinkish. Fruit ca. 3.5-5.0 cm long, obliquely oblong, woody, indehiscent, usually 1-seeded.

Millingtonia hortensis L.

[Bignoniaceae]

Vernacular name(s): Preeti puspa(O); Neem Chameli (H); Bullet seed tree (E).

Distribution: B-2.

Description: Trees 8-25 m tall. Leaves 40-100 cm; leaflets elliptic, ovate, or ovate-oblong, (2-) 5-7 × 1.5-4 cm, glabrous. Inflorescences cymose-paniculate, ca. 25 cm in diam. Calyx small, copular. Corolla white, tube 3-7 cm, 2-3 mm in diam at base. Capsule linear, 30-35 × 1-1.5 cm, compressed. Seeds discoid-oblong, compressed, including wing 1.5-3.5 × 1-1.5 cm.



Mimusops elengi L.

[Sapotaceae]

Vernacular name(s): Baula (O);
Maulsari (H); Bullet seed tree (E).

Distribution: B-2, B-3.

Description: A large evergreen tree, upto 15 m tall. Leaves alternate, broadly ovate, 3.5-4.5 x 7-10.5 cm. Flowers axillary solitary or fascicled, creamish white, fragrant, ca. 15 mm in diameter, Calyx 6-lobed, lanceolate, tomentose. Corolla tube very short, lobes 24 in 2 series. Fruit ovoid, 2.5-4 cm long, orange, with persistent calyx.



Mitragyna parviflora (Roxb.) Korth
(Syn: *Nauclea parviflora* Roxb.)

Vernacular name(s): Kelikadamba (O);
Guri (H); Kaim (E).

Distribution: B-3.

Description: Tree, 8-12 m, deciduous, bark grayish, smooth. Leaves 3-14 x 2-13 cm, ovate, elliptic-oblong or obovate, obtuse, glabrous, cuneate at base, petiole 1.5-3 cm long. Flowers small, white, narrowly funnel shaped, bracteoles clavate. Fruiting heads 1.5-2 cm across. Capsules 0.2-0.3 cm long, ellipsoid, verrucose.

Morinda pubescens Sm.

[Rubiaceae]

Vernacular name(s): Aachhu(O);
Aal(H); Indian mulberry(E).

Distribution: B-2, B-3.

Description: Deciduous trees, to 12 m. Leaves simple, opposite, petiolate glabrous; lamina 7.5-25 x 2-8 cm, elliptic-lanceolate, oblanceolate or elliptic-oblong. Flowers bisexual, white, in terminal, globose heads. Corolla 2 cm long. Fruit a syncarp, 15-18 mm across, globose, pyrenes 4, oblong. Seeds not winged.



Moringa oleifera Lam.

[Moringaceae]

(Syn: *Guilandina moringa* L.)

Vernacular name(s): Sajana (O);
Drum Sojna (H); Drum stick (E).

Distribution: B-2.

Description: Plants 1-10 m tall. Leaves with pungent odour of horseradish; 30-60 cm, leaflets distributed on 4-8 pairs of pinnae; leaflets 75-150, blades bright to dark green, (0.5-) 1-2(-3) × (0.3-) 0.5-1.5(-2) mm, Panicles (5-)10-25(-35) cm, each flower subtended by glandular bract. Flowers sweet-scented, 2-3 cm; sepals 10-20 × 3-4 mm, petals cream, 1-2 cm, Capsules tan, 10-30(-55) × 1.5-3 cm, Seeds pale to dark brown, globular, 3-winged.



Muntingia calabura L.

[Muntingiaceae]

Vernacular name(s): Jamaica koli (O);
Jamaica cherry (E).

Distribution: B-1, B-2.

Description: Trees, upto 12 m tall. Leaves alternate, petiolate, stipules subulate, blade lanceolate to lanceolate-linear, 15 × 20 cm long, 60–150 × 20–50 mm wide, palmately veined. Flowers solitary, petals caducous, 5, distinct, white, 12–20 mm. Sepals 5, connate. Fruit a berry, red 10–15 mm diam, spheric. Seeds yellowish, 0.4–0.5 × 0.2–0.3 mm, 25–30 in number.

Murraya koenigii (L.) Spreng.

[Rutaceae]

(Syn : *Chalcas koenigii* Kurz. ex Swingle)

Vernacular name(s): Bhrusunga (O);
Katnim (H); Curry leaf tree (E).

Distribution: B-2.

Description: Small tree, ca. 5 m tall. Leaves imparipinnate, leaflets 9-27, 20-50 x 11-28 mm, ovate to ovate-lanceolate or orbicular, oblique. Flowers white, in terminal, branched cymes. Calyx lobes 5, triangular. Petals 7 mm, linear-oblong, glandular. Berry ovoid, 1 x 6 mm, black when ripe.



Murraya paniculata (L.) Jack
[Rutaceae]

(Syn: *Murraya exotica* L.)

Vernacular name(s): Kamini (O);
Marchula (H); Orange jasmine (E).

Distribution: B-1, B-2, B-3.

Description: Small tree, 5-8m tall. Leaves 10-12.5 cm long, ovate, ovate-elliptic, entire, acute, acuminate. Flowers white, in few-flowered or terminal cymes. Petals oblong - lanceolate or elliptic. Berry red or yellow, ellipsoid, 1-2 seeded.



Neolamarckia cadamba (Roxb.) Bosser
[Rubiaceae]

Vernacular name(s): Kadamba (O);
Kadamb (H); Kadam (E).

Distribution: B-1, B-2.

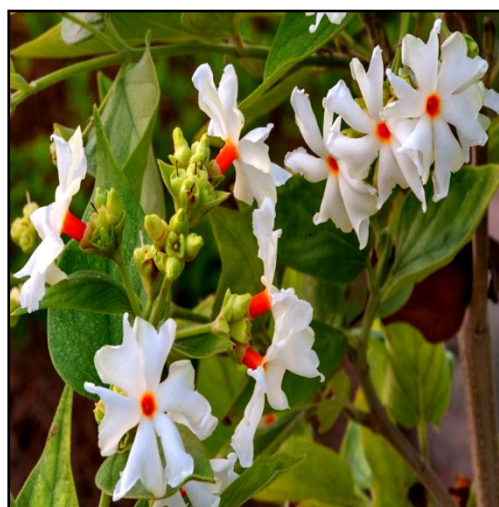
Description: Tree, grow up to 45 m tall, without branches for more than 25 m. Crown is umbrella shaped, branches characteristically arranged in tiers. Leaves simple, 13-32 cm long. Flowers orange, small, in dense, globose heads. They appear like solid, hairy orange balls. Fruits small capsules, packed closely together to form a fleshy, yellow or orange coloured in fructescence.

Nyctanthes arbor-tristis L.
[Oleaceae]

Vernacular name(s): Sephali (O);
Harsingar (H); Night jasmine (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Tree, 3-6 m tall, branches quadrangular. Leaves 5-13 x 2.5-7 cm, opposite, coriaceous, scarbridly hairy, ovate-elliptic or ovate. Flowers white, with orange center, 1.5-2 cm across, fragrant, in trichotomously cymose, pedunculate, capitate heads. Capsule elliptic or obovoid, glabrous. Seeds orbicular.



Olea europea L.

[Oleaceae]

(Syn: *Olea africana* Mill.)

Vernacular name(s): Olive (O, H & E)

Distribution: B-2

Description: An evergreen tree usually growing 2-10 m tall. Leaves are oppositely arranged, elongated, 3-10 cm long and 0.8-4 cm wide, glossy, dark green, upper surfaces and silvery, whitish, greenish or yellowish-brown undersides. Flowers creamy white in colour. Fruits are oval or ellipsoid, 15-30 mm long and 6-20 mm wide. Hard brown seed oblong in shape.



Peltophorum pterocarpum (DC.)

Baker ex K. Heyne

[Caesalpiniaceae]

(Syn: *Peltophorum ferrugineum* (Decne) Benth.)

Vernacular name(s): Radha chuda (O); Peela gulmohar (H); Copper pod (E).

Distribution: B-2, B-4.

Description: Dark foliage tree; branchlets rusty-tomentose. Leaves pinnate; pinnae 16-20; leaflets 20-30, oblong. Panicles rusty. Flowers yellow. Pods oblong, with the wing each side equal. Seeds 3, brown, oblong.

Phoenix sylvestris (L.) Roxb.

[Arecaceae]

Vernacular name(s): Khajuri (O); Khajur (H); Date palm (E).

Distribution: B-3

Description: Graceful palm with a large crown and rough trunk covered with persistent leaf bases. Leaves long, greyish-green, spines at the base. Flowers small, fragrant, borne in spadices. Fruiting spadix about 90 cm long, bearing oblong-ellipsoid berries.



Phyllanthus acidus (L.) Skeels

[Euphorbiaceae]

[**Syn:** *Phyllanthus distichus* (L.) Müll.Arg.]

Vernacular name(s): Narakoli (O); Harfarauri (H); Malay Gooseberry (E).

Distribution: B-2

Description: A small deciduous tree reaching 2 to 9 m in height. The leaves are ovate or lanceolate, green and smooth on the upper-side and blue-green on the underside. Flowers are small and pinkish and appear in clusters as long panicles. The fruits are numerous, oblate, with 6 to 8 ribs, and are densely clustered. They are pale yellow or white, waxy, crisp, juicy and very sour. About 4 to 6 seeds are present.



Phyllanthus emblica L.

[Euphorbiaceae]

(**Syn:** *Embllica officinalis* Gaertn.)

Vernacular name(s): Dhatri amla (O); Amla (H); Emblic myrobalan (E).

Distribution: B-2.

Description: Tree. Cataphylls small with 2 stipules. Leaves linear-oblong, glabrous. Flowers monoecious, yellowish, minute, in axillary fascicles. Drupe globose, succulent, yellow or tinged with pink when ripe, with 6-ridged putamen.

Pimenta dioica (L.) Merr.

[Myrtaceae]

Vernacular name(s): Sarba masala (O); All Spice (E).

Distribution: B-2.

Description: A small dioecious evergreen tree, 7-10 m tall. Leaves are 6-15 cm long, 3-6 cm wide, simple, opposite, and aromatic when crushed. Flowers are white, and occur on flower branches 5-15 cm long, aromatic and 8-10 mm in diameter. Four rounded petals about 3-4 mm long, deciduous. Fruits are round, drooping berries 4-6 mm in diameter, black. Fruits are aromatic on drying. Seed



two kidney-shaped.

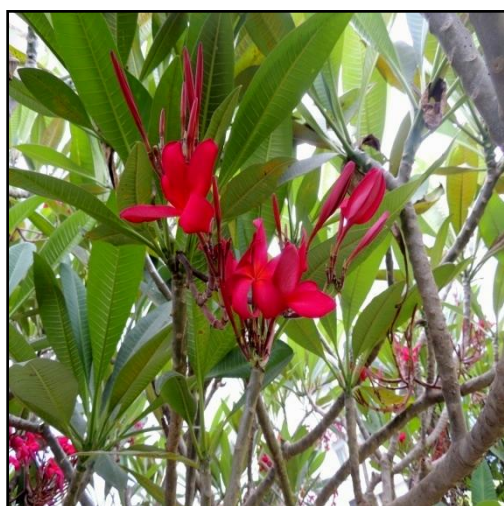
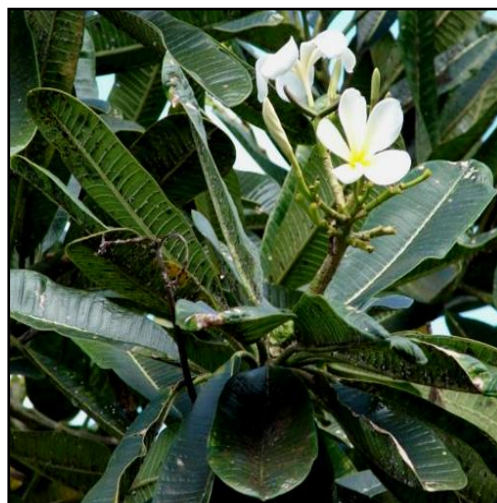
Plumeria obtusa L.

[Apocynaceae]

Vernacular name(s): Katha Champa (O); Lal gulachin (H); Frangipani (E).

Distribution: B-4

Description: Trees to 5 m tall. Branchlets pale green, thick, fleshy. Petiole puberulent; leaf blade obovate to narrowly so, dark green and shiny adaxially, tertiary venation strongly prominent abaxially, apex rounded. Corolla white, ca. 4 cm in diam., throat yellow; lobes spreading, slightly recurved. Follicles to 1 × 1.5 cm.



Plumeria rubra L.

[Apocynaceae]

(Syn: *Plumeria acuminata* Aiton.)

Vernacular name(s): Katha Champa (O); Lal gulachin (H); Frangipani (E).

Distribution: B-1, B-2, B-3, B-4

Description: Trees to 8 m tall, smooth, thin. Petiole to 7 cm; leaf blade elliptic to very narrowly so, 14-30 × 6-8 cm, glaucous, apex acute or acuminate; lateral veins 30-40 pairs. Corolla tinged with pink or purple at least outside, 4-6 cm in diam.; lobes pink, yellow, or white, with a yellow base, obliquely spreading. Follicles oblong.

Polyalthia longifolia Sonn.

[Annonaceae]

(Syn: *Guatteria longifolia* Wall.)

Vernacular name(s): Devdaru (O); Ashok (H); Mast tree (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Evergreen tree, upto 13 m tall. Leaves lanceolate, 21.5-30.0 × 3.7-5.6 cm. Sepals broadly deltoid, 2 × 2-3 mm. Petals narrow lanceolate, 10-19 × 2.5-3.5 mm, pale green to yellowish green. Receptacle convex. Fruit of 10-15 baccate monocarps on upto 37 mm long woody stalk; purplish black, 1-seeded, stipe ca. 12 mm long, stout, glabrous.



***Polyalthia suberosa* (Roxb.)Thw.**

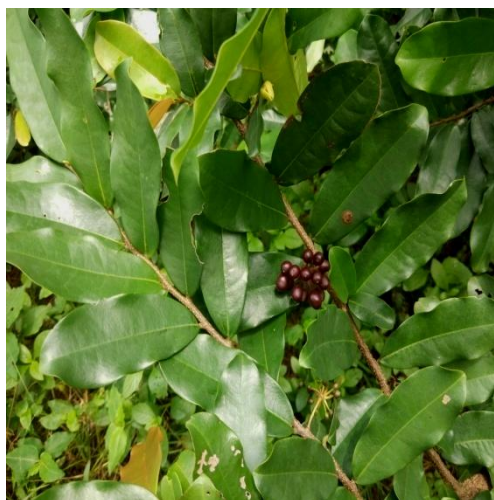
[Annonaceae]

[Syn: *Guatteria suberosa* (Roxb.) Dunal]

Vernacular name(s): Karadia (O);
Corky debbar tree (E).

Distribution:- B-1.

Description: Small trees, to 5 m tall. leaf blade oblong, elliptic-oblong, or narrowly obovate-oblong, membranous to papery, base narrowed and slightly oblique, Inflorescences extra-axillary, 1 (or 2)-flowered. Pedicellate; petals yellowish green. Seeds 1 or 2 per monocarp.



***Prosopis cineraria* (L.)Druce**

[Caesalpiaceae]

Vernacular name(s): Shami (O);
Chankura (H); Khejri tree (E).

Distribution: B-2.

Description: A medium sized tree up to 10 m tall, branches prickly, prickles curved, compressed. Leaves alternate, bipinnate, pinnae 1-2 pairs; leaflets 7-12 pairs, more or less sessile, oblong, oblique, apex usually mucronate. Flowers creamy white in pedunculate spikes. Calyx cup-shaped, truncate or obscurely 5 toothed. Petals 3-4 mm long, oblong, tips recurved. Pods 12.5-25 cm long, cylindrical, turgid. Seeds 10-15, oblong, compressed.

***Pterocarpus santalinus* L.f.**

[Fabaceae]

(Syn: *Lingoum santalinum* (L.f.)Kuntze)

Vernacular name(s): Rakta chandan (O & H); Red sandal wood (E).

Distribution: B-2

Description: A small to medium-sized, tree upto 11 m tall Leaves usually imparipinnate, 10-18 cm long; leaflets 3, broadly ovate or orbicular, coriaceous, Flowers yellow, calyx 5-6 mm long, teeth minute, deltoid. Fruits (pods) obliquely orbicular, 3.8-5 cm in diam woolly. Seeds 1-2, reddish-brown, smooth, leathery, 1-1.5 cm long.



Psidium guajava L.

[Myrtaceae]

Vernacular name(s): Pijuli (O);
Amrud (H); Guava (E).

Distribution: B-1, B-2.

Description: Evergreen tree, grow up to 3-6 m. Stem thick, inclined, branched, irregular, dense quadrangular twigs. Bark thin, cream coloured with pink spots. Leaves simple, short petiole, oblong, bright green. Inflorescence cyme or sometimes solitary flowers. Flowers large, stalked, showy. Fruits globose berries.



Pterospermum acerifolium (L.)Willd.

[Sterculiaceae]

Vernacular name(s): Muchukunda (O);
Muchukund (H); Maple leaved tree (E).

Distribution: B-2.

Description: Evergreen tree. Leaves broadly ovate-oblong to oblong-obovate, coriaceous, glabrous above. Flowers white, fragrant, 12-15 cm across. Sepals 4-5, linear oblong. Petals linear; oblanceolate, 8.5-12 cm long, glabrous. Gynadrophore upto 5 cm long, staminode white, ovary oblong, style filiform. Capsule oblong. Seeds up to 5 cm long.

Punica granatum L.

[Punicaceae]

Vernacular name(s): Dalimba (O);
Anar (H); Pomegranate (E).

Distribution: B-2.

Description: Small tree, 3-5 m tall with brown bark. Leaves 3-6 × 0.5-2 cm; oblong-lanceolate, obtuse, entire, subsessile. Flowers bright-red, solitary or in cymes of 2-3. Sepals 5-7, persistent. Petals 5-7, obovate. Fruit globose. Seeds angular.



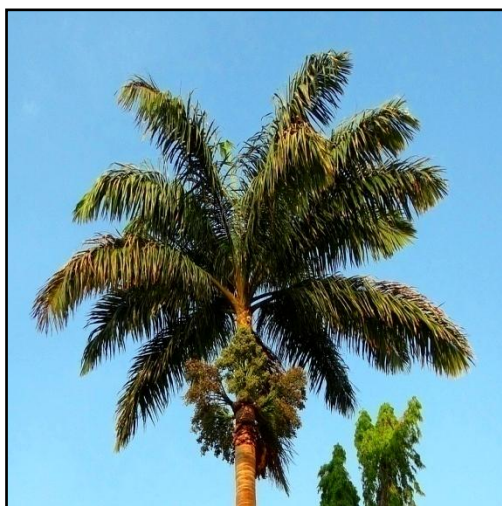
Ravenala madagascarensis Sonn.

[Strelitziaceae]

Vernacular name(s): Panthapadapa (O); Traveller's palm tree (E).

Distribution: B-2.

Description: small unbranched tree, 5-25 m height. Leaves paddle-shaped, banana-like, large (up to 4 m long and 0.5 m wide), with 2-4 m long petioles that terminate in large hollow basal sheaths. Flowers small with off-white boat-like bracts, produced in inconspicuous inflorescences up to 30 cm long amongst leaf petioles.



Roystonea regia (Kunth) O.F. Cook

[Arecaceae]

(Syn: *Oreodoxa regia* Kunth)

Vernacular name(s): Bilati shalapa(O); Royal palm(E).

Distribution: B-1, B-2.

Description: Stems gray-white, 30 diam; 35-41 cm, smooth. Leaves: segments inserted on rachis in several ranks at divergent angles, giving leaf an appearing almost plumose appearance. Inflorescences to 1 m; rachillae 11-31 cm, stiff. Flowers white; anthers pinkish. Fruits ripening from green through red to purplish black at maturity, dorsiventrally compressed obovoid, 9.5-10.5 mm, diam. 7.4-7.8 mm.

Sambucus canadensis L.

[Sambucaceae]

Vernacular name(s): Swetaprava (O); american elder (E).

Distribution: B-2.

Description: A small tree, upto 10 m tall. Leaves exstipulate or stipules inconspicuous; leaflets 5-7, oval to ovate, 3-7 x 1.5-4 cm; margin serrate; apex acute; surface glabrous to strigose; veins strigose. Inflorescence corymbose, upto 15 cm in diameter. Hypanthium turbinate, c. 1 mm long. Corolla rotate with 5, almost round lobes; lobe 1.5 mm long, 3-nerved. Fruit globose, black, 5-6 mm in diameter. Pyrenes oblong, 3.5 mm long, surface rugose.



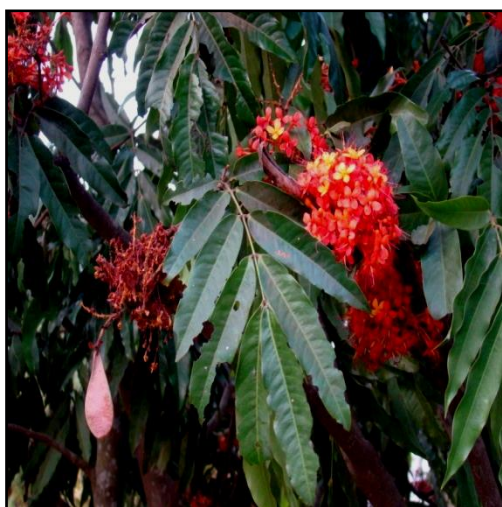
Santalum album L.

[Santalaceae]

Vernacular name(s): Chandana (O); Safed chandan (H); Sandal wood tree (E).

Distribution: B-2.

Description: Tree, 5-6 m, with dark-geyish bark. Leaves opposite, 3-7.5 x 1.5-3.5 cm, elliptic-ovate, obtuse; petiole 1-1.5 cm long. Flowers small in axillary or terminal, trichotomous cymes. Tepals ovate, rotate. Disc-lobes very thick. Stamens free from the tepals. Drupes 1 cm diam, globose, black, fleshy.



Saraca asoca (Roxb.) de Wilde

[Caesalpinaceae]

(Syn: *Saraca indica* Sensus Bedd.)

Vernacular name(s): Asoka (O); Asok (H); Asok (E).

Distribution: B-2.

Description: Small tree, 3.5 m tall with dark brown, rough bark. Leaves subsessile; leaflets 3-6 pairs, large oblong upto 22.5-6.2 cm, acute or acuminate. Flowers bright orange-scarlet in 7-10 cm broad panicle corymbs. Calyx lobes 3.7-12 mm. Pods 15-20 x 2.5-4.0 cm, slightly oblique on both ends.

Senna auriculata (L.)Roxb.

[Caesalpinaceae]

(Syn: *Cassia auriculata* L.)

Vernacular name(s): Majhi chakunda(O); Tarwar (H); Tanner's Cassia(E).

Distribution: B-2.

Description: Small shrubby tree, 2-4 m tall. Leaf 5-10 cm long; stipules foliaceous, rotund to reniform, with long apiculae on either side, persistent. Leaflets 4-12 pairs, 1.5-2.5 cm x 5-12 mm broad with an erect linear gland between each pair. Flowers in terminal and axillary corymbose racemes. Pedicel 1.2-2.5 cm long. Petals 1.2-2.5 cm long, bright yellow, veined with orange. Pod 7.5-12.5 cm long, ca. 1.2-1.5 cm broad, flat pilose.



Senna siamea (Lam). Irwin et Barneby
[Caesalpinaceae]

(Syn: *Cassia siamea* Lam.)

Vernacular name(s): Bada Chakunda (O);
Kassod (H); Siamese cassia (E).

Distribution: B-2.

Description: Trees, 10-15 m tall. Leaves 20-30 cm, linear, tiny, puberulent; leaflets 6-10(-15) pairs, oblong or ovate-oblong, 3-7 × 1.5-2.5 cm, leathery, emarginate, mucronate. Inflorescence is a racemes or very often a large terminal panicle on a robust peduncle 5-7 cm. Sepals suborbicular. Petals yellow, broadly obovate, 1.2-1.5 cm, shortly clawed. Legume flattened, 15-30 × 1-1.5 cm, purplish brown. Seeds 10-30, light brown, ovoid.



Sesbania grandiflora (L.) Poir.

[Fabaceae]

[Syn: *Sesbania coccinea* (L.f.)Pers]

Vernacular name(s): Agasti (O);
Hathya (H); Sesban (E).

Distribution: B-2.

Description: Small soft-wooded tree. Leaves 15-30 cm long; leaflets 10-20 pairs, oblong, 1.5-2.5 cm long. Flowers white or in one variety red, 7.5-10 cm long, in lax, 2-4 flowered racemes. Calyx campanulate. Pods slender, falcate or straight. Seeds ca. 30, to 8 mm.

Simarouba glauca DC.

[Simaroubaceae]

Vernacular name(s): Lakhmitaru (O);
Paradise tree (E).

Distribution: B-4.

Description: Small tree upto 13 m, leaves imparipinnate, 20-25 cm long, leaflets obovate; 5-9×2-3.5 cm, entire, obtuse, glabrous. Drupe ovoid, greenish in young stage, brownish black or black at maturity ca. 2.5×1.5 cm, glabrous, 1 seeded.



Spathodea campanulata P.Beauv.

[Bignoniaceae]

Vernacular name(s): Rugtoora (H); African Tulip tree (E).

Distribution: B-2, B-4.

Description: A large tree that can grow up to 25 m. Leaves simple, pinnate compound leaves, 30-40 cm long, about 7 pairs of leaflets and are slightly hairy and shiny above. Flowers large, showy and reddish-orange, campanulate, 10-12 cm long, mouth of limb about 7 cm across, lobes about 3 cm long, obtuse, margins strongly crisped, orange-yellow. Fruit capsules are lanceolate, slightly compressed, 17-25 × 3.5-7 cm.



Spondias pinnata (L.f.) Kurz

[Anacardiaceae]

(Syn: *Mangifera pinnata* L.)

Vernacular name(s): Ambada (O); Amra (H); Wild mango (E).

Distribution: B-2.

Description: Large or medium-sized tree. Leaves mango-smelling, entire, acuminate. Panicle 30-60 cm long when the tree is leafless. Flowers white, 8-9 mm across, sessile. Calyx salver shaped with 5-6 ovate. Petals ovate-oblong. Filament short, subulate. Drupes yellowish, usually 1-3 seeded.

Streblus asper Lour.

[Moraceae]

(Syn: *Diplothorax tonkinensis* Gagn.)

Vernacular name(s): Sahada (O); Sora (H); Siamese rough-bush (E).

Distribution: B-2.

Description: Small tree or much branched shrub, 5-7 m tall, with crooked trunk and rough, light-greyish bark. Leaves alternate, elliptic-obovate, 2-7 x 1-4 cm, coriaceous, serrate, shortly acuminate, subsessile. Male heads 6.2-7.5 mm diam, on 1-3-nate peduncles, nearly as long or upto 1.2 cm. Flowers 6-8, perianth ca. 2.5 mm long; tepals connate below. Drupes 0.4-0.6 cm across, ellipsoid, orange-yellow.



Syzygium caryophyllifolium (Lam.) DC.
[Myrtaceae]

(Syn: *Eugenia caryophyllifolia* Lam.)

Vernacular name(s): Chhota jambu (O);
Jamun (H); Small blue berry (E).

Distribution: B-2.

Description: Trees, 6-20 m tall. Petiole 1-2 cm; leaf blade broadly elliptic to narrowly elliptic, base broadly cuneate to rarely rounded. Inflorescences axillary on flowering branches or occasionally terminal, paniculate cymes, to 11 cm. Hypanthium obconic or long pyriform. Calyx lobes inconspicuous. Petals 4, white or light purple, coherent, ovate. Fruit red to black, ellipsoid to pot-shaped; persistent calyx tube.



Syzygium cumini (L.) Skeels

[Myrtaceae]

[Syn : *Syzygium jambolanum* (Lam.) DC.]

Vernacular name(s): Jamu (O);
Jamun (H); Indian Blackberry (E).

Distribution: B-1, B-2.

Description: Evergreen tree up to 20 m. Leaves smooth, glossy, elliptic to oblong or ovate. Flowers are greenish white. Fruits are berry, oblong, black, juicy shining when ripe.

Syzygium jambos (L.) Alston
[Myrtaceae]

(Syn: *Eugenia jambos* L.)

Vernacular name(s): Golab jamu (O);
Champeyah (H); Malabar plum (E).

Distribution: B-2.

Description: Tree. Leaves oblong-lanceolate to lanceolate, 10-19 x 2-4.5 cm. Flowers white in few flowered terminal raceme like cymes or sometimes panicles. Calyx turbinate. Petals 4, orbicular or suborbicular. Filaments subulate. Berries yellowish or whitish when ripe. Seeds 1-2, grey.



Syzygium samarangense (Bl.) Merr. & Perr.

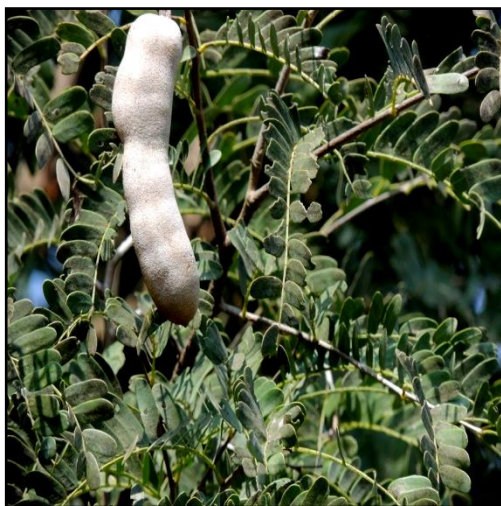
[Myrtaceae]

(Syn: *Eugenia javanica* Lam.)

Vernacular name(s): Jamurola (O & H); Wax apple; Java apple (E).

Distribution: B-2.

Description: Small tree. Leaves subsessile or very shortly petioled. Flowers white, 3.7 cm across, in peduncled, compound and lax cymes. Calyx - tube turbinate. Berries white or pinkish, turbinate, crowned by the inflexed calyx - lobes.



Tamarindus indica L.

[Caesalpiniaceae]

Vernacular name(s): Tentuli (O); Imli (H); Tamarind tree (E).

Distribution: B-2.

Description: Large tree with light-grey rough bark. Leaflets 10-20 pairs, small, linear oblong, glabrous. Flowers ca. 1 cm across, in lax racemes. Calyx lobes subequal, 2 lowest connate. Petals yellow with red streaks. Anthers large. Pods 7.5-15 × 1.5-2.5 cm. Seeds 3-10.

Tectona grandis L.f.

[Verbenaceae]

Vernacular name(s): Saguan (O); Sagun (H); Teak (E).

Distribution: B-2.

Description: Trees. Bark light brown or grey. Leaves large, elliptic or obovate, scabrid above, stellate-tomentose beneath. Flowers white, short pedicelled. Drupe subglobose, 4-lobed, with a thick spongy covering.



Thespesia populnea (L.) Soland. ex Correa

[Malvaceae]

(Syn: *Hibiscus populneus* L.)

Vernacular name(s): Habeli (O); Indian tulip tree (E).

Distribution: B-4.

Description: Trees, to 15 m high. Leaves simple, alternate, lamina 5-12.7 x 5.5-15 cm, orbicular or ovate, coriaceous, 5-7 nerved from the base, palmate. Flowers bisexual, yellow, showy, solitary or in cymes, axillary or terminal; calyx copular. Corolla light yellow with dark purple centre, fading to purplish-pink, broadly campanulate; petals 5, 5-7.5 x 4-6 cm. Fruit a capsule, globose. Seeds many, ovoid.



Terminalia arjuna (Roxb. ex DC.) Wight & Arn.

[Combretaceae]

(Syn: *Pentaptera arjuna* Roxb.)

Vernacular name(s): Arjuna (O & H); Arjun (E).

Distribution: B-1.

Description: Tree, 15-20 m tall with bark grey or pale green, smooth. Leaves subopposite, 9-15 x 4-6.5 cm, elliptic-oblong, coriaceous, shallowly crenate-serrate, petioled. Flowers white, 0.3-0.4 cm across, in paniced spikes. Fruit 3-3.5 cm long, ovoid, winged. Woody, glabrous.

Terminalia bellerica (Gaertn.) Roxb.

[Combretaceae]

(Syn: *Myrobalanus bellirica* Gaertn.)

Vernacular name(s): Bahada (O); Bahera (H); Belliric myrobalan (E).

Distribution: B-1.

Description: Trees, 15-20 m tall with greyish-brown bark. Leaves 5-18 x 3-10 cm, elliptic-oblong, acute, coriaceous, cuneate at base, petiolate. Flowers pale yellow, 0.4 x 0.3 cm, extra-axillary spikes, 5-12 cm long. Calyx tube cupular, densely villous inside. Fruit 1.5-2.5 cm across, globose, brown-tomentose.



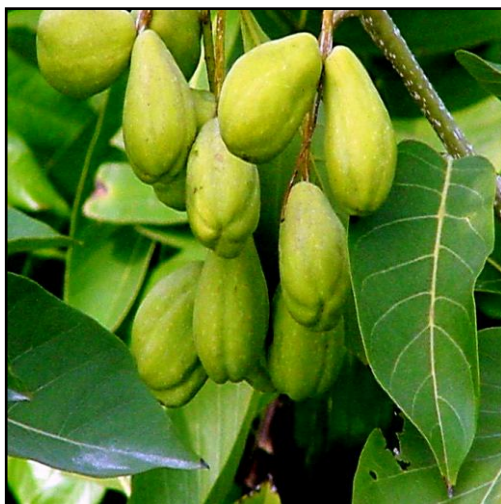
Terminalia catappa L.

[Combretaceae]

Vernacular name(s): Desi badam (O); Jangli badam (H); Indian Almond (E).

Distribution: B-2.

Description: Spreading trees, horizontal branches growing in wide spreading circles at different levels on the trunk. Leaves large, leathery, oval, which turn red before they fall. Flowers greenish - white, both female - and male flowers grow on the same tree; these flowers are inconspicuous and not very showy. Fruit pale green, almond shaped.



Terminalia chebula Retz.

[Combretaceae]

(Syn: *Myrobalanus chebula* Gaertn.)

Vernacular name(s): Harida (O); Harra (H); Chebolic myrobalan (E).

Distribution: B-1.

Description: Tree, 9-15 m tall, bark dark-brown, longitudinally fissured. Leaves 10-18 x 4-9 cm, elliptic-oblong, entire, acute, silky pubescent when young; petiole usually 2-glandular, 1.5-2 cm long. Flower creamy white, in 5-9 cm long terminal panicles. Drupes ellipsoid, 2-2.5 cm long.

Ziziphus mauritiana Lam.

[Rhamnaceae]

(Syn: *Ziziphus jujuba* Mill.)

Vernacular name(s): Bara koli (O); Ber (H); Indian jujube (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Small deciduous tree with thorny branches. Leaves shiny-green, ovate-acute. Flowers small, inconspicuous, yellowish-green petals. Fruit edible, oval drupe.



* * *

SHRUBS

Acalypha wilkesiana Mull. Arg.

[Euphorbiaceae]

Vernacular name(s): Copper leaf (E).

Distribution: B-2.

Description: Evergreen shrub. Closely arranged crown, erect stem, many branches, covered in fine hairs. Leaves flat or crinkled, coppery green with red splashes, large and broad with teeth around the edge. Male flowers in long spikes which hang downwards while the female flowers are in short spikes.



Adenium obesum (Forssk.) Roem. & Schult.

[Apocynaceae]

Vernacular name(s): Maru golapa (O); Desert Rose (E).

Distribution: B-2.

Description: Succulent shrub 0.5-2 m height, with a swollen base known as a caudex. Stem is hard and woody. Leaves smooth, glossy, obovate with entire margin and truncate or rounded leaf apex spirally arranged. Inflorescence terminal. Flowers are tubular with 5 oval-shaped lobes that are flared and perpendicular to the floral tube axis, whitish pink colour. Fruit a follicle.

Agave americana L.

[Agavaceae]

Vernacular name(s): Baramasi (O); Kamal cactus (H); Agave (E).

Distribution: B-2.

Description: It has a spreading rosette, about 4 m wide, of gray-green leaves upto 6 ft. long, each with a spiny margin and a heavy spike at the tip, Occasionally flowering, spike with a cyme of big yellow flowers, may reach up to 25 ft. in height. The plant dies after flowering, but produces suckers or adventitious shoots from the base, which continue its growth.



Agave salmiana Otto ex Salm-Dyck
[Agavaceae]

Vernacular name(s): Giant Agave (E).

Distribution: B-2.

Description: A vigorous and evergreen plant. The green leaves are strap shaped, upto 5 feet (1.5 m) long with large spines (7.5 cm) arranged its leaf margins. When the plant matures and blooms the tall candelabra inflorescence rises to over 6 m bearing yellow flowers.



Allamanda schottii Pohl

[Apocynaceae]

(Syn: *Allamanda neriifolia* Hook.)

Vernacular name(s): Buda kaniera (O);
Bush Allamanda (E).

Distribution: B-2.

Description: Evergreen tropical shrub. Flowers yellow, trumpet-shaped with orange-red throat stripes, arranged in clusters. Leaves leathery, elliptic to obovate, dull green, 2-4 inches long, appear in whorls of 3-5 along the stems. Fruits globose, prickly capsule.

Arachnothryx leucophylla (Kunth)
Planch.

[Rubiaceae]

(Syn: *Rondeletia leucophylla* Kunth)

Vernacular name(s): Bush Pentas (E).

Distribution: B-2.

Description: Woody evergreen shrub with a round shape, typically growing up to 1 - 3 m. Opposite leaves are lanceolate to narrowly ovate (10 - 12 cm long, 2 cm wide). Sessile flowers salverform, tubular with 4 bright pink lobes. Inflorescences cymose. Fruits are small, dry and indehiscent, contain many seeds.



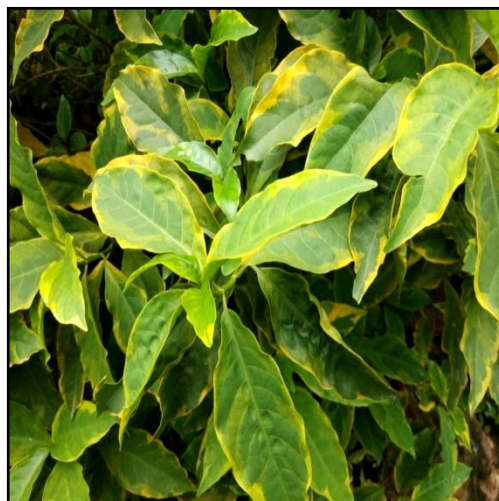
Aucuba japonica Thunb.

[Garryaceae]

Vernacular name(s): Japanese laurel (E).

Distribution: B-2.

Description: A shrub upto 2-3 m, stem hard, woody, greenish at young stage. leaves opposite, broad lanceolate, ovate elliptic, 5-15×3-7.5 cm, heavily spotted with creamy-yellow spot. Flowers dioecious. small, 4-8 mm, each with four purplish-brown petals; produced in clusters of 10-30 in a loose cyme. The fruit is a red drupe, approximately 1 cm.



Bougainvillea spectabilis Willd.

[Nyctaginaceae]

Vernacular name(s): Kagaja phula (O); Booganbel (H); Bougainvillea (E).

Distribution: B-2.

Description: Woody vine or shrub. Stem pubescent. Leaves heart-shaped, thorny. Flowers small, white, inconspicuous, highlighted by several brightly coloured bracts. Bracts white, red, mauve, purple-red, or orange. Fruit small, inconspicuous, dry, elongated achene.

Caesalpinia pulcherrima (L.) Sw.

[Caesalpiaceae]

Vernacular name(s): Radha chuda (O); Guletura (H); Peacock flower (E).

Distribution: B-2.

Description: Small tree; Leaves are bipinnate, bearing three to 10 pairs of pinnae, each with six to 10 pairs of leaflets. Inflorescence raceme. Flowers yellow, orange, or red coloured. Fruit is a pod of 6-12 cm long.



Cajanus cajan (L.) Millsp.

[Fabaceae]

(Syn : *Cajanus indicus* Spreng.)

Vernacular name(s): Harada (O);
Pegion Arhar (H); pea (E).

Distribution: B-4.

Description: Erect shrub, 1.5-4 m tall. Leaf pinnately trifoliolate, leaflets 2.5-10 cm long, 1.5-3.5 cm broad, elliptic to lanceolate. Pedicel 1-1.7 cm long, pubescent. Calyx velvety pubescent and glandular, tube 5 mm long, teeth 4-7 mm long. Corolla bright yellow with reddish brown or crimson lines. Fruit 4.5-10 cm long, 8-14 mm broad, pubescent and glandular.



Calliandra hematocephala Hassk.

[Mimosaceae]

Vernacular name(s): Powder Puff (E).

Distribution: B-3.

Description: A shrub with brown bark. Leaves alternate, bipinnate, upto 14 cm long, pinnae paired, 10-11 cm long, leaflets opposite, more or less sessile, 4-8 pairs, 1.5-3 cm long, lanceolate, apex acute slightly curved on one side near the apex, coriaceous. Flowers in axillary heads, scarlet. Calyx campanulate toothed. Corolla funnel-shaped, deeply 5 cleft. Pods strap shaped, slightly falcate, flat.

Calotropis gigantea (L.) R.Br.

[Apocynaceae]

Vernacular name(s): Arakha (O);
Aak (H); Rubber Bush (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Spreading shrub, oozing copious milky sap when cut or broken. Leaves opposite, grey-green, broadly elliptic, two rounded basal lobes, no leaf stalk. Flowers waxy white, petals 5, purple-tipped inside. Fruit grey-green, inflated, numerous seeds with tufts of long silky hairs at one end.



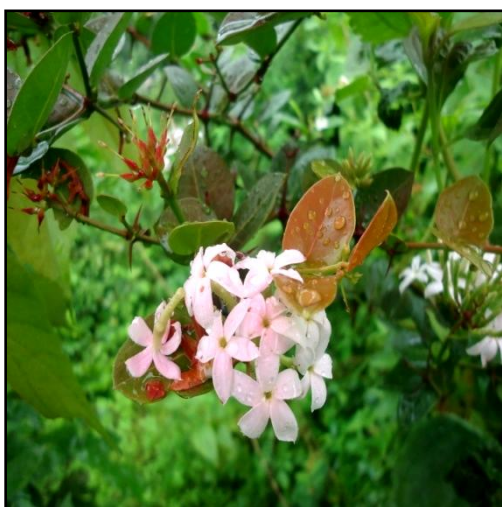
Carica papaya L.

[Caricaceae]

Vernacular name(s): Amruta vanda (O); Papita (H); Papaya (E).

Distribution: B-2, B-3.

Description: Small, sparsely branched shrub, leaves spirally arranged confined to the top of the trunk. Leaves are large, all parts of the plant contain latex in articulated laticifers. Flowers are sweet-scented, five parted and highly dimorphic; male and female flowers are borne in the leaf axils creamy yellow coloured. Fruit is a large berry.



Carissa spinarum L.

[Apocynaceae]

(Syn : *Carissa opaca* Stapf ex Haines)

Vernacular name(s): Karanda Koli (O); Jungli Karonda (H); Wild Karanda (E). Amruta vanda

Distribution: B-3.

Description: Shrub, upto 3.5 meter. Leaves glabrous, opposite, elliptic, ovate or rounded, ca.1.25x.7-2 cm, coriaceous. Flowers white or light rose, sweet scented, ca. 2 cm across. Calyx ca. 2 mm long. Corolla tube slender, 8-12 mm long, lanceolate. Berry ellipsoid or subglobose, 6-8 mm long, dark purple when ripe, with milky juice, edible.

Cascabela thevetia (L.) Lippold.

[Apocynaceae]

(Syn : *Thevetia peruviana* (Pers.) Schum.)

Vernacular name(s): Kaniar (O); Kaner (H); Yellow oleander (E).

Distribution: B-2.

Description: A large shrub reaching 6-7 m. Leaves spiral or alternate, crowded linear-lanceolate, 8-15 × 1 cm. inflorescence of few flowered cymes. Flowers yellow or orange. Calyx 6-7.5 mm long, glabrous, persistent. Corolla ca. 5 cm long, tubular at the base, campanulate at the throat, lobes 3-3.5 × 1.7 cm, obovate. Fruit somewhat rhomboid, 3 cm long. Seeds 2(-4), ca. 1 cm long.



Cestrum nocturnum L.

[Solanaceae]

Vernacular name(s): Hena (O);
Queen of the night (E).

Distribution: B-2.

Description: Shrubs erect or sprawling, 1-3 m tall. Leaf blade oblong-ovate or oblong-lanceolate, 6-15 × 2-4.5 cm, entire. Inflorescences drooping, many-flowered, axillary or terminal racemose panicles, 7-10 cm. Flowers strongly night scented. Pedicel 1-5 mm. Corolla greenish or whitish yellow, 1.5-2.5 cm, tube slightly contracted at throat, lobes 3-4 mm. Seeds 1-5, ellipsoid, 3.5-4.5 mm.



Chromolaena odorata (L.) R.King & H.Robins

[Asteraceae]

(**Syn:** *Eupatorium odoratum* L.)

Vernacular name(s): Pokasungha (O);
Tivra gandha (H); Siam weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect shrub. Leaves petiolate, deltoid-ovate, pubescent on both sides. Heads bluish, cylindrical, in dense terminal corymbs. Achenes slender, angular, with 4-5 slightly scabid ribs; pappus whitish.

Citrus aurantifolia (Christm. & Panz.) Swingle

[Rutaceae]

(**Syn:** *Limonia aurantifolia* Christmann)

Vernacular name(s): Kagajilembu (O);
Kaghzi nimbu (H); Lime(E).

Distribution: B-2.

Description: Spiny bush 2-3 m tall, spines short and sharp. Leaves 30-60 x 10-38 mm, elliptic-oblong, crenate; petiole narrowly winged. Flowers 3-10, perfect and staminate, white. Calyx cupular, fleshy. Fruit ovoid or rounded, 25-50 mm in diameter, shortly mamillate, greenish-yellow when ripe, pulp greenish, very acid.



Citrus grandis (L.) Osbeck

[Rutaceae]

(Syn: *Citrus decumana* L.)

Vernacular name(s): Tabha (O);
Chakotra (H); Forbidden fruit (E).

Distribution: B-2.

Description: Large Shrub, 3-5 m tall, branches spreading, spines usually blunt when present. Leaves 70-100 x 45-70 mm, broadly ovate-elliptic, subacute to obtuse, crenulate, margin undulate; midrib and venis pubescent. Petiole broadly winged, c. 15 mm broad, obcordate. Flowers large, pedicel pubescent. Fruit 13-17 cm in diameter, globose or pyriform, rind thick, yellow. Seeds ridged.



Clerodendrum indicum (L.) Kuntze

[Verbenaceae]

(Syn: *Clerodendrum siphonanthus* R. Br.)

Vernacular name(s): Bramhajasti(O);
Bharngi(H); Tubeflower (E).

Distribution: B-2.

Description: Shrub, 1.5-3 m tall. Leaves verticillate, sessile, 3-5 in each whorl, 10-20 cm long, Cymes verticillately arranged to form a terminal, 20-25 cm long panicle. Flowers white, ca. 1.5 cm across pedicels up to 1.5 cm long. Corolla-tube 8-10 mm long, glabrous. Drupe ca. 1 cm in diameter, bluish-black, enclosed by enlarged red coloured calyx.

Clerodendrum inerme (L.) Gaertn.

[Verbenaceae]

Vernacular name(s): Phuljholi (O);
Sang-kupi (H); Glory bower (E).

Distribution: B-2, B-4.

Description: Straggling shrub. Leaves glabrous, elliptic, closely punctulate, with glands beneath. Flowers white with bright red filaments, mostly in axillary, 3-7 flowered cymes from the uppermost leaves. Drupe pyriform, 4 grooved.



Clerodendrum viscosum Vent.

[Verbenaceae]

(**Syn:** *Clerodendrum infortunatum* auct. non. L.)

Vernacular name(s): Bhuansuni (O); Bhant (H);

Distribution: B-2, B-4.

Description: Shrub; hairy branches. Leaves broadly ovate, thinly hairy on both sides, glandular beneath. Flowers white with pink centre or pink spotted, in large terminal corymbose panicles. Drupe bluish-black, enclosed by calyx.



Codiaeum variegatum (L.) Juss.

[Euphorbiaceae]

Vernacular name(s): Baksa gachha (O); Garden croton (E).

Distribution: B-2.

Description: Evergreen shrub. Stems contain milky sap that bleeds from cut stems. Leaves large, thick, leathery, shiny evergreen, alternately arranged. Inflorescence long racemes, 8-30 cm long, with male and female flowers on separate inflorescences. Male flowers are white with five small petals and 20-30 stamens, Female flowers yellowish, with no petals. Fruit capsule, three 6 mm seeds.

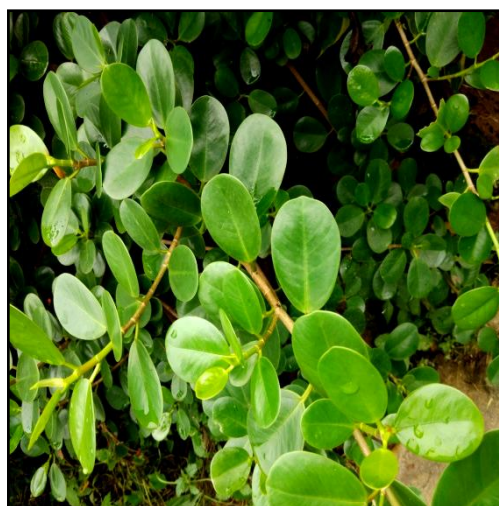
Coprosma repens A. Rich.

[Rubiaceae]

Vernacular name(s): Darpana gulma (O); Mirror bush (E).

Distribution: B-2.

Description: A shrub, 2-5 m. leaf shiny, ovate-elliptic glabrous, glaucous, margin obtuse, mid vein prominent. Male flowers appearing in dense, compound clusters, the female flowers in smaller clusters. Female plants produce orange-red ovoid drupes which are around 8 mm in diameter and 10 mm in length. The fruit is orange to orange-red berries.



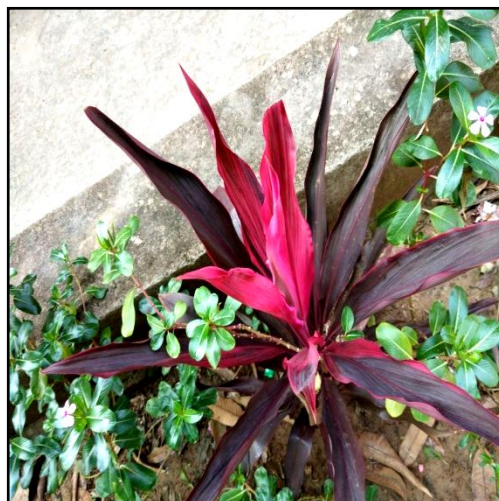
Cordyline fruticosa (L.) A.Chev.

[Agavaceae]

Vernacular name(s): Soubhagya gachha (O); Hawaiian Ti Plant (E).

Distribution: B-2.

Description: Upright growing shrub, 3 - 5 m tall. Leaves lanceolate, dark purple with streaks of pink, about 80 cm long. Inflorescence a panicle about 30 cm long. Flowers white to lavender, small. Fruit is a red berry.



Crossandra infundibuliformis (L.) Nees

[Acanthaceae]

(Syn: *Crossandra undulaefolia* Salisb.)

Vernacular name(s): Itaphula (O); Priyadarsha (H); Crossandra (E).

Distribution: B-2.

Description: Undershrub. Leaves ovate, lanceolate or elliptic, petiole to 5 cm. Spikes oblong, 2.5 - 10 cm long; bracts imbricate, elliptic. Flowers usually orange. Calyx lobes 5, ovate or lanceolate. Corolla-tube slender, curved at mouth; limbs with 5 subequal elliptic lobes, imbricate in bud. Capsule oblong. Seeds 4, orbicular.

Crotalaria spectabilis Roth

[Fabaceae]

Vernacular name(s): Jhumjhumka (O); Ghungri (H); Showy Rattleod (E).

Distribution: B-2.

Description: Perennial shrub, 1-1.5 m tall. It sports many branches covered with velvety hairs. Oblong leaves are 4-9 cm long, with a wedge-shaped base. Numerous large yellow flowers occur in erect racemes, 15-30 cm long, at the end of branches. Flowers are 2.5 cm across, bright yellow, with purple tinge.



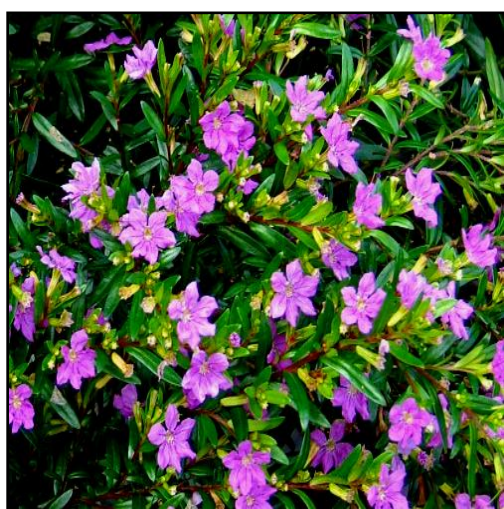
Cryptostegia grandiflora R.Br.

[Apocynaceae]

Vernacular name(s): Agandhi Champa (O); Rubber ki bel (H); Rubber vine (E).

Distribution: B-1.

Description: A weak shrub upto 3 m. Leaves elliptic, abruptly narrowed at both ends, 5-11 × 3.7-5 cm. Petiole 0.8-1.3 cm long. Flowers in di- or tri-chotomous cymes. Bracts caducous. Corolla 5-6 cm long, White. Follicles 10-13 × 25-2.6 cm, woody, angled or winged. Seeds 8-9 mm long, oblong compressed, coma ca. 3.8 cm long.



Cuphea hyssopifolia Kunth

[Lythraceae]

(Syn: *Parsonsia hyssopifolia* (Kunth) Standl.)

Vernacular name(s): False Heather (E).

Distribution: B-2.

Description: An erect, compact, shrub upto 2.5 m height. Leaves simple, subsessile opposite, pinnately-veined, 10 to 30 mm long. Flowers solitary, trumpet-shaped. Petals 6, purple, 3 to 3.5 mm long. Sepals crinkled, flower pink. Fruit capsules leathery or berry like, oblong-ovoid, 1-celled, up to 3.5 mm long, containing numerous seeds. Seeds reddish brown, suborbicular, 1 to 1.5 mm in diameter, pitted.

Desmodium pulchellum (L.) Benth.

[Syn: *Phyllodium pulchellum* (L.) Desv.]

Vernacular name(s): Birkapi (O).

Distribution: B-4.

Description: Shrubs, 0.5-2 m tall. Terminal leaflet blade ovate, elliptic, or obovate, 6-10 × 2.5-4.5 cm, ca. 2 × as long as lateral leaflets. Flowers 5 or 6, enclosed by pair of leaflike bracts. Corolla white or pale yellow. Legume ca. 6 × 2.5 mm, slightly constricted on both sutures, usually 2-jointed; articles glabrous or sparsely pubescent and ciliate. Seed broadly elliptic or nearly orbicular.



Dracaena marginata Lam. 'tricolor'
[Asparagaceae]

Vernacular name(s): Dracena (O);
Dracena (H); Three-colour Madagascar
dragon tree (E).

Distribution: B-2.

Description: This fine-textured,
evergreen shrub is distinguished by its
relatively thin and irregular stems that
are topped by a rosette of ribbon-like
leaves. Stems 15 feet, covered with
distinctive foliar scars. Leaves
variegated, leathery, purple stripe along
their margins. Flowers in panicles, white
and red above the leaves, inconspicuous.
Berries small, golden, insignificant.



Dracaena reflexa Lam.

[Asparagaceae]

Vernacular name(s): Dracena (O, H & E).

Distribution: B-2.

Description: Slow-growing, upright,
tending to an oval shape with an open
crown. Leaves simple, lanceolate, spirally
arranged, grow in tight whorls, dark green.
Flowers small, clustered, white, extremely
fragrant.

Dracaena sanderiana Mast.

[Agavace]

Vernacular name(s): Dracena (O, H & E)

Distribution: B-2.

Description: Plants shrubby, 1-5 m tall.
Leaves spaced along distal part of
branches, distinctly petiolate; leaf blade
narrowly elliptic-lanceolate, 10-15 × 2-3
cm. Inflorescence terminal, branched,
7-10 cm; rachis glabrous. Flowers
solitary, rarely paired; pedicel ca. 10
mm, articulate above middle. Perianth
greenish, sometimes flushed red or
purple, 2-2.3 cm.



Duranta repens L.

[Verbenaceae]

Vernacular name(s): Bilati Kanta (O);
Bilayati kanta (H); Sky flower (E).

Distribution: B-2.

Description: An unarmed spinous shrub, 5-10 ft., spines in or above the leaf-axils. Leaves opposite, shortly petioled, oblong, elliptic or ovate, entire or serrate above the middle. Racemes terminal and axillary, simple or paniced, many-flowered, lax, erect or drooping, 2-6 in long. Flowers blue, bracteate, on short pubescent pedicels. Drupe globose.



Dypsis lutescens (H.Wendl.) Beentje & J. Dransf.

[Arecaceae]

Vernacular name(s): Golden Cane Palm (E).

Distribution: B-2.

Description: Bamboo-like stems and yellow leaf-ribs. Foliage evergreen, of fine texture and yellow-green in colour. Pinnate, 6 to 8, pale green leaves per stem, 80 to 100 leaflets, to 8 feet long. Yellow male and female flowers on the same inflorescence. Flower stalk coming from below the leaves. Fruit yellow to purple, oval.

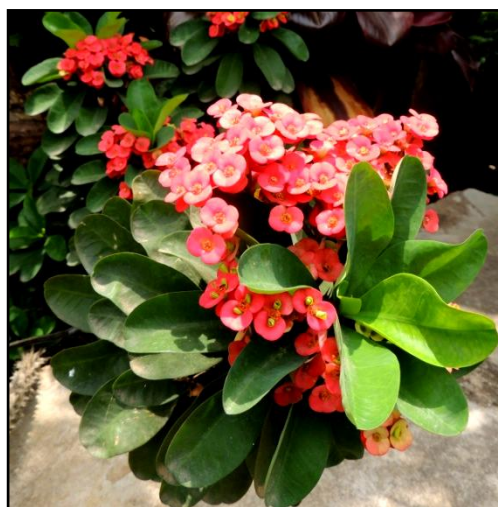
Euphorbia milii Des Moul

[Euphorbiaceae]

Vernacular name(s): Christ plant (E).

Distribution: B-2.

Description: Succulent climbing shrub. Stem densely spiny; spines straight, slender, upto 3 cm long. Leaves obovate, broad, mainly on new growth. Flowers small, subtended by a pair of conspicuous petal-like bracts, variably red, pink or white. Sap moderately poisonous, and causes irritation on contact with skin or eyes.



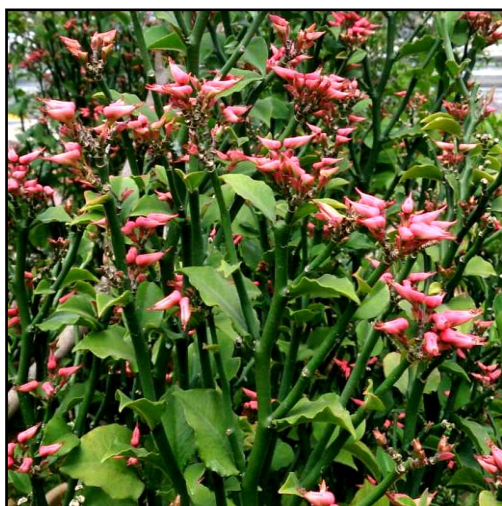
Euphorbia pulcherrima Willd. ex Klotz.
[Euphorbiaceae]

[**Syn:** *Poinsettia pulcherrima* (Willd. ex Klotzsch) Graham]

Vernacular name(s): Lalpatra (O); Lalpata (H); Poinsettia (E).

Distribution: B-2.

Description: A more or less erect softly woody plant upto 2 m tall. Leaves alternate, long-petiolate, blades elliptic-ovate to dentate-panduriform, 7-14 (-20) × 3-7 (-10) cm, blades elliptic-oblancheolate. Cyathia aggregated together in dense terminal position, 7-9 × 6-8 mm. Fruit rounded-trilobate, ca. 1.5 x 1.5 - 2 cm. Seeds ovoid, 10 x 8-9 mm, ± smooth, pale grey.



Euphorbia tithymiloides L.

[Euphorbiaceae]

[**Syn:** *Pedilanthus tithymaloides* (L.) Poit.]

Vernacular name(s): Kanchana sijhu (O);

Distribution: B-2.

Description: Erect shrubs 2 m tall. Leaves distichous; leaf blade ovate or long ovate, 3.5-8 × 2.5-5 cm, fleshy. Cyathia in cymes clustered on leafless stems, terminal or axillary at upper part, each one with many male flowers and 1 female flower; involucre shoe-shaped, deep-red or purple-red. Male flower: pedicels slender, 2.5-4 mm, glabrous. Female flower inserted at center of involucre, oblique, exerted from involucre; pedicels 6-8 mm, glabrous.



Fargesia stricta Hsueh & C.M. Hui.

[Poaceae]

Vernacular name(s): Chhata baunsa (O); Umbrella bamboo (E).

Distribution: B-2.

Description: Culms 5-8 m, 2-3 cm in diam.; internodes terete, 30-37 cm, obscurely ridged, glabrous. Branches 3-5(-8) per node, unequal. Culm sheaths oblong, leathery, brown setose, margins not ciliate; ligule 1-3 mm, shortly ciliate; blade reflexed, linear-lanceolate, narrower than mouth of sheath. Leaves 3 or 4(or 5) per ultimate branch; blade lanceolate, 5-10 × 0.5-0.8 cm.

Flacourtia jangomas (Lour.) Racusch.
[Flacourtiaceae]

(Syn : *Flacourtia cataphracta* Roxb. ex Willd.)

Vernacular name(s): Baincha (O); Paniala (H); Indian Plum (E).

Distribution: B-4.

Description: Small deciduous tree. Leaves ovate-oblong. Racemes glabrous, few flowered flowers 2.5-3.7 mm across. Sepals 4(-5), ovate, disc fleshy. Male flowers: filament glabrous. Female flowers : ovary flask-shaped. Fruit red or purple, subglobose. Seeds 4-5.



Gardenia carinata Wall.ex Roxb.
[Rubiaceae]

Vernacular name(s): Swarna sugandharaj (O); Golden Gardenia (E).

Distribution: B-1.

Description: A tree upto 15 m tall. Leaves are elliptic to obovate with entire leaf margin and prominent venation. Fragrant flowers shaped like pinwheels; initially white, but turn yellow and then orange over the course of 2-3 days. Calyx tube is five-lobed, middle marked with 5 strong keels. Fruit is rounded about 5 distinct, evenly spaced ridges that run longitudinally, yellowish green and later turn brown-black when dry.

Gardenia jasminoides Ellis
[Rubiaceae]

Vernacular name(s): Sugandhraj (O); Gandhraj (H); Cape jasmine (E).

Distribution: B-2.

Description: A woody shrub with attractive foliage and fragrant, conspicuous flowers, able to grow to 0.5 - 2 m tall and with a spread of 0.5 - 2 m wide. Leaf 10 cm long. The solitary flowers are fragrant and white, 8 cm wide. Fruits small, oval fruit which turns from green to orange when ripen.



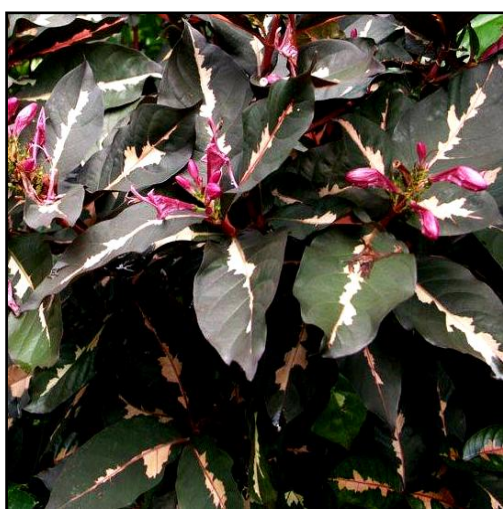
Glycosmis pentaphylla (Retz.) DC.
[Rutaceae]

(Syn: *Glycosmis arborea* (Roxb.) DC.

Vernacular name(s): Chauladhua (O);
Ban Nimbu (H); Ash sheora (E).

Distribution: B-1, B-4.

Description: Small erect shrubs. Leaves 3-7-foliolate; leaflets subopposite, elliptic-lanceolate, entire to minutely crenulate-serrate on the margins. Flowers in terminal or axillary, spiciform panicles. Sepals ovate-acute. Petals 5(4), white, obovate, surface gland-dotted. Berry 1-1.2 cm diam, ovoid, white turning pink 1-2 seeded.



Graptophyllum pictum (L.) Griff.

[Acanthaceae]

(Syn: *Graptophyllum hortense* Nees)

Vernacular name(s): Chitrapatri (O);
Caricature Plant (E).

Distribution: B-2.

Description: Herbaceous shrub, red. Opposite leaves are elliptic with entire or wavy leaf margin (15 cm long). Leaves are mostly green with mixed patches of peach, cream and pink along the midvein. Hairless, glossy leaves have an uneven leaf texture. Flowers, reddish purple or pinkish purple; tubular and located near the stem tips in clusters, 4 cm long, 1 cm wide.

Hamelia patens Jacq.

[Rubiaceae]

(Syn: *Duhamelia odorata* Willd. ex Schult.

Vernacular name(s): Agni gulma (O);
Fire bush (E).

Distribution: B-2.

Description: Evergreen shrub or small tree, upto 3 m. Leaves elliptic, oblong or oblong-ovate. Inflorescence terminal, compound scorpioid cymes. Flowers 2-3 cm long, scarlet. Corolla tubular, 1.5 cm long, 5-ridged, shortly 5-lobed. Corolla-tube, ca. 3 mm long. Fruit ellipsoid-oblong or globose, berry, ca. 8 mm long, red in colour. Seeds brown or yellowish brown.



Hibiscus mutabilis L.

[Malvaceae]

Vernacular name(s): Sthalapadma (O); Sthala kamal (H); Changeable Rose (E).

Distribution: B-1.

Description: Large shrubs or small tree upto 3 m. Leaves alternate, long-petioled, palmatilobed, margin toothed. Flowers large, solitary in the axils of the leaves, white or pink turning red. Epicalyx segments 8-12, linear-lanceolate. Calyx connate up to middle. Corolla 7.5-10 cm across; petals 5 or multiple of 5, sub-orbicular. Capsule subglobose, hairy.



Hibiscus rosa-sinensis L. cv albo-lanceinatus

[Malvaceae]

Vernacular name(s): Patala Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1, B-2.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate, stipulate, linear, petiolate. Flowers axillary, solitary, erect or subpendulous, single or double. Epicalyx segments 6-9, linear or linear-lanceolate. Corolla 4-9 cm across, pinkish red stripe from the center towards middle. Capsule ca. 2 cm long, glabrous, ovoid.

Hibiscus rosa-sinensis L. cv andersonii

[Malvaceae]

Vernacular name(s): Rakta Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1, B-2.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate, stipulate, linear, petiolate. Flowers axillary, solitary, erect or subpendulous, single or double pedicel 1-8 cm long, articulate near the top. Epicalyx segments 6-9, linear or linear-lanceolate. Corolla 4-9 cm across, red. Capsule ca. 2 cm long, glabrous, ovoid.



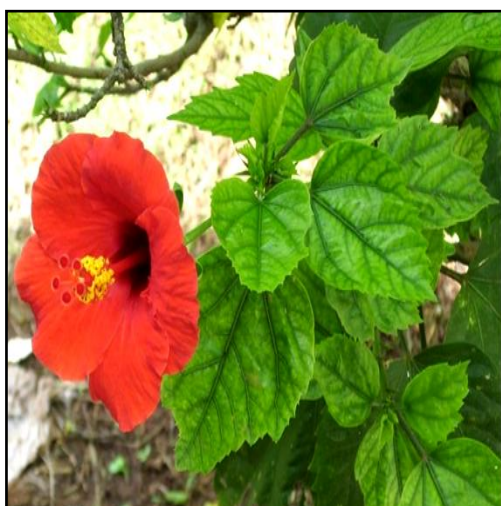
Hibiscus rosa-sinensis L. cv apricot-cookie

[Malvaceae]

Vernacular name(s): Kamala Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary, erect or subpendulous, Epicalyx segments 6-9, linear or linear-lanceolate. Corolla 4-9 cm across, yellowish orange with red centre, and five whitish line arises from the red center. Capsule ca. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv brilliant red

[Malvaceae]

Vernacular name(s): Nali Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, broadly ovate, serrate-dentate. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, deep red, with dark reddish centre. Capsule ca. 2 cm long, glabrous, ovoid.

Hibiscus rosa-sinensis cv cooperi

[Malvaceae]

Vernacular name(s): Nail Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, variegated, white spot fully cover the leaf; serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, red, with or without dark centre. Capsule ca. 2 cm long, glabrous, ovoid.



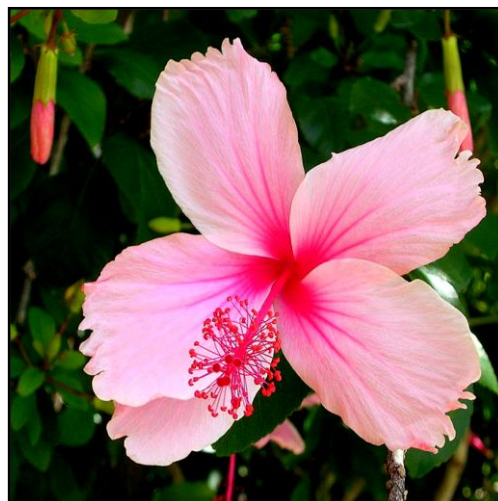
Hibiscus rosa-sinensis cv dainty pink

[Malvaceae]

Vernacular name(s): Pink Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1, B-2.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, pinkish with red dark centre. Capsule ca. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv dainty white

[Malvaceae]

Vernacular name(s): Dhala Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, yellowish green; serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, milky white; without dark centre. Capsule c. 2 cm long, glabrous, ovoid.

Hibiscus rosa-sinensis L. cv double pink

[Malvaceae]

Vernacular name(s): Guva patala Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, multiple of five, pink; with or without dark centre. Capsule ca. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv double dark red

[Malvaceae]

Vernacular name(s): Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1, B-2.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, multiple of five, doubly dark red. Capsule ca. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv double red
[Malvaceae]

Vernacular name(s): China Mandara (O); Gurhal (H); Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, multiple of five, doubly red. Capsule ca. 2 cm long, glabrous, ovoid.

Hibiscus rosa-sinensis L. cv madeline champion

[Malvaceae]

Vernacular name(s): Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, pinkish red, with red dark centre. Capsule c. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv mango dainty

[Malvaceae]

Vernacular name(s): Haladia Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1, B-2.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, lowly yellowish, with red dark centre. Capsule ca. 2 cm long, glabrous, ovoid.



Hibiscus rosa-sinensis L. cv president red

[Malvaceae]

Vernacular name(s): Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, deep red, with or without dark centre. Capsule ca. 2 cm long, glabrous, ovoid.

Hibiscus rosa-sinensis L. cv sylvia good man

[Malvaceae]

Vernacular name(s): Mandara (O); Gurhal (H); China Rose (E).

Distribution: B-1.

Description: A glabrate, 1-5 m tall shrub. Leaves 4-8 cm long, 2-5 cm broad, ovate to broadly ovate, serrate-dentate. Flowers axillary, solitary. Epicalyx segments 6-9, linear or linear-lanceolate. Calyx tubular-campanulate, triangular to lanceolate. Corolla 4-9 cm across, yellowish with red dark centre, red stripe upto mid of the petal. Capsule ca. 2 cm long, glabrous, ovoid.

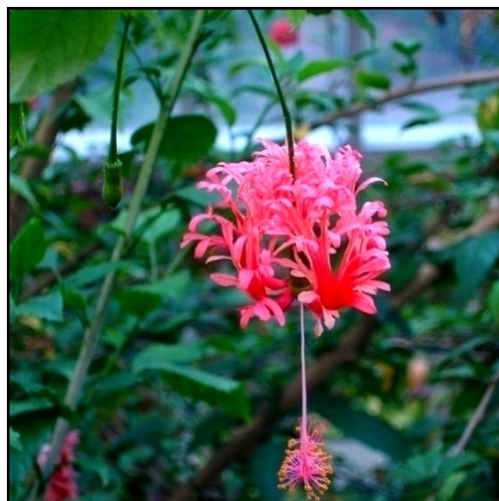


Hibiscus schizopetalus (Mast.) Hook. f.
[Malvaceae]

Vernacular name(s): Kuncha mandara (O);
Lanthan jaba (H); Coral hibiscus (E).

Distribution: B-1, B-2.

Description: Shrubs evergreen, erect, to 3 m tall. Leaf blade elliptic or oblong, margin dentate. Flowers solitary, axillary on upper branchlets, pendulous. Epicalyx lobes 5, lanceolate, ciliate. Calyx tubular, 5-lobed. Petals 5, red, deeply pinnatifid, strongly reflexed. Capsule oblong-cylindric.



Hypoestes phyllostachya Baker

[Acanthaceae]

(Syn: *Hypoestes sanguinolenta* Hook.)

Vernacular name(s): Bindu patri(O);
Polka dot plant(E).

Distribution: B-2.

Description: Herbs, 20-30 cm high. Leaves opposite, 2- 4.5 × 1-2.5 cm, lanceolate, elliptic ovate, acute, entire, variegated. Flowers axillary, sepals 5, pale white. Corolla white, tube narrow at the base, ca. 0.7 × 0.1 cm. Fruit a capsule, elongated, 0.3-0.4 × 0.1 cm, puberulous; seeds 4, glabrous.

Impatiens glandulifera Royle

[Balsaminaceae]

Vernacular name(s): Haragoura (O);
Himalyan balsam (E).

Distribution: B-2.

Description: Large herb, grows upto 1 to 2 m high. Stem soft green or red-tinged stem. Leaves lanceolate, long, sweet-smelling nectary glands present, when crushed smell like strong musty. Flowers pink, hooded shape.



***Ipomoea carnea* Jacq.**

[Convolvulaceae]

(Syn: *Ipomoea carnea* sensu Haines)

Vernacular name(s): Amari (O);
Behaya (H); Bush morning glory (E).

Distribution: B-1, B-4.

Description: Shrub; branches fistulose or solid with milky sap. Leaves ovate-oblong, glabrous or puberulose. Cymes several-flowered, axillary and terminal, minutely pubescent. Flowers purple, dark purple toward base, funnel shaped.



***Ixora coccinea* L.**

[Rubiaceae]

Vernacular name(s): Katharangani (O);
Rukmini (H); Ungle geranium (E).

Distribution: B-2.

Description: Bushy shrubs. Leaves opposite, elliptic to oblong, shortly acute at apex, round to slightly cordate at base, sessile, greenish on drying. Corymbs 5-8 cm across; peduncle and pedicels short. Berry 0.6-0.8 cm diam. Seeds 2, globose.

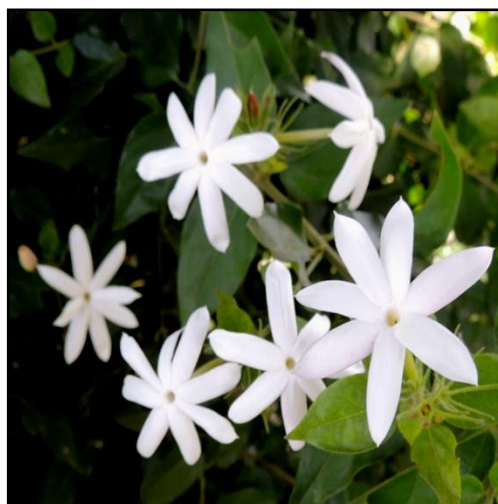
***Jasminum auriculatum* Vahl**

[Oleaceae]

Vernacular name(s): Jui (O); Juhi (H);
Needle flower Jasmine (E).

Distribution: B-2.

Description: A scandent, pubescent or velvety shrub with grey-pubescent branchlets. Leaves trifoliate with two lower leaflets, petioles very short. Flowers white, sweet scented, many in trichotomous paniculate corymbose cymes. Calyx-lobes 5, ovate. Corolla-tube 8-12 mm, lobes 5-7. Berry globose, black.



Jasminum sambac (L.) Ait.

[Oleaceae]

(Syn: *Nyctanthes sambac* L.)

Vernacular name(s): Malli (O);
Moghra (H); Arabian jasmine (E).

Distribution: B-2.

Description: Scandent shrub; branches pale, glabrous. Leaves broadly ovate, with tufts of hairs in the nerve-axils. Flowers white, in 3-5 flowered terminal cymes; bracts filiform. Berry globose, dark violet when mature. Seed globose.



Jatropha gossypifolia L.

[Euphorbiaceae]

(Syn: *Adenoropium elegans* Pohl.)

Vernacular name(s): Nali baigaba (O);
Peregrina(E).

Distribution: B-2.

Description: Erect shrub, 3 m tall, Leaf-blades 3-5-palmatifid or palmatipartite, lobes obovate, 3-5-nerved from the base, with 9-12 pairs of lateral nerves per lobe, Inflorescences leaf-opposed, paniculate, 8-18 cm long, with a clear peduncle 6-8 cm long; Male flowers: calyx-lobes elliptic-lanceolate, rounded, reddish-purple; Female flowers: calyx-lobes and petals twice as large as in the male flowers, Fruit rounded-trilobate, ca. 1 × 1 cm. Seeds compressed ovoid-ellipsoid, pale greyish-brown.

Jatropha integerrima Jacq.

[Euphorbiaceae]

(Syn: *Jatropha pandurifolia* Andr.)

Vernacular name(s): Patali baigaba (O);
Peregrina(E).

Distribution: B-2.

Description: Shrubs, to 2.5–5 m, monoecious. Leaves persistent, blade elliptic-ovate, obovate, lyrate, or panduriform, 7.5–15.3 × 2.9–12.5 cm. Inflorescences bisexual, terminal and subterminal, cymes. Staminate flowers: corolla bright red to scarlet or pink, rotate, petals distinct. Pistillate flowers: resembling staminate. Capsules ovoid, 1–1.3 × 0.7–1.1 cm. Seeds cream,



ellipsoidal.

Justicia adhatoda L.

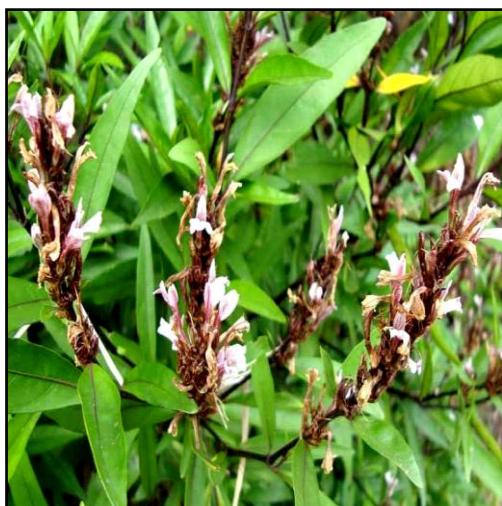
[Acanthaceae]

(Syn: *Adhatoda vasica* Nees)

Vernacular name(s): Basanga (O);
Arusha (H); Malabar nut (E).

Distribution: B-2.

Description: Shrub. Leaves large, elliptic-lanceolate, minutely pubescent. Flowers white, large, terminal and axillary, sometimes thyriform spikes; corolla bilipped. Capsule clavate-oblong, pubescent, with a long solid base. Seeds 1-2.



Justicia gendarussa Brum.f.

[Acanthaceae]

Vernacular name(s): Kukuradanti (O);
Nilinardondi (H); Water willow (E).

Distribution: B-2, B-4.

Description: Glabrous shrub; dark purple branches. Leaves glabrous, lanceolate. Spikes from the uppermost leaf-axils and forming terminal panicles. Flowers white, purple spotted, mostly in clusters on the axis. Capsule clavate.

Kopsia fruticosa (Ker-Gawl) A.DC.

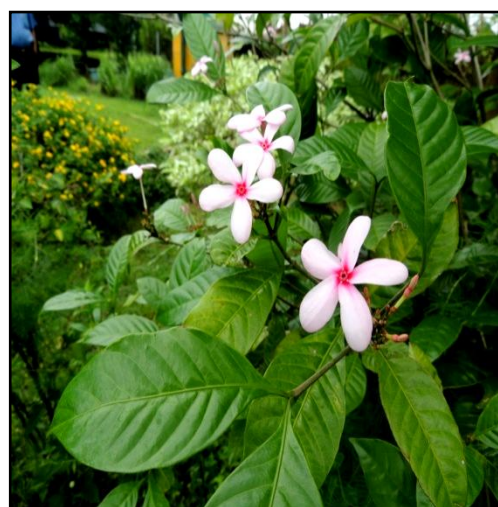
[Apocynaceae]

(Syn: *Cerbera fruticosa* Ker Gawl.)

Vernacular name(s): Patali tagara (O);
Pink Gardenia (E).

Distribution: B-2.

Description: Shrubs evergreen, to 4 m tall. Leaf blade narrowly elliptic or narrowly oblong, apex acute or obtusely caudate. Inflorescences few flowered; peduncle to 1 cm; bracteoles to 1.5 mm, pubescent. Pedicel 5-7 mm. Sepals ovoid, pubescent, apex obtuse. Corolla pink, tube 3-5 cm, throat pubescent. Drupe ellipsoid, usually 1-seeded.



Lagerstroemia indica L.

[Lythraceae]

Vernacular name(s): Chhena phula (O); Crape myrtle (E).

Distribution: B-2.

Description: Shrub, rarely arborescent, 2-3 (-6) m tall. Leaves variable, usually obovate, obtuse, 1-6.7 cm long, 6-35 mm broad. Panicles 6-15 cm long. Hypanthium 4-7 mm long, 7-10 mm broad, ± glabrous. Epicalyx lacking. Sepals 3.5-6 mm long, 2.5-5 mm broad, in fruit erect, herbaceous. Petals blade 1.6-2.5 cm long, 1.4-1.6 cm broad, claw 8-11 mm long. Capsule 10-12 mm in diameter.



Lantana camara L. var. *aculeata* (L.) Mold.

[Verbenaceae]

(**Syn:** *Lantana camara* sensu Haines)

Vernacular name(s): Naguari (O); Raimunia (H); Lantana (E).

Distribution: B-2.

Description: Straggling aromatic shrub; stems and branchlets conspicuously armed with recurved prickles. Leaves ovate-oblong, scabrid rugose above. Flowers usually white-pink or orange-yellow, in short capitate spikes. Drupe black, globose.

Lawsonia inermis L.

[Lythraceae]

Vernacular name(s): Manjuati (O); Mehendi (H); Henna (E).

Distribution: B-2.

Description: Tall shrub, glabrous and multi-branched, with spine-tipped branchlets. Leaves opposite, glabrous, sub-sessile, elliptical, lanceolate. Flowers have four sepals, a 2 mm calyx tube with 3 mm spread lobes; petals obvate. Fruits small, brownish capsules.



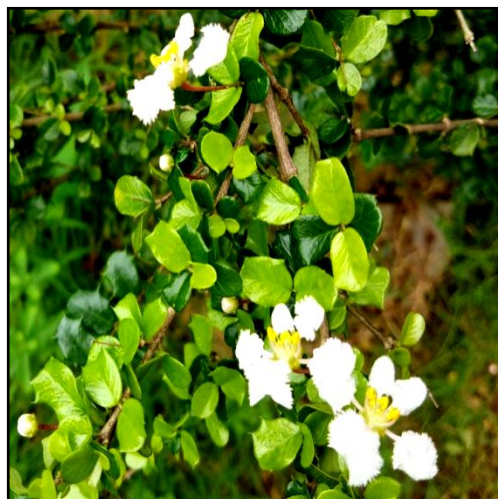
Malpighia coccigera L.

[Malpighiaceae]

Vernacular name(s): Miniature Holly (E).

Distribution: B-2.

Description: Dwarf Shrubs 1–3 m. A leaf blades ovate, larger blades 3–5 × 1.5–3 cm, apex obtuse, surfaces glabrous but leaf margin contains spine. Inflorescences 1.5–3(–3.5) cm, (3–)4–5(7)-flowered. Flowers: petals white or pink. Drupes 7–13 mm diam., spheroid, red.



Malvaviscus arboreus Cav.

[Malvaceae]

(Syn: *Hibiscus malvaviscus*)

Vernacular name(s): Lanka mandara (O); Maricha jaba (H); Chilli hibiscus (E).

Distribution: B-2.

Description: Shrubs ca. 1 m tall. Stipule filiform, leaf blade broadly cordate to ovatecordate, usually 3-lobed, base broadly cuneate to nearly rounded or cordate, margin crenate. Flowers solitary, axillary, pendulous, tube-shaped. Epicalyx lobes spatulate, connate at base. Calyx campanulate, lobes 5, Petals 5, scarlet-red. Ripe fruit bright red, usually 3- or 4-seeded.

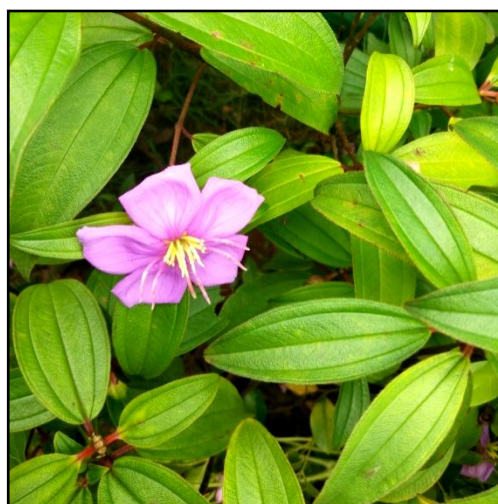
Melastoma malbathricum L.

[Melastomaceae]

Vernacular name(s): Gangoi (O); Shapti (H); Malbar melastom (E)

Distribution: B-2.

Description: Shrubs 0.5-1(-5) m tall, erect. leaf blade ovate, elliptic, or elliptic-lanceolate, 4-14 × 1.7-3.5(-6) cm, stiffly papery. Inflorescences subcapitate corymbose, terminal, 3-7-flowered, with 2 leaflike bracts at base. Pedicellate. bracteolate Calyx lobes lanceolate to ovate-lanceolate, Petals reddish purple, 2-3(-4) cm, margin only ciliate, apex rounded. Fruit urceolate-globular, 6-15 × 6-12 mm, succulent, densely squamose strigose.



Mussaenda frondosa L.

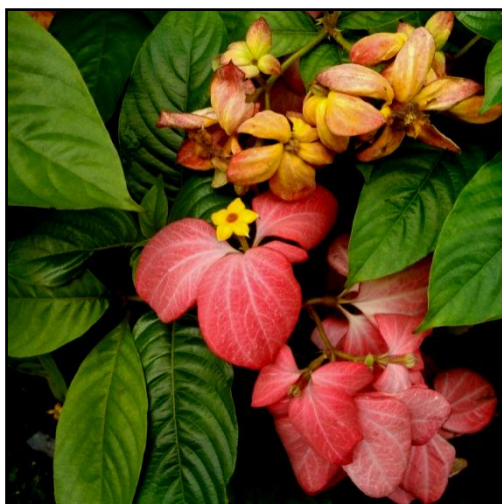
[Rubiaceae]

[Syn: *Gardenia frondosa* (L.) Lam.]

Vernacular name(s): Kagaja phula (O);
Flag Bush (E).

Distribution: B-2.

Description: Climbing shrubs. Leaves opposite; petiole 4-10 mm, leathery, elliptic-oblong, ovate, or oblanceolate, 8-15 × 3-8 cm, base acute, obtuse, or rounded. Inflorescences congested-cymose 4-8 × 8-20 cm. Flowers pedicellate; Corolla salverform, tube 22-25 mm; lobes ovate, 6-7 mm, acuminate. Berry ovoid or ellipsoid, ca. 10 × 7 mm, strigose to glabrescent.



Mussaenda philippica A.Rich.

[Rubiaceae]

[Syn: *Mussaenda philippica* f. *aurorae* (Sulit) Jayaw.]

Vernacular name(s): Kagaji phula (O);
Tropical Dogwood (E).

Distribution: B-2.

Description: Shrubs or small trees to c. 4 m tall, not scandent. Inflorescences much-branched, many-flowered. Flowers 5-merous. Calyx lobes of all flowers of all inflorescences enlarged, leaf-like, white or various shades of pink. Corolla yellow, with an orange eye in the centre. Fruits usually not developed.

Nerium oleander L.

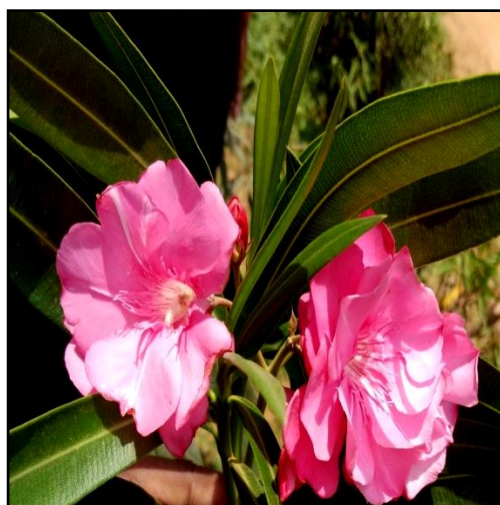
[Apocynaceae]

(Syn: *Nerium indicum* L.)

Vernacular name(s): Karabira (O);
Kaner (H); Oleander (E).

Distribution: B-2.

Description: Perennial shrub, erect, grow upto 3 meters its short branches. Leaves dark, dusty green, leathery, narrow, grow in whorls. Flowers beautiful, fragrant, white, pink or yellow, in bunches, at the tip of branchlets. Fruit long, narrow, capsule.



Ocimum basilicum L.

[Lamiaceae]

Vernacular name(s): Kapur kanti (O); Kali tulsi (H); Sweet basil (E).

Distribution: B-2.

Description: Aromatic, pubescent shrub. Leaves ovate, glabrous or glabrescent, glandular. Inflorescence racemes, verticillasters, many-flowered; petiolated bracts, lanceolate-ovate. Flower white-bluish-purple or pinkish, glabrous or hispid. Nutlets oblong or ellipsoid.



Ocimum gratissimum L.

[Lamiaceae]

Vernacular name(s): Rama tulasi (O); Ram tulsi (H); Wild Basil (E).

Distribution: B-2.

Description: Perennial shrub, woody at base. Stems 1-3 m long. Leaves ovate, 5-13 cm long, 3-9 cm wide, hairy, toothed margin. Flowers greenish white to greenish yellow, 4-7 mm long. Nutlets spherical, 1.5-2 mm wide.

Ocimum kilimandscharicum Guerke

[Lamiaceae]

Vernacular name(s): Karpura tulasi (O); Kapur tulsi (H); Camphor Basil (E).

Distribution: B-2.

Description: Stems erect, 1-2 m. Leaf blade ovate. Verticillasters 6-8-flowered, in decussate terminal thyrses or panicles 5-6 cm. Calyx tubular-campanulate, spreading hirsute outside, densely glandular. Corolla tube ca. 2 mm, creamy white flower, glabrous. Nutlets ovoid, glabrous.



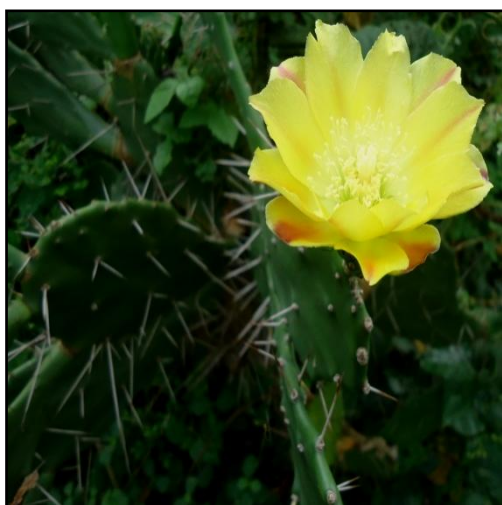
Ocimum sanctum L.

[Lamiaceae]

Vernacular name(s): Tulasi (O);
Tulsi (H); Holy basil (E).

Distribution: B-1, B-2.

Description: Aromatic shrub. Leaves green or purple, simple, petiolated, slightly toothed margin, strongly scented. Flowers purplish, placed in close whorls on elongate racemes.



Opuntia stricta (Haw.) Haw. var. dillenii
(Ker-Gawl.) Benson

[Cactaceae]

[Syn: *Opuntia dillenii* (Ker-Gawl.) Haw]

Vernacular name(s): Nagphani (O & H);
Prickly pear (E).

Distribution: B-2.

Description: Large straggling fleshy shrub; branches often drooping and large flat limbs. Young leaves fleshy, subulate, subspinulose; areoles with 5-6 pale yellow spines and numerous bristles. Flowers entirely pale yellow, funnel shaped.

Pereskia bleo (Kunth) DC.

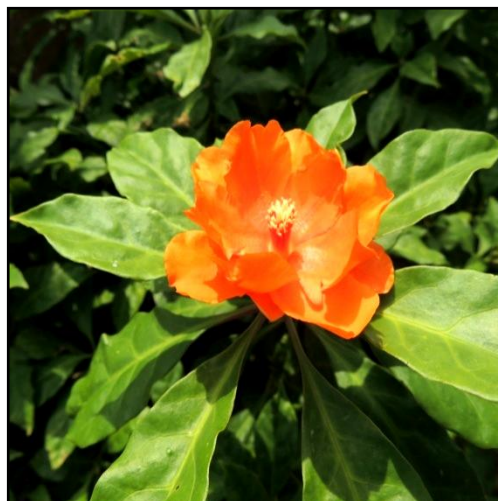
[Cactaceae]

[Syn: *Rhodocactus bleo* (Kunth) F.M. Knuth]

Vernacular name(s): Arunima (O);
Rose Cactus(E).

Distribution: B-2.

Description: Shrubs erect, 2-3 m. areoles to 12 mm diam. Leaves elliptic-oblong, 5-25 × 3-7 cm, thick, glossy, velvety. Spines 1-6 per areole, straight. Flowers 10-30 in dense cymose-paniculate, 1.5-3.2 × 3-7 cm; perianth orange. Fruits reddish green, pyriform or tur-binate, 50-100 × 30-70 mm. Seeds obovoid-ellipsoid, 3-5 × 4-5 mm, glossy.



Phoenix loureiroi Kunth

[Arecaceae]

(**Syn:** *Phoenix pusilla* Loureiro)

Vernacular name(s): Chhota khajuri(O); Dwarf date palm (E).

Distribution: B-2.

Description: shrub 1-6 m tall, 20-40 cm in diam. Leaves to 2 m; sheath and petiole to 40 cm; rachis 1-2 m; acanthophylls ca. 15 per side of rachis; pinnae 40-130 per side of rachis. Male inflorescences erect, to 65 cm, with to 30 rachillae, these ca. 10 cm; female inflorescences erect, becoming arched, to 2 m, with to 40 rachillae, these to 40 cm. Fruits black, blue-black, or dark purple, ovoid to obovoid, to 1.8 × 0.9 cm.



Phyllanthus myrtifolius (Wight) Müller

[Euphorbiaceae]

(**Syn:** *Macraea myrtifolia* Wt.)

Vernacular name(s): Lanji Aenla (O); Mousetail Plant (E).

Distribution: B-2.

Description: Shrubs ca. 0.5(-3) m tall. Leaf blade oblanceolate, (10-)12-16(-25) × (2-) 3.5- 4.5(-8) mm, leathery, glabrous. Inflorescence an axillary several-flowered fascicle. Male flowers ca. 3 mm in diam.; sepals 5, oblong; disk glands 5, orbicular. Female flowers: pedicel 6-8 mm; sepals 6, 0.8-1 × 0.3-0.5 mm; disk cup-shaped. Capsules oblate, ca. 2 × 3 mm, glabrous, valves crustaceous. Seed 3-angled, 1.7-2 mm, brown, reticulate-stripped.

Plumbago auriculata Lam.

[Plumbaginaceae]

(Syn: *Plumbago capensis* Thunb.)

Vernacular name(s): Shyama chitaparu (O); Cape leadwort (E).

Distribution: B-2.

Description: Plants evergreen shrubs, 3 m. Leaves usually sessile, blade elliptic, oblanceolate, or spatulate, 2.5-9 × 0.5-2.5 cm. Inflorescences 2.5-3(-5) cm; Flowers capitate. Corolla pale blue, 37-53 mm, tube 28-40 mm, lobes 10-16 × 6-15 mm. Capsules 8 mm. Seeds brown, 7 mm.



Polyscias filicifolia [C. Moore ex E. Fourn.] L. H. Bailey]

[Araliaceae]

Vernacular name(s): Patradanti (O); Fern-leaf aralia (E).

Distribution: B-2.

Description: Shrubs to 3(-4) m tall. Leaves 3-5-pinnate; sometimes variegated, usually lanceolate, (1-)2-18 × 0.2-5 cm, papery. Inflorescence terminal, erect, a panicle of umbels. Fruit laterally compressed or trigonous orbicular to ovate-orbicular, 4-5 × 4.5-6 mm, base rounded.



Rauvolfia serpentina (L.) Benth. ex Kurz
[Apocynaceae]

Vernacular name(s): Patala garuda (O); Sarpagandha (H); Indian snakeroot (E).

Distribution: B-2.

Description: Shrubs to 1 m tall, erect, glabrous. Leaves grouped near stem apex, in whorls of 3-5; petiole 1-1.5 cm; leaf blade narrowly elliptic or obovate, membranous, 7-17 × 2-9 cm, base cuneate, apex acuminate or rarely obtuse; lateral veins 7-15 pairs. Cymes congested; peduncle 5-13 cm, red or reddish. Pedicel and calyx red or reddish. Corolla white, tube cylindrical, 1-1.8 cm. Drupes ellipsoid, ca. 8 mm, connate for half their length.

Rauvolfia tetraphylla L.

[Apocynaceae]

Vernacular name(s): Patala garuda (O); Sarpagandha (H); Indian snakeroot (E).

Distribution: B-2.

Description: Shrubs to 2 m tall. Leaves in whorls of 3-5; petiole 2-5 mm; leaf blade ovate, narrowly ovate, or oblong, 1-15 × 0.8-4 cm, membranous. Corolla white, tube urceolate, 2-3 mm, long hairy inside distal half; lobes ovate or suborbicular. Drupes subglobose, 5-10 mm in diam., glabrous, connate. Seeds 2.



Rhapis excelsa (Thunb.) A. Henry

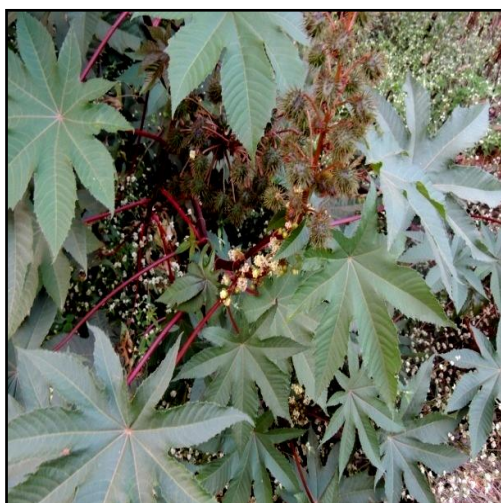
[Arecaeae]

(**Syn:** *Chamaerops excelsa* Thunberg in Murray)

Vernacular name(s): Broad leaf lady palm (E).

Distribution: B-2.

Description: Stems clustered, rhizomatous, to 3 m tall, covered with persistent, fibrous leaf sheaths. Leaf sheaths with coarse, black fibers producing a square mesh. Inflorescences borne among leaves, branched to 2 or 3 orders; bracts tubular, sheathing; rachis to 26 cm; rachillae to 11 cm, glabrous. Male flowers to 6 mm. Fruits developing from 1 carpel, yellow, globose to ellipsoid, to 1 × 0.8 cm.



Ricinus communis L.

[Euphorbiaceae]

Vernacular name(s): Jada/gaba (O); Arandi (H); Castor bean (E).

Distribution: B-1, B-2, B-3, B-4.

Description: An erect, single-stemmed or much-branched shrub upto 5 m. Petioles 5-20 cm long. Leaf-blades commonly 7-9-lobed. Inflorescence 10-25 cm long. Male flowers; pedicels c. 1 cm long; calyx-lobes elliptic-ovate, acute, yellowish-green; anthers pale yellow. Female flowers: pedicels 3-5 mm. long, extending to 2 cm or more in fruit; sepals lanceolate. Fruit trilobate, smooth. Seed shiny, greyish, caruncle depressed-conic.

Rosa alba L.

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaves deciduous, leaflets 5-7, pale green or greyish-green, hairy beneath, usually simply serrate. Inflorescences usually few-flowered. Flowers usually double, rarely simple, white or pink. Sepals with lateral lobes, deciduous. Pedicels covered with stalked glands. Fruit often undeveloped or with partly developed achenes.



Rosa centifolia L.

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaves including petiole 4-11 cm; stipules narrow, mostly adnate to petiole; leaflets 3, rarely 5, ovate-lanceolate. Flowers solitary or several in corymb, rarely in corymb-panicle. Hypanthium ovoid, glabrous. Sepals 5, lanceolate, entire. Petals 5, pink or white, obovate, base cuneate, apex emarginate. Hip purple-brown, ovoid, with persistent sepals.



Rosa chinensis Jacquin

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaves including petiole 5-11 cm; stipules mostly adnate to petiole; leaflets 3-5, rarely 7, broadly ovate or ovate-oblong. Flowers 4 or 5 and fasciculate, rarely solitary, slightly fragrant or not, 4-5 cm in diam. Sepals 5, deciduous, ovate. Petals 5, semi-double or double, red, pink, white, or purple. Hip red, ovoid or pyriform, glabrous.

Rosa damascena Miller

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaflets glabrous or very sparsely hairy above, paler, softly hairy beneath. Flowers 3-5 or more, pink, rarely white, double, usually smelling. Pedicels rather long, covered with stalked glands. Hypanthium usually covered with stalked glands. Fruit globose or ovoid, often undeveloped.



Rosa fortuneana Lindley

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaves including petiole 17-25 cm; stipules mostly adnate to petiole; leaflets usually 5, rarely 7, often 3 on leaves near corymb, elliptic. Flowers numerous, in compound corymbs, 3-4 cm in diam. Sepals 5, reflexed, deciduous, lanceolate. Petals 5, white, obovate, base cuneate, apex erose. Hip purple-brown, subglobose or ovoid.



Rosa gallica L. var. **complicata**

[Rosaceae]

Vernacular name(s): Golapa (O); Gulab (H); Rose (E).

Distribution: B-2.

Description: Leaves stipulate, surfaces pubescent; leaflets 5(-7), margins shallowly 1(-2)-dentate-crenate, apex acute to acuminate. Inflorescences 1-3 (-8)-flowered; hypanthium 5-7 × 3-5(-7) mm; sepal erect or spreading; petals 27-35 × 20-30 mm. Achenes 3, 5 × 4-5 mm.

Rosa gallica L. var. officinalis

[Rosaceae]

Vernacular name(s): Golapa (O);
Gulab (H); Rose (E).

Distribution: B-2.

Description: Compact, bushy, rounded habit. Flowers are small, 3" across with 4-6 petals, golden yellow stamens; fragrance some what low than var. complicata.



Rosa indica L.

[Rosaceae]

Vernacular name(s): Golapa (O);
Gulab (H); Rose (E).

Distribution: B-2.

Description: Woody perennial flowering plant. Leaves alternate, pinnate, with (3-) 5-9 (-13) leaflets, basal stipules; leaflets with serrated margin, often few small prickles on the underside of the stem. Fruit aggregate berry-like.



Rosa odorata (Andr.) Sweet var. odorata
Pink

[Rosaceae]

Vernacular name(s): Golapa (O);
Gulab (H); Rose (E).

Distribution: B-2.

Description: Shrubs evergreen or semi-evergreen, climbing or scrambling. Leaves including petiole 5-10 cm. Flowers solitary, or 2 or 3 and fasciculate, very fragrant, 3-10 cm in diam. Sepals 5, lanceolate. Petals 5, semi-double or double, white or tinged with pink, yellow, or orange, fragrant. Hip red, depressed-globose, rarely pyriform, glabrous.

Sauropus androgynus (L.) Merr.

[Euphorbiaceae]

(Syn: *Clutia androgyna* L.)

Vernacular name(s): Multi vitamin plant (E).

Distribution: B-2.

Description: Shrubs 1-3 m tall, erect. Leaf blade ovate-lanceolate, oblong-lanceolate, or lanceolate, 3-10 × 1.5-3.5 cm. Inflorescence axillary, 1- or 2-flowered, or several male and female per cluster. Male flowers: pedicels slender, 5-7.5 mm. Female flowers usually solitary, axillary. Capsule white, depressed globose or globose, ca. 1.2 × 1.7 cm, thinly crustaceous. Seeds black, triquetrous, ca. 7 × 5 mm.



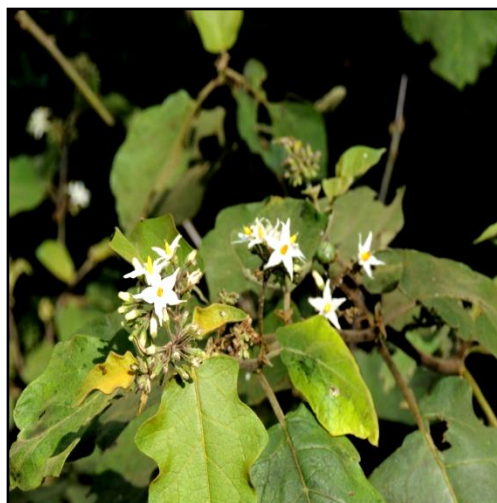
Solanum torvum Sw.

[Solanaceae]

Vernacular name(s): Denga bheji (O); Bhankteiya (H); Turkey berry (E).

Distribution: B-2, B-2.

Description: Tomentose shrub, 1-15 m tall, branches prickly. Leaves ovate or ovate-oblong, 6-15 x 3-9 cm, sinuately lobed, acuminate, without prickles, stellate tomentose beneath, petiole 2-3 cm long. Flowers white, 0.9-1.1 cm long, in many flowered corymbose cymes. Calyx unarmed. Corolla 9-12 mm long. Berry yellow.



Streblus taxoides (Heyne ex Roth) Kurz

[Moraceae]

(Syn: *Streblus microphyllus* Kurz)

Vernacular name(s): Jhumpuri (O);

Distribution: B-2.

Description: Shrubs 2-3 m tall; dioecious. Leaf blades elliptic to oblong-lanceolate, 2-8 × 1-3.5 cm, leathery. Male inflorescences axillary, sessile, capitate to shortly racemose; involucre bracts several whorled, 2.5-3.5 mm, membranous, abaxially pubescent. Female inflorescences 1-flowered; bracts 2. Drupes globose, 4-5 mm in diam.



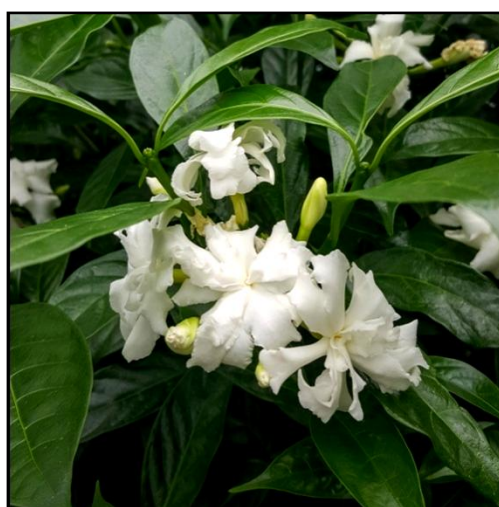
Tabernaemontana divericata (L.) R.Br.
ex Roem. & Schult. cv. **Plena**

[Apocynaceae]

Vernacular name(s): Tarata (O);
Chandni (H); Crape jasmine (E).

Distribution: B-2.

Description: Shrub, grows to a height of 6 ft. Stem thin, crooked, exude a milky latex when broken. Leaves large shiny, deep green and are 6 or more inches in length and about 2 inches in width. Flowers are like waxy blossoms, white, five-petaled pinwheels that borne in small clusters on the stem tips.



Tecoma stans (L.) Kunth.

[Bignoniaceae]

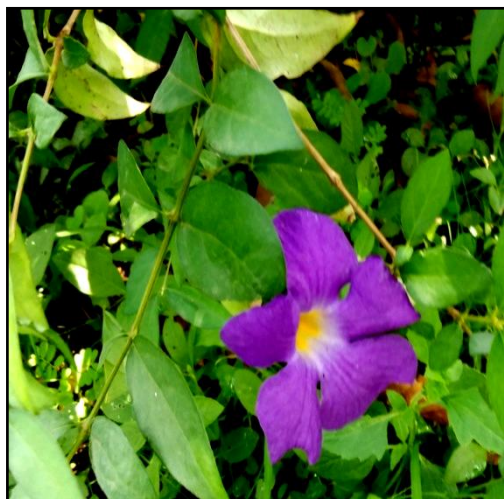
(Syn : *Bignonia stans* L.)

Vernacular name(s): Ghata puspa (O);
Piliya (H); Yellow Trumpet bush (E).

Distribution: B-1, B-2.

Description: Shrub upto 2.5 m tall, glabrous. Leaves opposite, pinnate, with 3-7 leaflets; leaflets elliptic to elliptic-ovate. Flowers in short terminal \pm erect panicles, bright yellow, fragrant. Calyx tubular-campanulate, \pm 4.5 mm long; Corolla tube 32-33 mm long, abruptly contracted at the base, lobes subequal. Capsule 12-16 x 0.7-0.8 cm. Seeds orbicular-compressed, 5 x 6-6.5 mm (wing 16-18 mm broad).





Thunbergia erecta (Benth.) Anderson
[Acanthaceae]

Vernacular name(s): King's Mantle (E).

Distribution: B-1, B-2.

Description: A glabrous shrub, upright, upto 1.25 m tall. Leaves elliptic-ovate to obovate, 3-8 x 2-4 cm, basally rounded, distantly serrate, acute, apiculate. Flowers purple-blue to dark blue, upto ca. 6 cm long, usually solitary axillary. Calyx teeth ca. 15, subulate, glandular hairy. Corolla tube ± curved yellowish-white or white, glandular hairy outside, lobes subequal, ca. 1.5 cm long, obtuse.

Vitex negundo L.

[Verbenaceae]

Vernacular name(s): Begunia (O); Nishinda (H); Chaste tree (E).

Distribution: B-2.

Description: Shrub. Leaves 3-5-foliolate; lanceolate or narrowly lanceolate leaflets, glabrescent or puberulous above, finely white-tomentose beneath. Flowers bluish purple or white, in oblong panicles. Drupe globose.



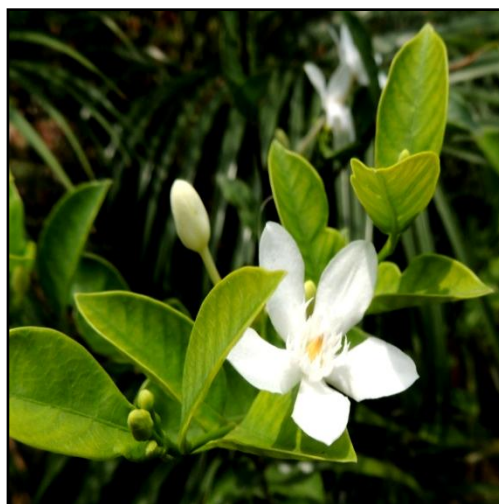
Wrightia antidysentrica (L.) R.Br.

[Apocynaceae]

Vernacular name(s): Arctic Snow (E).

Distribution: B-2.

Description: Bushy shrub, upto 1.5 m tall. Leaves green, ovate to elliptic in shape, opposite arrangement, about 2.5 - 6 cm long and 1.5 - 2.5 cm wide. Flowers white fragrant 5-petal, yellow centre, about 2.5 cm wide, corolla tube very slender and about 2 - 2.5 cm long. Fruit is a pod-liked follicle.





Ziziphus oenoplia (Linnaeus) Miller
[Rhamnaceae]

(Syn: *Rhamnus oenoplia* L.)

Vernacular name(s): Bhuin barakoli (O);
Makkay (H); Jackal Jujube (E).

Distribution: B-4.

Description: Shrubs erect or scandent, 3-4 m; spinose. Leaf blade ovate-oblong or ovate-lanceolate, 3-8 × 2-4 cm, papery, margin inconspicuously crenate. Flowers greenish yellow, few to 10 in axillary shortly pedunculate cymes. Petals spatulate, clawed, enfolding. Drupe black, shiny, globose or obovoid-globose, small, 5-7 × 5-6 mm, base with fruiting pedicel 3-4 mm, pilose; endocarp cartilaginous, ca. 2 mm; stone 1- or 2-seeded. Seeds shiny, globose.

* * *

HERBS

Abelmoschus esculentus (L.) Moench
[Malvaceae]

(Syn: *Hibiscus esculentus* L.)

Vernacular name(s): Bhendi (O);
Bhindi (H); Lady's finger (E).

Distribution: B-1, B-2.

Description: Erect, annual herb, 0.5-2 m; stem thick, often fistular, rough by scattered short, stiff simple hairs. Leaves orbicular, 5-25 cm diam, 5-7-lobed to partite or variously dissected, cordate, coarsely serrate to toothed lobes, at base 5-7-nerved. Flowers 5-10 cm diam. Epicalyx segments 7-10. Petals obovate, 2-3 cm long. Capsule long fusiform. Seeds grey or dark green, globous.



Abelmoschus manihot (L.) Medic subsp.
tetraphyllus

[Malvaceae]

(Syn: *Hibiscus tetraphyllus* Roxb. ex Horn.)

Vernacular name(s): Bana Bhendi (O);
Junglibhindi (H); Manihot-mallow (E).

Distribution: B-4.

Description: Herb; stem densely covered with prickly hairs. Leaves orbicular to ovate, 3-7 lobed, coarsely dentate, stellate hairy on both sides. Flower yellow with a small purple centre. Capsule oblong, 5 angular, densely hispid.

Abelmoschus moschatus Medic.

[Malvaceae]

(Syn: *Hibiscus abelmoschus* L.)

Vernacular name(s): Bana bhindi (O);
Muskdana (H); Ambrette (E).

Distribution: B-1, B-4.

Description: Hispid herb. Leaves orbicular, variable, partite or 3-7 lobed. Flower yellow with a small dark purple centre. Capsule ovoid, with a short beak, densely hispid. Seeds black-brown or brown, glabrous, reniform, musk scented.



Abutilon indicum (L.) Sweet

[Malvaceae]

Vernacular name(s): Pedi-pedika (O); Kanghani (H); Indian mallow (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Undershrub. Leaves cordate, ovate to suborbicular. Flowers solitary, axillary, yellow to pale orange. Schizocarp glabrous, dorsally covered with stellate hairs. Seeds glabrous or sparsely, minutely stellate hairy and 2-3 per mericarp.



Acalypha indica L.

[Euphorbiaceae]

Vernacular name(s): Indramarisha (O); Khokali (H); Indian acalypha (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb. Leaves rhomboid-ovoid, surface minutely dotted, base 5-nerved. Spike axillary, numerous, males flowers above, female below, ebracteate; female bracts concave, foliaceous. Capsule concealed by the bracts, hispid, single-seeded.

Achyranthes aspera L.

[Amaranthaceae]

Vernacular name(s): Apamaranga (O); Latjira (H); Prickly chaff flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Straggling or subscandent herb. Leaves obovate, generally appressed hairy beneath. Spikes, flowers polished green, deflexed; bracteole spinescent, with thickened base, ovate, membranous blade. Utricle broadly oblong.



Acorus calamus L.

[Araceae]

Vernacular name(s): Bacha (O); Ghorbach (H); Sweet rush (E).

Distribution: B-2.

Description: A semi-aquatic rhizomatous perennial herb, rhizome creeping, much branched. Leaves bright green, distichous, ensiform, base equitant, thickened in the middle, margins wavy. Flowers light brown densely packed in sessile cylindrical spadix. Fruits oblong turbinate berries with a pyramidal top.



Aerva javanica (Burm.f.) Shult.

[Amaranthaceae]

Vernacular name(s): Paunsia (O); Buee (H); Snow bush (E).

Distribution: B-4.

Description: Multi-stemmed and soft-wooded herb. Stem round, striped, densely whitish- or yellowish-woolly or pannose. Leaves broad, alternate, densely whitish- or yellowish woolly, stalkless. Flowers dioecious. Spikes stalkless, cylindrical, interrupted with lateral spherical clusters of flowers. Capsule rotund, compressed. Seed round, slightly compressed, brown or black, shining and smooth.

Aerva lanata (L.) Juss. ex Schultes.

[Amaranthaceae]

Vernacular name(s): Paunsia (O); Gorakhbuti (H); Mountain Knot Grass (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Perennial herb, occasionally woody below, prostrate to erect. Stem and branches densely woolly with whitish or yellowish, shaggy hairs. Leaves alternate, circular to lance-shaped-elliptic, usually densely woolly on the lower surface and more thinly so above. Flower spikes stalkless, solitary or usually in clusters in leaf axils, divergent, cylindrical, silky white to creamy.



Aerva saguolenta (L.) Juss. ex Schultes.

[Amaranthaceae]

Vernacular name(s): Rakta mari (O); Nuria (H); Climbing Wool-Plant (E).

Distribution: B-2.

Description: Perennial herb, frequently woody below, prostrate to erect, 0.4-1 m. Leaves are broadly to narrowly elliptic or elliptic-lanceolate or elliptic-ovate, narrowed to flat at the base, about 1.5-18 x 0.8-6 cm, leaf-stalk upto 2 cm long. Flowers arise in stalkless spikes, forming a lax raceme or terminal panicle, 0.5-8 x 0.4-0.6 cm, white to pale pink or pale brown. Capsule is about 1 mm. Seed 0.8-1 mm, kidney-shaped, black, shining.



Aeschynomene aspera L.

[Fabaceae]

Vernacular name(s): Sola (O); Pith plant (E).

Distribution: B-3, B-4.

Description: Marshy herbs, stem spongy, pith-like. Leaves 7-15 cm long; leaflets sessile, 25-50 pairs, linear-oblong, stipules 0.7-1.5 cm long, lanceolate. Inflorescence racemes axillary, 2-4-flowered, to 5 cm long. Flowers 15-20 mm long, yellow. Pods compressed, 4-8-articulate, echinate over seeds, indented along both margins, dark brown. Seeds 5-6 x 3-4 mm, reniform, black.

Aeschynomene indica L.

[Fabaceae]

Vernacular name(s): Lajuari (O); Laugauni (H); Pith plant (E).

Distribution: B-1, B-4

Description: Erect, suffruticose herb. Leaflets 20-30 pairs, linear-oblong, glabrous, mostly alternate. Inflorescence racemose lax, 1-4 flowered. Flower yellowish. Pods linear, slightly curved or nearly straight, joints 5-10, smooth or papillose.



Ageratum conyzoides L.

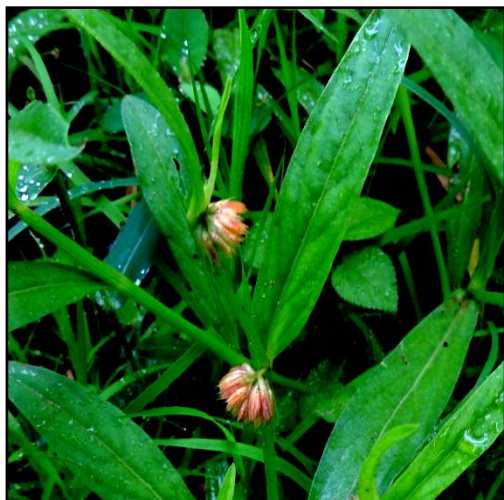
[Asteraceae]

(Syn: *Ageratum latifolium* Cav.)

Vernacular name(s): Pokasungha (O); Goat weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect, sub-shrubs, 20–150 cm. Leaf blades ovate to elliptic-oblong, 2–8 × 1–5 cm, margins toothed. Involucres 3–3.5 × 4–5 mm. Phyllaries oblong-lanceolate (0.8–1.2 mm wide), glabrous or sparsely pilose, eglandular, 0.5–1 mm. Corollas usually blue to lavender or white. Fruit a cypsela, sparsely strigosohispidulous. Pappi usually of scales 0.5–1.5(–3) mm, sometimes with tapering setae, rarely 0.



Allmania nodiflora (L.) R.Br.ex Wight

[Amaranthaceae]

Vernacular name(s): Node Flower Allmania (E)

Distribution: B-1, B-3, B-4.

Description: Herbs annual, erect or ascending, 10-50 cm tall. Leaf blade obovate, oblong, or linear, 1.5-6.5 mm × 0.3-2.5 cm, Heads globose, becoming somewhat lengthened, with 3-7-flowered cymes. Tepals obliquely spreading at anthesis, later erect, ovate-lanceolate or oblong-lanceolate, 4-5 mm. Utricles enclosed in persistent perianth, pale green, ovoid, 3-3.5 mm in diam. Seeds 1.5-2 mm in diam.

Alocasia macrorrhizos (L.) G. Don

[Araceae]

Vernacular name(s): Mana saru (O); Mankanda (H); Gaint taro (E).

Distribution: B-4.

Description: Herb up to 200cm. Caudex clothed with aerial roots. Leaves broadly ovate-sagittate, repand. Peduncles several, paired in each axil. Spathe hooded cymbiform, cuspidate, pale-green limb. Spadix rugulose or sinutely sulcate. Berry red.



Aloe vera (L.) Burm.f.

[Asphodelaceae]

Vernacular name(s): Ghee kuanri (O);
Kumari (H); Aloe (E).

Distribution: B-1, B-2.

Description: Stemless herb. Leaves thick, fleshy, green to grey-green, serrated; some varieties of flecks on their upper and lower stem surfaces. Flowers spike upto 90 cm tall, each flower being pendulous, yellow tubular.



Alpinia galanga (L.) Willd.

[Zingiberaceae]

Vernacular name(s): Kulanjana (O);
Bara-kulanjan (H); Thai Ginger (E).

Distribution: B-2.

Description: Rhizomes tuberous. Pseudostems ca. 2 m. Ligule suborbicular, ca. 5 mm; petiole ca. 6 mm; leaf blade oblong or lanceolate, 25-35 × 6-10 cm, glabrous. Panicles ca. 20 × 30 cm; 3-6 flowered. Flowers green-white, fragrant. 1.6-1.8 cm. Labellum white with red lines, obovate-spatulate, ca. 2 cm, apex deeply 2-cleft. Capsule brown or red when dry, oblong, slightly contracted at middle, 1-1.5 cm × ca. 7 mm, thin, glabrous. Seeds 3-6.

Alpinia nutans K.Schum.

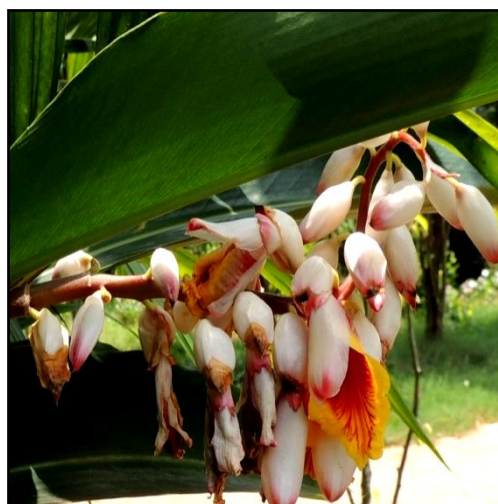
[Zingiberaceae]

(Syn: *Costus zerumbet* Pers.)

Vernacular name(s): Shankhi
Kulanjana (O); Shell flower (E).

Distribution: B-2.

Description: Rhizomes tuberous. Pseudostems ca. 1-1.5 m. Leaf blade lanceolate to narrowly elliptical, (20-)30 (3)7-12 cm. Inflorescences drooping, 15--30 cm; stalks of cincinni 0.3-3 cm, bracteoles sheathing, white proximally, pink distally. Flowers pink-white, fragrant. Corolla tube 5-11 mm; lobes oblong, 1.5-2 cm. Labellum yellow with red lines, obovate-spatulate, ca. 2.5-3.5 cm. Capsule red, oblong, 1.5-2 cm × ca. 6 mm, thin, glabrous. Seeds 4-6.



Alpinia purpurata K.Schum.

[Zingiberaceae]

Vernacular name(s): Rakta Kulanjana (O); Red Ginger (E).

Distribution: B-2.

Description: Rhizomes tuberous. Pseudostems ca. 1-2 m. Leaf blade lanceolate to narrowly elliptical, (15) 30 × (5)6-15 cm. Inflorescences projecting from tip of pseudostem, 12-37 cm; Flowers white-red, fragrant. Corolla tube 3-9 mm; lobes oblong, 1.8-2.8 cm. Labellum white with red lines, obovate-spatulate, ca. 2-3 cm. Capsule reddish brown, oblong, 1.7-2.6 cm × ca. 4 mm, thin, glabrous. Seeds 3-5.



Alternanthera bettzickiana (Regel)

G.Nicholson

[Amaranthaceae]

Vernacular name(s): Chitra Meenakshi (O); Calico Plant (E).

Distribution: B-2.

Description: Herbs perennial, 20-50 cm tall. Leaf blade green or red, or tinged red or yellow, oblong, oblong-ovate, or spatulate, 1-6 × 0.5-2 mm. Heads 2-5, terminal or axillary, 5-10 mm, sessile. Bracts and bracteoles ovate-lanceolate, 1.5-3 mm, abaxially glabrous or long hairy, apex acuminate. Tepals white, ovate-oblong; outer segments 3-4 mm, pilose or glabrous. Fruit undeveloped.

Alternanthera paronychioides A. St.-Hil.

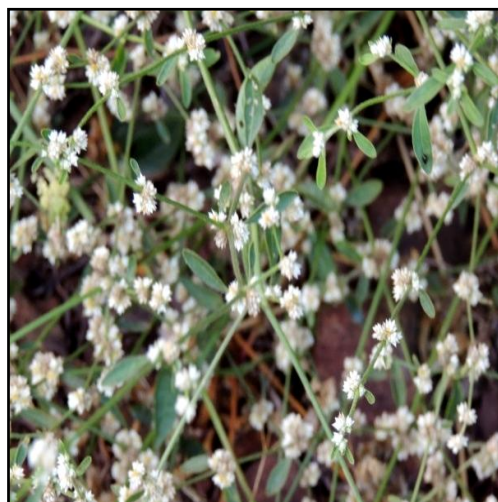
[Amaranthaceae]

(Syn: *Illecebrum ficoideum* Jacquin)

Vernacular name(s): Minakhi (O); Smooth Chaff Flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs, perennial, 150cm in length. Leaves sessile; blade elliptic, ovate-rhombic, or oval, 0.6-2.5 × 0.3-1.1 cm, Inflorescences axillary, sessile, heads white, globose, 0.5-1 cm diam. Tepals monomorphic, white, lanceolate, 3-5 mm. Utricles included within tepals, stramineous, orbiculate to rounded-obovate, 2-2.3 mm, apex truncate. Seeds lenticular, 1.2-1.5 mm.



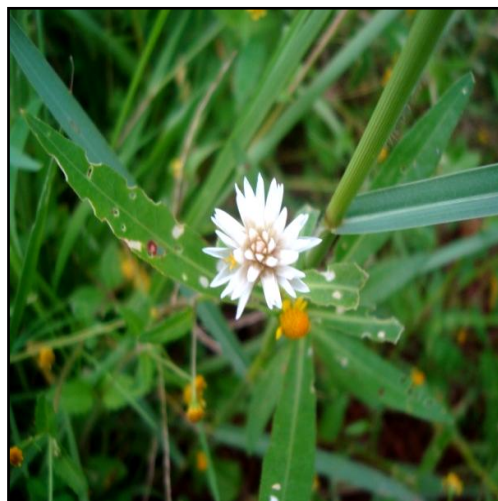
Alternanthera philoxeroides (C. Martius)
Grisebach

[Amaranthaceae]

Vernacular name(s): Bilati Madaranga (O); Kabonapi (H); Alligator Weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs perennial. 55-120 cm, branched. Petiolate, glabrous or slightly hairy; leaf blade oblong, oblong-obovate, or ovate-lanceolate, 2.5-5 × 0.7-2 cm. Heads with a peduncle, solitary at leaf axil, globose, 0.8-1.5 cm in diam. Bracts and bracteoles white, 1-veined. Tepals white, shiny, oblong, 5-6 mm, glabrous, apex acute. Fruit not known.



Alternanthera sessilis (L.) R.Br. ex DC.

[Amaranthaceae]

(Syn: *Gomphrena sessilis* L.)

Vernacular name(s): Madaranga saga (O); Garundi (H); Sessile Joyweed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs upto 70cm. Leaves sessile; blade elliptic to oblong or oblanceolate, 1.2-5 × 0.5-2.2 cm, glabrous. Inflorescences axillary, sessile, heads white, subglobose or ovoid, 0.5-1.1 cm. Tepals white, ovate to lanceolate, 2-3.5 mm. Utricles included within tepals, sides exerted in mature fruit, greenish stramineous, obcordate, 1.3-1.7 mm, apex retuse. Seeds lenticular, 0.9-1.1 mm.

Alysicarpus vaginalis (L.) DC. var. **nummularifolius** Miq.

[Fabaceae]

Vernacular name(s): Pana Nata (O); Alyce clover (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate or diffuse herb. Leaves elliptic-oblong, smaller, obtuse, glabrous. Racemes congested, dense, 6-12 flowered. Flower small, pinkish. Pods subterete, glabrous or pubescent, reticulately veined; joints 4-8.



Amaranthus caudatus L.

[Amaranthaceae]

Vernacular name(s): Khada (O);
Ramdana (H); Love Lies Bleeding (E).

Distribution: B-2.

Description: Annual herb that usually grows 2-4 ft tall. Leaves oval, light green. Spike highly attractive erect, deep purplish red. Flowers blood red petal less, bloom in narrow, often drooping, tassel-like, terminal and axillary panicles. Seeds edible.



Amaranthus spinosus L.

[Amaranthaceae]

Vernacular name(s): Kanta saga (O);
Kateli (H); Rickly amaranthus (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb, armed with sharp axillary spines; spines paired or clustered. Leaves ovate, lanceolate. Flowers green, in axillary clusters, in long terminal erect and axillary spreading spikes; bracts narrow. Utricle ovoid.

Amaranthus tricolor L.

[Amaranthaceae]

(Syn: *Amaranthus gangeticus* L.)

Vernacular name(s): Leutia (O);
Elephant-Head Amaranth (E).

Distribution: B-1.

Description: Erect herb. Leaves ovate-deltoid. Flowers in axillary clusters from leaf-axils; bracts and bracteoles long awned. Utricle ovoid, circumscissile.



Amaranthus viridis L.

[Amaranthaceae]

Vernacular name(s): Bila saga (O); Jangali chaulai (H); Wild amaranthus (E).

Distribution: B-1, B-4.

Description: Erect or procumbent herb, glabrous. Leaves rhomboid-ovate, often emarginate. Flowers minute in paniced spikes; bracts and bracteoles ovate-lanceolate, midrib minutely excurrent. Utricle rugose, acute, indehiscent.



Ammannia baccifera L.

[Lythraceae]

Vernacular name(s): Ramdauni (O); Jungli mehendi (H); Monarch red-stem (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect glabrous herb; stem square. Leaves linear-oblong, tapering at both ends. Flowers minute, subsessile, in few-flowered axillary cymes, turning red in fruit. Capsule depressed, globose, red, 1-celled. Seeds sub-hemispheric.

Ammannia multiflora Roxb.

[Lythraceae]

Vernacular name(s): Ramdauni (O); Jungli mehendi (H); Monarch red-stem (E).

Distribution: B-4.

Description: Erect herb, branches sharply 4-angled. Leaves linear-oblong. Flowers small, red, in compound peduncled cymes. Capsule often reddish, globose.



Ananas comosus (L.) Merr.

[Bromeliaceae]

(Syn: *Bromelia comosa* L.)

Vernacular name(s): Sapuri (O);
Anarash (H); Pineapple (E).

Distribution: B-2.

Description: Leaves ensiform, margin coarsely and laxly spinose serrate. Scape short. Inflorescence many flowered; floral bracts inconspicuous, margin serrulate or entire. Flowers numerous. Sepals free, slightly asymmetric, apex obtuse. Petals violet or reddish, free but connivent and tubelike. Syncarp globose, ovoid, or elongate, 15 cm or longer at maturity, becoming fleshy and fragrant. Seeds absent or very rare.



Andrographis paniculata (Brum.f.) Wall.
ex Nees

[Acanthaceae]

Vernacular name(s): Bhui nimba (O);
Chirayata (H); Kariyat (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stem square, margined on the angled. Leaves linear-lanceolate, minutely puberulous beneath. Flowers solitary, spreading, white-purple or spotted purple, sometimes compound branches of large panicles. Capsule oblong.

Angelonia salicarifolia Humb. &
Bonpl.

[Scrophulariaceae]

Vernacular name(s): Shyamachitra
(O); Narrowleaf Angelonia (E).

Distribution: B-2

Description: Erect perennial plant 20-90cm. Leaves elliptic-lanceolate, glabrous, lowly pubescent, 5×15 cm, with toothed margins and pointed tips. Flowers rose lilac to violet to blue, almost an inch across and borne in slender upright spikes.



Anisochilus carnosus (L.f.) Wall.

[Lamiaceae]

(Syn: *Lavandula carnosa* L.)

Vernacular name(s): Bennia (O);
Panjiri (H); Thick-Leaf Lavender (E).

Distribution: B-1, B-3.

Description: Herbs annual. Leaf blade ovate-oblong to circular, 5-7 × 5-7 cm, corrugate, white tomentose, sparsely red glandular. Spikes 2.5-7.5 × 0.9-1.9 cm, long pedunculate, 4-angled in fruit. Calyx ca. 4.5 mm, puberulent. Corolla purplish, ca. 9 mm, upper lip 4-lobed; lower lip concave. Nutlets unknown.



Anisomeles indica (L.) Kuntze

[Lamiaceae]

(Syn: *Anisomeles ovata* R.Br.)

Vernacular name(s): Droni (O).

Distribution: B-1, B-4.

Description: Perennial 30-150 cm, with several branched leafy stems. Leaves ovate, 5-10 × 3-7 cm, crenate-serrate. Verticillasters upto 20-flowered, distant below, crowded above. Calyx 6-8 mm in flower, pilose to hirsute. Corolla greenish white with purplish markings, 15-17 mm long. Nutlets ovoid, ca. 1.8 mm long, very glossy black, not triquetrous.

Argemone mexicana L.

[Papaveraceae]

(Syn: *Argemone leiocarpa* Greene)

Vernacular name(s): Kanta kusuma (O);
Satyanasi (H); Maxican prickly poppy (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs, annual, 30-100 cm tall. Basal leaves dense; petiole 5-10 mm; blade glaucous with blue-green markings on veins, broadly oblanceolate or obovate to elliptic, 5-20(-25) × 2.5-7.5(-8) cm, glabrous, sparsely sharply spiny on veins. Flower buds ovoid, ca. 1.5 cm. Petals 6, yellow or orange, broadly obovate, 1.7-3 cm. Capsule oblong to broadly elliptic, 2.5-5 × 1.5-3 cm. Seeds spherical, 1.5-2 mm in diam. obviously tessellate.



Artemisia absinthium L.

[Asteraceae]

Vernacular name(s): Dayana (O); Bilayati afsantin (H); Warm wood (E).

Distribution: B-2.

Description: Herbs, perennial, 60-120 cm tall. Leaf blade ovate-elliptic or ovate, 8-12 × 7-9 cm, 2- or 3-pinnatisect; segments 4 or 5 pairs, pinnately lobed. Synflorescence usually a broad conical panicle. Capitula shortly pedunculate, nodding. Involucre globose or subglobose, 2.5-3.5(-4) mm in diam. Marginal female florets 15-25; corolla yellow, obliquely 2-toothed. Disk florets 30-70 (-90), bisexual; corolla yellow. Achenes oblong, 0.8-1 mm.



Asparagus densiflorus (Kunth) Jessop

[Asparagaceae]

Vernacular name(s): Guchha satabari (O); Foxtail asparagus (E).

Distribution: B-2.

Description: Stems ± climbing, branched, to 1 m; branches distinctly striate-ridged. Cladodes in fascicles of 1-5, linear, 1-3 cm × 1.5-2.5 mm, flat. Inflorescences developing after cladodes, solitary or paired, axillary, each a many-flowered raceme or panicle 2-2.5 cm; bracts linear, 2-5 mm. Pedicel ca. 2 mm, articulate at middle. Perianth white; segments oblong-ovate, ca. 2 mm. Berry red, 8-10 mm in diam., 1- or 2-seeded.

Aster indamellus Griers.

[Asteraceae]

(Syn: *Aster amellus* Aitch)

Vernacular name(s): Taraka (O); Star flower (E).

Distribution: B-2

Description: Herbs, perennial, 11-50 cm tall. Leaves cauline, sessile, oblanceolate, 1.6-4(-6) × 0.4-1.7(-2) cm, synflorescence leaves oblanceolate, 1.4-1.6 × 0.2-0.4 cm. Capitula 1-20 in terminal. Phyllaries 2- or 3-seriate, subequal. Ray florets 25-30, blue, mauve, or pink. Disk florets yellow, 4.5-5 mm, Achenes obovoid, 3-3.5 mm. Pappus 3-seriate, dirty white.



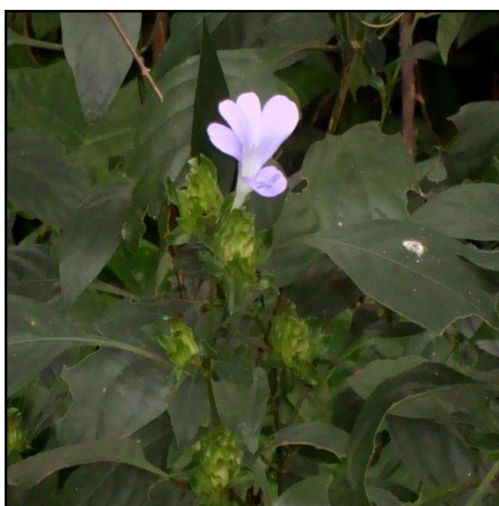
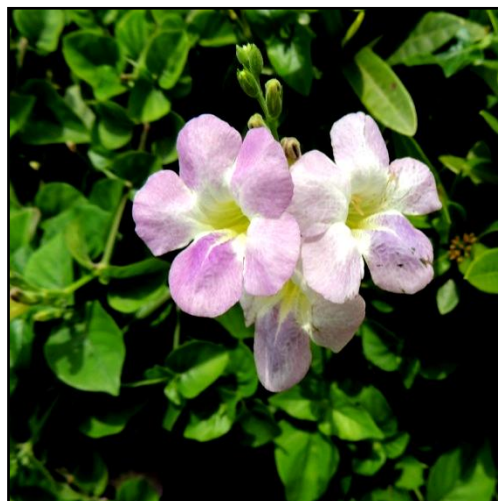
Asystasia gangetica (L.) T. Anderson

[Acanthaceae]

Vernacular name(s): Gangotri (O);
Ganges primrose (E).

Distribution: B-2.

Description: Herbs to 0.5 m tall, ascending. Leaf blade ovate to elliptic, 3-12 × 1-5 cm, glabrous or sparsely pilose especially on veins. Racemes axillary or terminal, to 16 cm. Corolla yellow, white or purplish, 1.2-3.5 cm, lobes obovate to semicircular, 0.7-1.2 × 0.8-1 cm. Capsule ca. 1.3 × 2 cm, pubescent. Seeds irregularly obovate in outline, 3-5 × 0.5-3 mm, tuberculate-rugose.



Barleria cristata L.

[Acanthaceae]

Vernacular name(s): Saireyaka (O);
Nil jhinti (H); Bluebell barleria (E).

Distribution: B-4.

Description: Perennial herb. Leaves elliptic-narrowly ovate, dark green on the upper surface and pale green on the lower surface. Flowers 5 cm long, funnel-shaped, violet, pink, or white. Fruits 1.5 cm long ellipsoid capsules, hairless and glossy at maturity.

Barleria prionitis L.

[Acanthaceae]

Vernacular name(s): Kanta jati (O);
Piyabasa (H); Porcupine flower (E).

Distribution: B-1, B-3, B-4.

Description: Armed undershrub, branchlets pubescent or strigose. Leaves ovate, often spine tipped, strigose. Flowers yellow, 1-3 together in the axils and in terminal spikes; bracteole converted into spine. Capsule with solid beak. Single Seeded.



Bassia scoparia (L.) Schrad.

[Amaranthaceae]

(**Syn:** *Kochia scoparia* (L.) Schrader

Vernacular name(s): Sutapatra (O);
Summer Cypress (E).

Distribution: B-2.

Description: Herbs annual, 50-100 cm tall. Leaves lanceolate or linear-lanceolate, complanate, 2-5 cm × 3-7 mm. Flowers bisexual or female, usually 1-3 per glomerule; spikelike panicles; rachis beneath flowers sometimes ferruginous pilose. Perianth light green, subglobose; Utricle depressed globose. Seed black-brown, sublustrous, ovoid, 1.5-2 mm; perisperm coherent.



Biophytum sensitivum (L.) DC.

[Oxalidaceae]

(**Syn:** *Oxalis sensitiva* L.)

Vernacular name(s): Jhulli puspa(O);
Lajjalu (H); Sikerpud (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Annuals 5-25 cm tall. Leaves 3-13 cm; rachis slender, moderately hispid; leaflets 6-14 pairs; leaflet blades oblong to obovate-oblong, 3-15 × 2-7 mm. Umbels several flowered; peduncle 2-7 cm. Sepals 5-6 mm, with glandular septate trichomes. Petals yellow, longer than sepals. Capsule ellipsoid-obovoid, 4-5 × 3-4 mm, pubescent.

Blepharis maderaspatensis (L.) Roth

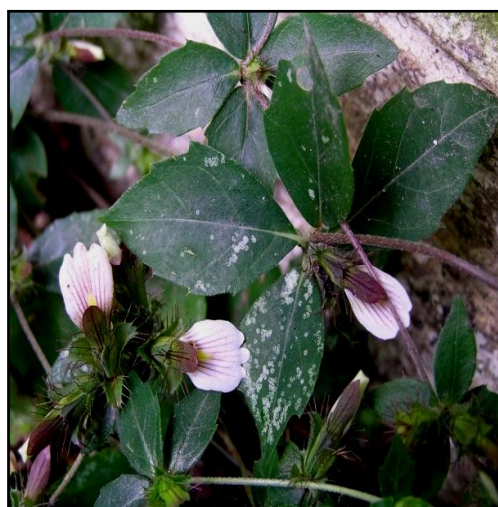
[Acanthaceae]

(**Syn:** *Blepharis boerhaviifolia* Pers.)

Vernacular name(s): Kasabhika (O);
Ukara (H); Creeping Blepharis (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs to 30 cm tall, perennial. Leaves usually 4 per pseudo-whorl of 2 unequal pairs; leaf blade elliptic to obovate lanceolate, base cuneate, margin undulate or dentate. Flowers axillary and solitary or in clusters of few flowered spikes, broadly spatulate to obovate oblong. Calyx puberulent, unequally lobed. Corolla whitish, often with pink or purple; lip obovate, spreading; lobes ovate-oblong.



Blumea lacera (Burm.f.) DC.

[Asteraceae]

Vernacular name(s): Pokasunga (O);
Kukurbanda (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Aromatic herb; stems below sparsely pilose. Leaves obovate-oblong, serrate, lower often lobulate, often densely sericeous beneath. Heads pedunculate, in axillary and terminal, dense to lax panicles. Achenes oblong.



Boerhavia diffusa L.

[Nyctaginaceae]

Vernacular name(s): Puruni saga (O);
Punarnava (H); Wine flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs, perennial; sometimes slightly woody at base; Leaves mostly in basal $\frac{1}{2}$ of plant; larger leaves with petiole 10-30 mm, blade broadly lanceolate, ovate, or broadly ovate, occasionally \pm round, 20-60 \times 15-50 mm. Flower pedicel shorter than 0.5 mm; perianth purplish red to reddish pink or nearly white, campanulate beyond constriction, 1-1.5 mm. Fruits (1-)-2-5(-9) per cluster, gray-brown to brown, obpyramidal, (3-)-3.5-4.5 \times 1-1.2 mm.

Brassica juncea (L.) Czern. & Coss.

[Brassicaceae]

Vernacular name(s): Rai-sorisa,
Sorisha (O); Rayi (H); Indian mustard
(E).

Distribution: B-1, B-2, B-3.

Description: Erect, variable, annual herb, 30-100 cm. Lower leaves lyrate-pinnatifid; middle ones obovate-oblong, pinnatifid; uppermost ones often simple, lanceolate. Flowers ca. 8 mm across. Sepals 4, oblong. Disc with 4 glands. Seeds in one row, ovoid.



Brassica napus L. var. **glauca** (Roxb.)

Schulz

[Brassicaceae]

Vernacular name(s): Sorisa (O);
Pilasarson (H); Indian colza (E).

Distribution: B-2.

Description: Herb; stems tall, branched, erect, reddish-purple below, greenish-red above, glabrous. Leaves alternate, glabrous. Inflorescence terminal raceme, compact in flower. Fruit ascending, seedless.



Brassica oleracea L. var. **capitata** L.

[Brassicaceae]

Vernacular name(s): Bandha kobi (O);
Band-gobi (H); Cabbage (E).

Distribution: B-2.

Description: Biennials, Basal leaves: petiole to 30 cm; blade oblong or obovate, to 45 cm × 150 mm, Flowers: sepals 8-15 × 1.5-2.7 mm; petals yellow, ovate or elliptic, (15-)18-25(-30) × (6-) 8-12 mm. Fruits spreading to ascending, smooth, ± 4-angled or subterete, (2.5-)5-8 (-10) cm × (2.5-)3-4(-5) mm. Seeds brown, 1.7-2.5 mm diam. (Leaves congested into a subglobose head is edible.)

Brassica oleracea L. var. **botrytis** L.

[Brassicaceae]

Vernacular name(s): Phulakabi (O);
Phulgobi (H); Cauliflower (E).

Distribution: B-2

Description: Biennials, Basal leaves: petiole to 30 cm; blade oblong or obovate, to 45 cm × 150 mm, Racemes not paniculately branched. Flowers: sepals 8-15 × 1.5-2.7 mm; petals yellow, ovate or elliptic, (15-)18-25(-30) × (6-) 8-12 mm. Fruits spreading to ascending, smooth, ± 4-angled or subterete, (2.5-)5-8(-10) cm × (2.5-)3-4(-5) mm. Seeds brown, 1.7-2.5 mm diam. (abortive flowers aggregated on thick branches of the inflorescence is edible)



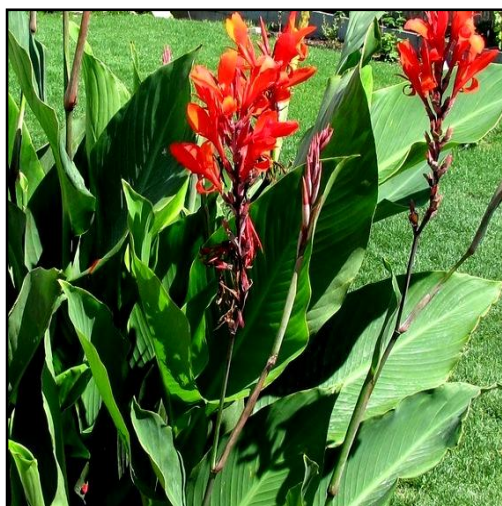
Caladium bicolor (Aiton) Vent.

[Araceae]

Vernacular name(s): Chitra saru (O);
Fancy-Leaf Caladium (E).

Distribution: B-2

Description: A herb 30-95cm tall. Leaves arise directly from the tuber, 6-12 inches long stalks. Leaves arrow-shaped, 6-14 inches long, and variously spotted or streaked with pink, red, gray, or white. Inflorescence is a 9 inch greenish white spadix, covered by a spathe. Fruit a berry with several or many small ovoid seeds.



Canna indica L.

[Cannaceae]

[**Syn:** *Canna indica* L. var. *orientalis* (Rosc.) Baker]

Vernacular name(s): Sarvajjaya (O & H);
Indian shot (E).

Distribution: B-2.

Description: Herb. Leaves elliptic-lanceolate or elliptic-oblong, caudate-acuminate. Flowers scarlet or yellow, rather distant; labellum often yellow with red streaks. Capsule globose or ellipsoid, erect, sometimes obscurely 3-lobed. Seed black.

Capsicum annum L.

[Solanaceae]

Vernacular name(s): Lanka (O);
Mirchi (H); Common chilli (E).

Distribution: B-2

Description: Annual herb. Leaves 2-8 x 1-3 cm, lanceolate, entire, acuminate, petiole 1-2 cm long. Flowers axillary, solitary, white. Fruit green, turning red, long-tapering. Seeds discoid, yellow, many.



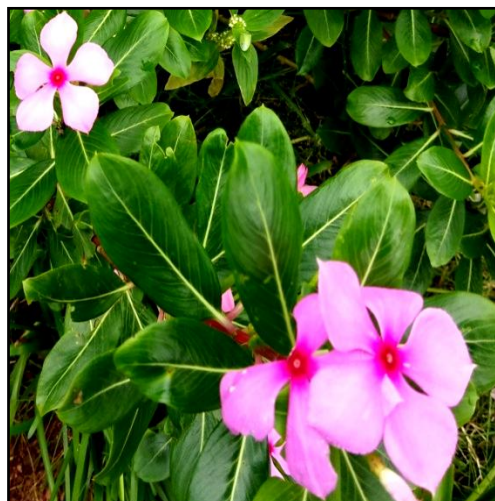
Catharanthus roseus (L.) G. Don

[Apocynaceae]

Vernacular name(s): Sadabihari (O); Sadabahar (H); Madagascar Periwinkle (E).

Distribution: B-2.

Description: Erect herb. Leaves simple, opposite-decussate, elliptic-obovate. Flower axillary, solitary or paired; white or pink. Fruit cylindrical, paired mericarp, finely ribbed. Seeds many, oblong, truncate at both ends.



Celosia argentea L. var. argentea Wight

[Amaranthaceae]

Vernacular name(s): Dhala Kukuta chulia (O); Safed murgaha (H); Quill grass (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stems striate. Leaves lanceolate-oblong, base tapering into slender petiole. Spikes shining, pink or white, peduncled, ovoid or cylindrical. Tepals linear-lanceolate; bracts and bracteoles similar, aristulate. Seeds several, black.

Celosia cristata L.

[Amaranthaceae]

[**Syn:** *Celosia argentea* Linnaeus var. *cristata* (L.) Kuntze]

Vernacular name(s): Nali Kukuta chulia (O); Murgaha (H); Cocks comb (E).

Distribution: B-2.

Description: Herbs, annual. Leaves: petiole 1-3 cm; blade unlobed, variable, mostly lanceolate or ovate, 8-15 × 1-8 cm. Inflorescences variously fasciated, dense, crested or plumose. Flowers: tepals pink, red, yellow, purple, or white, faintly 3-veined at base, 5-8 mm, scarious. Utricles 3-4 mm. Seeds 6-10, 1.5 mm diam., faintly reticulate, shiny.

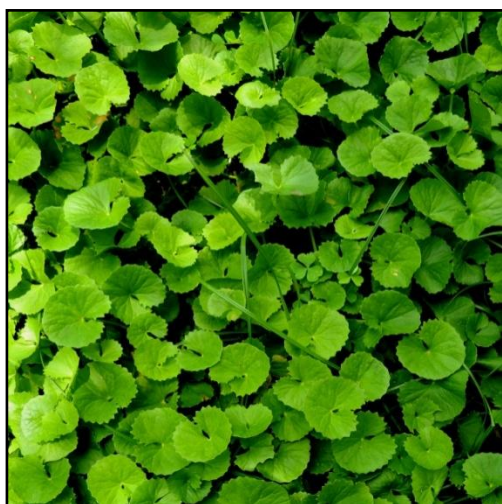


Celosia argentea var. **plumosa** Voss,
[Amaranthaceae]

Vernacular name(s): Chitra Kukuta chulia(O); Silver cock's comb (E).

Distribution: B-2.

Description: Herbs, annual up to 1 m, Leaves petiole 1-3 cm; blade unlobed, ovate, lanceolate, or nearly linear, 8-15 × 1-6 cm. Inflorescences dense cylindric or ovoid spikes, units 13-20 mm diam. Tepals silvery white or pinkish, 3-veined, 6-8 mm, scarious, translucent. Utricles 4 mm. Seeds 3-8, 1.5 mm diam., smooth, shiny



Centella asiatica (L.)Urban

[Apiaceae]

(Syn: *Hydrocotyle asiatica* L.)

Vernacular name(s): Thalkudi (O); Brahmi (H); Indian pennywort (E).

Distribution: B-2.

Description: Herbs with long creeping stems, rooting at the nodes. Leaves shallowly crenate, orbicular-reniform, glabrous, with several slender nerves from the base. Flowers 3-5, rarely 6 in an umbel, subsessile, red. Fruits orbicular to ellipsoid.

Chamaecostus cuspidatus (Nees & Mart.) C.Specht & D.W.Stev.

[Costaceae]

Vernacular name(s): Agni kemuka (O); Insulin plant (E).

Distribution: B-2

Description: It is a perennial, upright, spreading plant growing to a height of 2 feet. Leaves simple, alternate, entire, oblong, 4-8 inches long with parallel venation, spirally arranged around the stems. Large, fleshy, smooth, and dark green leaves have a light purple underside. Flowers are orange, 1.5 inches in diameter, on cone-like head at the tips of branches. Fruits are green colored, less than 0.5 inch.



Chenopodium album L.

[Chenopodiaceae]

Vernacular name(s): Bathua saga (O); Bathuwa (H); White goosefoot (E).

Distribution: B-4.

Description: Erect aromatic herb. Stem sulcate, glandular. Leaves oblong, irregularly toothed. Flowers minute, innumerable, green, subsessile, clustered, leafy spikes. Flowers 4-5 or rarely 6-merous. tepals elliptic, connate at base with granulose glands closed valvately over fruit; minutely papillose, albumen copious.



Chrozophora rottleri (Geisel.) Juss.

[Euphorbiaceae]

Vernacular name(s): Suryavarta (O &H); Suryavarti (E).

Distribution: B-3, B-4.

Description: Herb, densely hispid. Leaves caluine, ovate-orbicular, densely stellate-tomentose both sides. Flowers in axillary or terminal bracteate racemes. Capsule subglobose, stellate-tomentose, reddish-purple when mature.

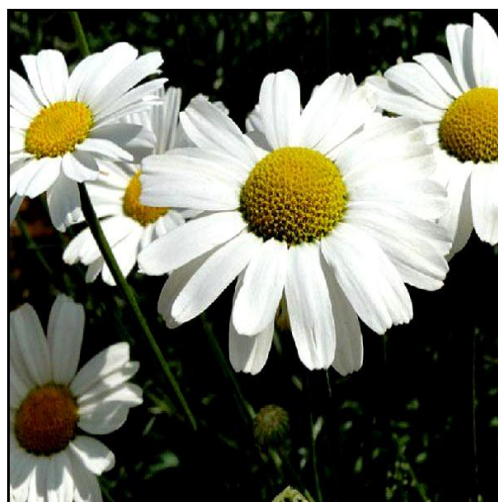
Chrysanthemum cinerariifolium (Trev.) Vis.

[Asteraceae]

Vernacular name(s): Sevati (O & H); Chrysanthemum (E).

Distribution: B-2.

Description: Herbs, perennial, 0.25-1 m tall, with long or short procumbent rhizomes. Leaf blade ovate or elliptic-ovate, both surfaces pale green or olive, pinnatifid, pinnatilobed, or inconspicuously divided, base truncate, somewhat cordate or broadly cuneate. Synflorescence a lax terminal flat-topped cyme. Capitula many or few. Phyllaries in 5 rows, scarious margin broad, white or brown. Ray floret lamina yellow. Achenes 1.5-1.8 mm.



Cleome rutidosperma DC.

[Capparaceae]

Vernacular name(s): Shyama Anasorisha (O); Hul hul (H); Fringed Spider Flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Annual, erect herb. Leaves 3-foliolate; lower ones long-petioled; upper ones short-petioled or sessile; leaflets subsessile. Racemes lax, few-flowered, leaf bearing. Flowers in axils of leaves below and in axils of foliaceous bracts above; pedicels filiform. Capsules linear-cylindric, compressed.



Cleome viscosa L.

[Capparaceae]

Vernacular name(s): Peeta Anasorisha (O); Ujla Hulhul (H); Wild Mustard (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect profusely branched woody annual herbs. The whole plant viscous with stalked glandular hairs. Leaves 3-5(-7)-foliolate; leaflets subsessile, elliptic-oblong or obovate to spatulate. Racemes terminal, lax, few-flowered, corymbiform. Flowers pedicellate, elongate during fruiting. Capsules linear-oblong, terete, striate, densely glandular hairy. Seeds many, reddish-brown.

Coldenia procumbens L.

[Boraginaceae]

Vernacular name(s): Gandhrilata (O); Tripungki (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate herb, stem scabrid hairy. Leaves obovate, densely scabrous or hispid above, sometimes white-glandular pubescent along the nerves. Flowers very small, white. Drupe pyramidal, tipped with the hardened bipartite style.



Colocasia esculenta (L.) Schott

[Araceae]

(Syn: *Colocasia antiquorum* Schott.)

Vernacular name(s): Saru (O); Kachalu (H); Taro (E).

Distribution: B-4.

Description: Tuberous herb. Leaves peltate, ovate or suborbicular, petiole green or violet. Spathe yellow, peduncled, convolute. Spadix much shorter than spathe; appendix rather slender.



Commelina benghalensis L.

[Commelinaceae]

Vernacular name(s): Kanasiri (O); Kanchira (H); Whiskered commelina (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Subsucculent herb; stem pubescent or glabrous. Leaves ovate-elliptic, pubescent or villous. Spathe 1-3 together, conduplicate, turbinate or conical in form. Cymes 2-nate, 2-3 flowered, blue. Capsule membranous, pyriform.

Commelina erecta L.

[Commelinaceae]

(Syn: *Commelina kurzii* C.B.Cl.)

Vernacular name(s): Lamba Konisiri (O); Kanchira (H); Erect commelina (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Stem hairy or glabrous. Leaves lanceolate-oblong, pubescent, scaberulous, hirsute; sheaths hoary-pubescent. Spathes solitary or clustered, cucullate, recurved, hoary-pubescent or glabrous. Capsule 3-celled, 2-valved. Seeds 2.



Commelina longifolia Lam.

[Commelinaceae]

(Syn: *Commelina salicifolia* Roxb.)

Vernacular name(s): Lamba kansasiri (O); Jal pipari (H); Long leaf commelina (E).

Distribution: B-4.

Description: Herb; slender stem with long internodes. Leaves sessile, linear-lanceolate, glabrous or hispid; sheaths ciliolate. Spathes solitary, axillary, complicate, lanceolate or ovate. Flowers blue, exserted on cyme branches. Capsule 3-celled, oblong.



Commelina paludosa Blume

[Commelinaceae]

(Syn: *Commelina obliqua* auct. non Vahl: Ham. ex D. Don)

Vernacular name(s): Anupa kansiri (O); Kena (H); Swamp Day flower (E).

Distribution: B-3.

Description: Suberect or ascending herb, 20-60(-90) cm long, Leaves 5-10 (-15) cm long, 2-5 cm broad, lanceolate, 1.5-2.5 cm long. Flowers usually pale blue. Capsules obovoid, subtrigonus, 3-loculed with 1 seed in each locule. Seeds ellipsoid, lead-coloured or whitish.

Coriandrum sativum L.

[Apiaceae]

Vernacular name(s): Dhania (O); Dhaniya (H); Coriander (E).

Distribution: B-2.

Description: Herb 30-70 cm tall. Leaves bright green, fan shaped, more feathery towards the top. Flowers small, white, formed in umbel-like clusters. Fruit sweet scented a cremocarp.



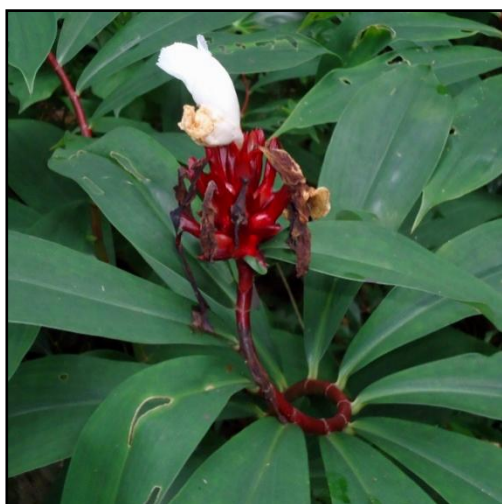
Cosmos caudatus Kunth

[Asteraceae]

Vernacular name(s): Ansuman (O);
Ulam raja (H); Wild cosmos (E).

Distribution: B-3, B-4.

Description: Erect much branched herb. Leaves bipinnatisect or sometimes tripinnatisect, deltoid in outline. Heads solitary on peduncles. Sparsely pilose. Involucre campanulate. Ray florets 8, pink, ligule 3-toothed or 3-lobed at apex. Disc florets yellow. Palea linear membranous; rostrum about 1-1.5 cm long .



Costus speciosus (Koenig) Sm.

[Costaceae]

Vernacular name(s): Gaigobara (O); Kust
(H) ; Elegant costus (E).

Distribution: B-4.

Description: Herb, 0.6-1.8 m. Leaves elliptic-oblong, oblong-lanceolate, oblanceolate-oblong, or obovate-oblong. Flowers white, very large, in dense terminal spikes. Calyx 2.5 cm. Petals 2.5-3.7 cm long. Labellum suborbicular, 5-7.5 cm, often yellow in the centre.

Crinum asiaticum L.

[Amaryllidaceae]

Vernacular name(s): Arsa (O); Hathi
kanda (H); Wild lily (E).

Distribution: B-2.

Description: Robust herb; bulbs narrowed into a long neck. Leaves sheathing at base, oblong-lanceolate. Scape compressed; spathe bracts 2, lanceolate. Flowers white, 10-30 in umbel. Fruit broadly ellipsoid or globose. Seeds large.



Crotalaria pallida Ait.

[Fabaceae]

(Syn: *Crotalaria stricta* DC.)

Vernacular name(s): Jhunjhunuka (O);
Sensan (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb. Leaves 3-foliolate;
leaflets glabrous, obovate. Racemes
terminal and lateral. Flowers yellow.
Pods oblong, glabrescent when mature.
Seeds 30-40.



Crotalaria prostrata L.

[Fabaceae]

Vernacular name(s): Bishnukarni (O);
Chhota jhunghiyan (H).

Distribution: B-4.

Description: Prostrate herbs with spreading
or long trailing slender branches, covered
with yellowish silky hairs. Leaves sub-
orbicular to oblong-elliptic or elliptic-
lanceolate. Racemes lateral, long, 2-4-
flowered. Flowers yellow, 5-8 mm long.
Pods oblong, 12-20-seeded, glabrous.

Crotalaria verrucosa L.

[Fabaceae]

Vernacular name(s): Balijhumuka (O);
Jhunjhunua (H); Blue Rattlepod (E).

Distribution: B-4.

Description: Herb upto 150 cm.
Racemes 3-7 flowered, terminal.
Flowers small, white, blue and
yellowish; borne in 3-8 cm long
racemes at the end of branches. Corolla
with deep purple lines on the standard.
Pods turgid, oblong, thinly silky. Seeds
12 or more. alternate, lance-shaped,
toothed margin. Fruits oblong capsule,
with a warty surface.



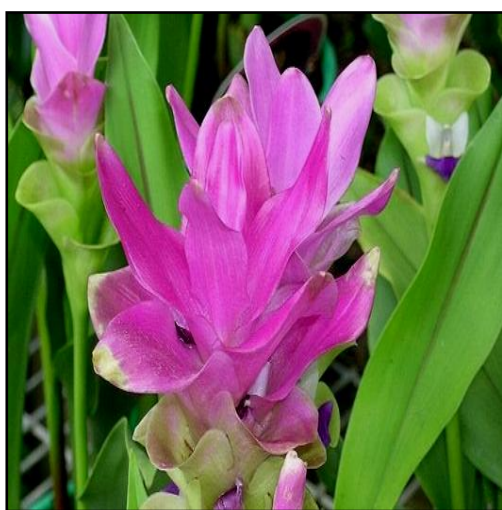
Croton bonplandianus Baill

[Euphorbiaceae]

Vernacular name(s): Bana lanka (O); Kala Bhangra (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Small annual herb. Leaves alternate, lance-shaped, toothed margin. Flowers small, white, borne in 3-8 cm long racemes at the end of branches. Fruits oblong capsule, with a warty surface.



Curcuma amada Roxb.

[Zingiberaceae]

Vernacular name(s): Amba ada (O); Aam adrak (H); Mango ginger (E).

Distribution: B-2.

Description: Rhizome light yellow inside, smell of green mango; sessile tubers thick, 5-10 x 2-3 cm. Pseudostem 30-35 cm tall. Leaves 4-6; upper larger, 45-60 x 14-15 cm, oblong, lanceolate. Inflorescence lateral or central; peduncle 20-22 cm long, covered by 5-6 sheaths; spike 12-18 cm long. Flowers large, ca. 5 cm long, 4-5 in each bract. Corolla tube funnel-shaped, 3 cm long, pale yellow. Labellum somewhat elliptic, ca. 1.8 x 1.5 cm, 3-lobed, pale yellow with a median dark yellow band, glabrous.

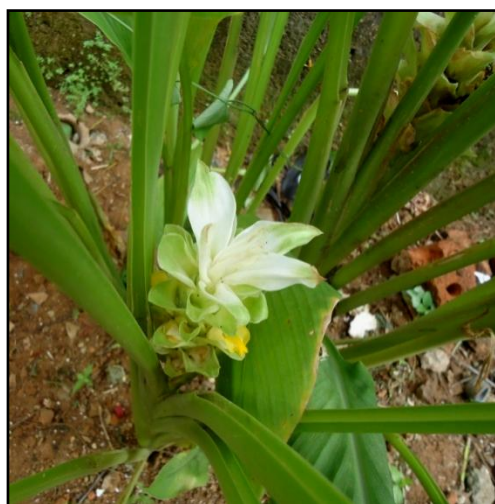
Curcuma longa L.

[Zingiberaceae]

Vernacular name(s): Haladi (O); Haldi (H); Turmeric (E).

Distribution: B-2.

Description: Plants ca. 1 m tall. Rhizomes many branched, orange or bright yellow, cylindrical, aromatic; roots tuberous at tip. Petiole 20-45 cm; leaf blade green, oblong or elliptic, 30-45 (-90) x 15-18 cm. Inflorescences terminal on pseudostems; peduncle 12-20 cm; spike cylindrical, 12-18 x 4-9 cm; Calyx white, 0.8-1.2 cm. Corolla pale yellow; tube to 3 cm; lobes deltoid, 1-1.5 cm, central one larger, apex mucronate. Labellum yellowish with central, yellow band.



Curcuma zedoaria (Christm.)Rosc.

[Zingiberaceae]

(Syn: *Curcuma pallida* Lour.)

Vernacular name(s): Gandha sunthi (O); Zedoary (E)

Distribution: B-2

Description: Leaf blade narrowly ovate or elliptical, 45-67 × 15-22 cm. Inflorescences erect, 11-23 × 5-10 cm; bracts of main axis whitish proximally, green (proximal bracts) or pink (distal bracts) distally; proximal bracts ovate to rectangular, deeply saccate, 4-4.5 × 4 cm, apex obtuse or truncate-apiculate; distal bracts narrowly ovate, 8-9 × 4-4.5 cm, apex rounded. Perianth white or spotted with purple.



Cyanotis cristata (L.) D.Don

[Commelinaceae]

Vernacular name(s): Chuli Neelima (O);

Distribution: B-2, B-4

Description: Diffuse or sub-erect or ascending herb, 15-35 cm, glabrous. Internodes long, leaves 2-8 x 0.5-1.6 cm, sessile, ovate-oblong, sub-acute, base rounded. Flowers violet-purple, in scorpioid cymes. Spathes 1.2-2 x 0.8-1.8 cm, imbricating. Capsule trigonous, nearly glabrous. Seeds 2 per cell, black or dark brown.

Cyanotis tuberosa (Roxb.)Schult. & Schult.f.

[Commelinaceae]

Vernacular name(s): Kanda Neelima (O); Dew Grass (E).

Distribution: B-3, B-4.

Description: Prostrate, ascending herb. Leaves mostly radical, villous, often purple beneath, usually much longer than cauline. Cymes mostly clustered, long peduncled, usually with 2 sessile flowers. Petals blue purple. Seeds brown, broadly conical, rugose.



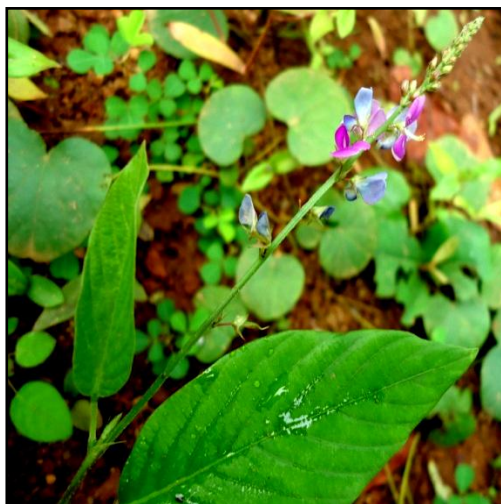
Dentella repens (L.) J.R. & G. Forst.
var. **repens**

[Rubiaceae]

Vernacular name(s): Danturi lata (O);
Creeping Dentella (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Small, sub-dichotomously branched herb. Stems 4-gonous. Leaves oblanceolate, sparsely hairy, ciliate along the margins. Flowers minute, axillary, white, solitary. Fruit globose, covered densely with unicellular trichomes.



Desmodium gangeticum (L.) DC.

[Fabaceae]

Vernacular name(s): Shalaparni (O);
Salpan (H).

Distribution: B-2.

Description: Diffuse herb; stem appressed hairy. Leaves uni-foliolate, glabrescent, lanceolate. Flowers white or purple, 2-several in ascending lax, elongate, axillary, usually panicles racemes. Pods 6-8 jointed, subfalcate.

Desmodium triflorum (L.) DC.

[Fabaceae]

Vernacular name(s): Katkana (O);
Kudaliya (H); Three-Flower Beggar
weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Trailing herb; stem rooting at nodes. Leaves 3-foliolate, very small; leaflets obovate, glabrous above, hairy beneath. Flowers purple, pink or white, minute, 1-4 together in axils of leaves. Pods curved, 3-5 jointed, reticulate-veined.



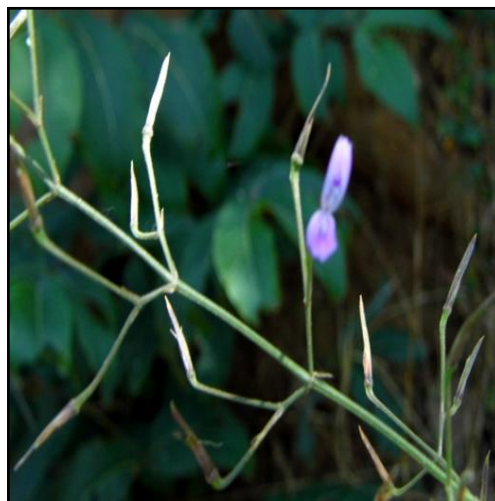
Dicliptera bupleuroides Nees

[Acanthaceae]

Vernacular name(s): Sroopatika (O);
Roxburgh's Foldwing (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stems 4-angled. Leaves ovate. Flowers rose-purple, in very compound axillary sessile cymes; cymule bracts in several transverse series; each series with 5-7 cymules enclosed between a pair of lateral bracts. Seeds 4.



Digera muricata (L.) Mart.

[Amaranthaceae]

Vernacular name(s): Kunjara (O);
Chanchali (H); False Amaranth (E).

Distribution: B-1, B-4.

Description: An annual herb, growing to 20-70 cm tall. Stems are simple or branched from the base, nearly hairless. Alternately arranged leaves, 1-9 cm long and 0.2-5 cm broad, are narrowly linear to broadly ovate. Leaf stalks are long, upto 5 cm. Flowers in a raceme, 30 cm, hairless, white mixed with pink to carmine or red, usually becoming greenish-white in fruit. Fruit subglobose, slightly compressed.

Dipteracanthus prostratus (Poir.) Nees

[Acanthaceae]

Vernacular name(s): Atakali Phula (O);
Bili Padaka (H); Bell Weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Diffuse herbs, stems villous. Leaves to 6 x 4 cm, ovate, acute, entire, petiole 2-3 cm long. Flowers axillary, 2 or 3 together; bracteoles foliar, 1.5 x 1 cm, ovate. Calyx 5-partite, linear, ciliate; corolla pink, obovate. Capsule 1.5 x 0.6 cm, linear oblong. Seeds orbicular, compressed, marginate, smooth.



***Eclipta prostrata* (L.) L.**

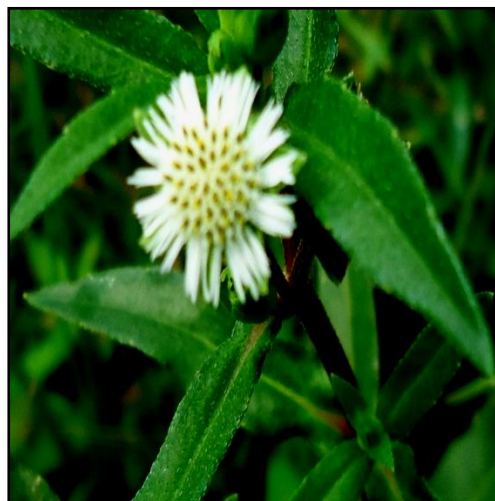
[Asteraceae]

(Syn: *Eclipta alba* (L.) Hasskarl)

Vernacular name(s): Kesadura (O);
Bhringaraj (H); Also Daisy (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs, annual, 60(-100) cm tall. Leaves lanceolate, 3-10 × 0.5-2.5 cm, papery. Capitula ca. 6 mm wide; peduncle slender, 2-4.5 cm; involucre globose-campanulate, ca. 5 × 6-7 mm. Phyllaries 5 or 6, 2-seriate, oblong, acute, outer longer. Ray florets 2-seriate; lamina 2.5-3 × ca. 0.4 mm, bifid or entire. Disk florets many; corolla ca. 1.5 mm, 4-lobed. Achenes ca. 2.8 × 1.5 mm, margin ribbed.



***Emilia sonchifolia* (L.) DC.**

[Asteraceae]

Vernacular name(s): Sarkara (O); Heran khuri (H); Red Tassel flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Glabrous herb. Stems sparsely hairy at base. Leaves at base lyrate and usually pinnatifid; upper cauline leaves few, lanceolate, with large auricles. Heads pink or purple, narrow cylindrical. Achenes with 5 scabrid ribs.

***Eranthemum capense* L.**

[Acanthaceae]

(Syn: *Daedalacanthus montanus* T. Anders.)

Vernacular name(s): Ruchi puspa (O);
Lovely Flower (E).

Distribution: B-3, B-4.

Description: Herbs to 1 m tall. Leaf blade lanceolate to linear-lanceolate to oblong, 6-20 × 2-4 cm. Spikes 3-8 cm; bracts yellowish white with green along veins, oblong to lanceolate, 1-2.2 × 0.2-0.9 cm, Calyx ca. 6 mm, outside pilose, 5-lobed to middle; lobes lanceolate, ca. 1 mm wide. Corolla blue to light purple, ca. 4.5 cm. Capsule 1-1.4 cm, gland-tipped pubescent. Seeds gold to reddish brown to blackish, 3-3.5 × 2.2-2.7 mm.



Eryngium foetidum L.

[Apiaceae]

Vernacular name(s): Bana dhania (O);
Ban dhania (H); Long coriander (E).

Distribution: B-2.

Description: Plants 8-40 cm high from a basal rosette. Basal leaves numerous; blade lanceolate or oblanceolate, entire, 5-25 × 1.2-4 cm. Inflorescence divaricately trifurcate; heads numerous, short-pedunculate. Flower heads cylindrical, 5-12 × 3-5 mm. Calyx teeth ovate-lanceolate. Petals white or pale yellow. Fruit ovoid-globose, covered with tubercles.



Euphorbia heterophylla L.

[Euphorbiaceae]

Vernacular name(s): Dudhi patra (O);
Lesser green Poinsettia (E).

Distribution: B-3, B-4

Description: Robust annual herb, glabrous to pilose. Leaves alternate below, opposite above, broadly ovate, glabrous or pilose, margins entire to coarsely serrate, sometimes floral leaves white or with splotches of purple at base, never red. Cyathia in dense terminal cymes; involucre glabrous, gland 1, cup-shaped with a circular opening, without an appendage.

Euphorbia hirta L.

[Euphorbiaceae]

Vernacular name(s): Chitakuti (O);
Dudhi (H); Asthma plant (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stem hairy. Leaves ovate-oblong, opposite, lower surface pale. Cyathia aggregated in single or paired, capitate, subsessile, axillary cymes. Capsule pubescent or hairy. Seeds reddish, oblong, 3 (4) keeled and minutely furrowed.



Euphorbia indica Lam.

[Euphorbiaceae]

Vernacular name(s): Chitakuti (O);
Dudhi (H); Asthma plant (E).

Distribution: B-2.

Description: Herbs, annual, to 50(-100) cm tall. Leaves opposite; leaf blade ovate, to 3(-7) × 1.5(-2.5) cm. Cyathia in axillary or terminal pedunculate capitate cymes, pubescent. Male flowers slightly exserted. Female flower exserted from involucre. Capsule 3-angular-ovoid, ca. 1.5 × 2 mm, smooth, pubescent. Seeds ovoid-tetragonal, ca. 1 × 0.75 mm, reddish brown, sides obscurely transversely furrowed; caruncle absent.



Euphorbia rosea Retz.

[Euphorbiaceae]

Vernacular name(s): Golapisiju (O); Rosy
Spurge (E).

Distribution: B-1, B-3

Description: Small prostrate glabrous with flexuous branches. Leaves opposite, obliquely obovate, oblanceolate-oblong or linear spatulate, crenulate in top portion, apex obtuse, coriaceous. Cyathia rosy, floral leaves apically crowded. Male florets bracteolate. Female florets laterally pendulous, stigma spatulate. Seeds keeled.

Euphorbia serpens H.B.K.

[Euphorbiaceae]

Vernacular name(s): Harihari (O);
Matted Sandmat (E).

Distribution: B-1, B-4

Description: Herbs, annual, 15–20 cm tall. Leaves opposite; stipules membranous, triangular, caducous; leaf blade oblong, gray-green pilose, base truncate or cordate, margin entire. Cyathia single, axillary; involucre turbinate to campanulate. Male flowers 3-5, usually not exserted. Female flower: exserted from involucre; ovary smooth, glabrous; styles free; stigma deeply 2-lobed. Capsule subglobose, smooth. Seeds oblong-ovoid, grey to brown.



Euphorbia thymifolia L.

[Euphorbiaceae]

Vernacular name(s): Chhota patra-siju (O); Chhoti dudhi (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate herb. Leaves opposite, oblong, margin often red on both sides, base of lamina red on midrib; stipules subulate, hairy. Cyathia axillary, solitary or few in clusters, green or pink. Capsule appressed hairy all over.



Evolvulus alsinoides (L.) L.

[Convolvulaceae]

Vernacular name(s): Bichhamalia (O); Sankhapuspi (H); Dwarf morning glory (E).

Distribution: B-1, B-3, B-4.

Description: Trailing herb; branches thinly or densely silky. Leaves linear, acute at both ends, densely appressed on both sides. Flowers blue, bluish-white, 1-3 terminating slender axillary peduncles. Capsule globose, 2-celled, 2-4 valved.

Evolvulus nummularius (L.) L.

[Covolvulaceae]

Vernacular name(s): Bichhamalia (O); Nimulwel (H), Roundleaf Bindweed (E).

Distribution B-1, B-2, B-3, B-4.

Description: Prostrate herb; branches trailing puberulous. Leaves glabrous, orbicular or broadly ovate, gland-punctate beneath. Flowers axillary, white, solitary; corolla funnel shaped. Capsule subglobose, single celled, 2-seeded.



Evovulus sericeus Sw.

[Covolvulaceae]

Vernacular name(s): Ghanti pruthika (O); Silver Dwarf Morning-glory(E).

Distribution: B-3

Description: Perennial herb with stems to 30 cm long, Leaves 0.5 - 2.5 cm long, alternate, narrowly oval with pointed tip and tapering base, Flower solitary on a very short stalk in the angle between leaf and stem, funnel-shaped, white with a faint 5-pointed star on the upper surface; Fruit a round, 4- seeded capsule 5 - 7 mm wide.



Foeniculuem vulgare L.

[Apiaceae]

Vernacular name(s): Pana Mahuri (O); Moti saunf (H); Sweet fennel (E).

Distribution: B-2, B-3.

Description: Highly aromatic biennial herb, erect, shining green, and grows to 2.5 m tall, with hollow stems. The leaves grow upto 40 cm long; they are finely dissected, with the ultimate segments filament-like. The flowers are produced in terminal compound umbels 5-15 cm wide, each umbel section with 20-50 tiny yellow flowers on short stalks. The fruit is a dry seed from 4-10 mm long.

Gaillardia aristata Pursh

[Asteraceae]

Vernacular name(s): Danti Surya shobha (O); Blanket flower (E).

Distribution: B-2.

Description: Perennials 20–80 cm. Leaves basal and cauline, blades oblanceolate to lanceolate, 5–15 cm × 5–30(–40) mm. Phyllaries 24–40+ ovate to lance-attenuate, 10–15+ mm. Ray florets (6–) 12–18+; corollas yellow or yellow/purple. Disc florets 60–120+; corollas usually purple or purple-tipped, Cypselae clavate (outer) to obpyramidal (inner), 2.5–6 mm, inserted at bases; pappi of 8 ovate to lanceolate, aristate.



Gaillardia grandiflora Hort.

[Asteraceae]

Vernacular name(s): Peeta Surya shobha (O); Blanket flower (E).

Distribution: B-2.

Description: Annuals 5–35(–60+) cm. Leaves cauline; blades linear, oblong, or spatulate, 1–5(–12) cm × 4–12(–35) mm, margins usually entire. Phyllaries 18–28+, narrowly triangular- to linear-attenuate, 6–14+ mm. Ray florets usually 8–14, corollas usually reddish to purplish proximally, yellow to orange distally. Disc florets 40–100+; corollas yellowish to purple or brown, often bicolored, tubes 0.8–1.2 mm, throats campanulate to urceolate. Cypselsae obpyramidal, 2–2.5 mm pappi of 7–8 deltate to lanceolate, aristate.



Glinus oppositifolius (L.) A.DC.

[Molluginaceae]

(Syn: *Mollugo spergula* L.)

Vernacular name(s): Pitasaga (O); Jima (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Small prostrate glabrous herb. Leaves in pseudo-whorls, lanceolate, glabrous. Flowers greenish or white, 1-several, axillary, long pedicelled. Capsule ellipsoid, 3-valved. Seeds many subreniform, brown, finely granulate.

Globba marantina L.

[Zingiberaceae]

Vernacular name(s): Peeta Hansa (O); Dancing girl (E).

Distribution: B-2.

Description: Erect rhizomatous herbs; stem to 50 cm high, usually solitary, stem slender. Leaves bifarious, to 20 x 5 cm, oblong-lanceolate. Spike terminal, to 10 cm long, often with bulbils towards the base. Flowers solitary in each bracts; calyx 5 mm long, funnel shaped, 3-lobed; corolla 14 mm long, yellow. Capsule 1 × 6 mm, oblong, glabrous, coarsely rugose.



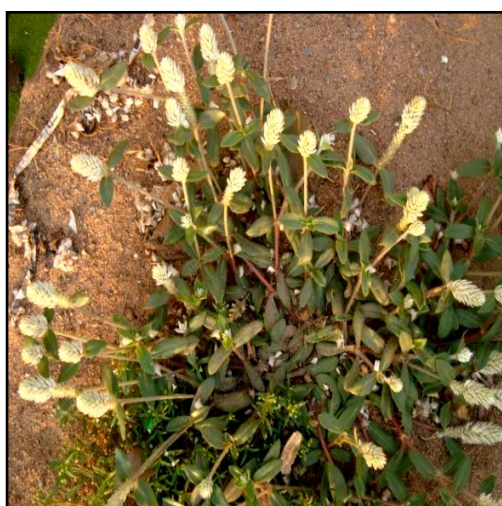
Gnaphalium polycaulon Pers.

[Asteraceae]

(Syn: *Gnaphalium indicum* auct. non L.)

Distribution: B-1, B-2, B-3, B-4.

Description: Woolly or softly cottony herb. Leaves narrow, oblong, apiculate. Heads small, heterogamous, in axillary clusters from the upper leaves and forming terminal spikes. Achenes minutely hispidulous; pappus hairs free.



Gomphrena celosioides Mart.

[Amaranthaceae]

Vernacular name(s): Hiragola (O); Diamond amaranth (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stem striate, white villous. Leaves narrowly oblong-elliptic, villous. Spikes sessile, whitish, subtended by a pair of sessile leaves; bracts deltoid ovate; bracteoles laterally compressed. Utricle compressed-pyriform.

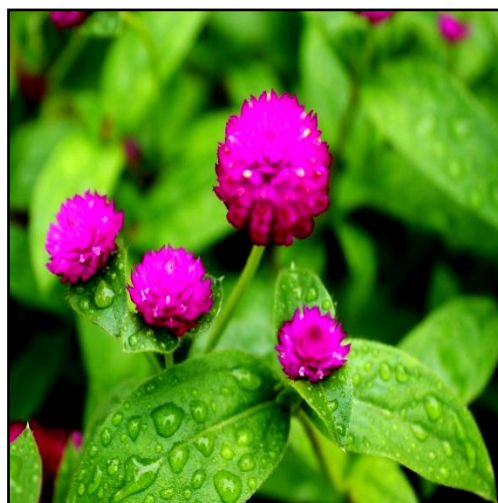
Gomphrena globosa L.

[Amaranthaceae]

Vernacular name(s): Ranga gola (O); Gul-e-makhmal (H); Globe Amaranth (E).

Distribution: B-2.

Description: Annual bedding plant grows 1-2 ft tall. Stem branches erect and stiff, has a bushy appearance. Leaves opposite, oblong, woolly-white when young, becoming sparsely white-hairy as they age. Flowers globular, magenta to white, consist of numerous individual flowers.



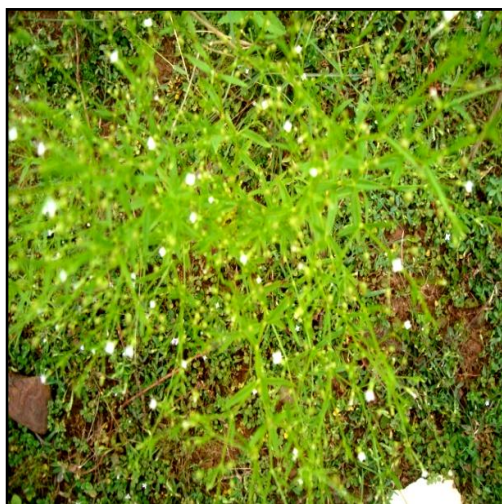
Grangea maderaspatana (L.) Poir.

[Asteraceae]

Vernacular name(s): Agnikumari (O); Mastaru (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Procumbent herb. Leaves oblong, pinnatifid, villous, cauline. Heads yellow, solitary, globose, shortly peduncled. Achenes stipitate, pale brown.



Hedyotis brachiata Miq. ex Hook.f.

[Rubiaceae]

Vernacular name(s): Gharapodia (O); Pit papra (H); Flat-top mille grains (E).

Distribution: B-1, B-3, B-4.

Description: Herbs, annual or perennial, at least weakly erect, to 15(-30) cm tall. Leaves subsessile to petiolate; petiole to 10 mm, glabrous; blade drying membranous, elliptic-oblong, lanceolate, or elliptic, 1-6 × 0.4-1.5 cm, glabrous. Flowers subsessile to shortly pedicellate. Calyx glabrous; hypanthium portion cupular to turbinate, included and positioned near base of corolla tube. Fruit capsular, turbinate to ellipsoid.

Hedyotis corymbosa (L.) Lam.

[Rubiaceae]

(Syn: *Oldenlandia corymbosa* L.)

Vernacular name(s): Gharapodia (O); Pit papra (H); Flat-top mille grains (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Diffuse, glabrous herb. Leaves linear-lanceolate. Flowers white, minute, paired, rarely 3-4 on the axillary peduncles. Capsule globose or slightly pyriform, somewhat didynamous, glabrous. Seeds (sub) trigonous, reticulate.



Hedyotis puberula (G.Don) Thw.

(Syn: *Oldenlandia umbellata* L.)

Vernacular name(s): Gharapodia (O); Pit papra (H); Flat-top mille grains (E).

Distribution: B-3.

Description: Diffuse herb, 5-20 cm long, pubescent; stems 6-8 ridged. Leaves 0.5-1.6 × 0.1-0.2 cm, sessile, linear, acute. Flowers white, small in 3-10 flowered umbels at the ends of branches; peduncles usually longer than the leaves. Calyx-lobes narrow. Capsule globose. Seeds oblong, obscurely angled.



Heliconia latispatha Benth.

[Heliconiaceae]

Vernacular name(s): Peeta nandana phula (O); Golden Lobster Claw (E).

Distribution: B-2.

Description: Plants 2-4 m, pseudostem well-developed. Leaves 3-5 per shoot, green, longest blade 75-150 × 18-33 cm. Inflorescences erect, to 45 cm; cincinnal bracts spirally arranged, 8-13 per inflorescence. Flowers 10-15 per cincinnus; perianth green, yellow, or orange with dark green sepal margins. Seed dark green, glabrous, sometimes sparsely puberulous. Drupes blue, 10-13 × 8-9 mm.

Heliconia rostrata Ruiz & Pavon

[Heliconiaceae]

Vernacular name(s): Rakta nandana phula (O); Hanging Lobster's Claw (E).

Distribution: B-2

Description: Plants 2-3.5 m, pseudostem well-developed. Leaves 2-6 per shoot, green, longest blade 70—200 × 15-40 cm. Inflorescences erect, to 60 cm; cincinnal bracts spirally arranged, 7--15 per inflorescence, middle bract with outer surface red and yellow and glabrous, 14-19.5 cm, 5-7 cm wide at base. Flowers 10-15 per cincinnus; perianth red yellow, nearly straight; sepal margins, fused, dark green, glabrous, sometimes sparsely puberulous. Drupes blue, 12-13 × 7-8mm.



Heliotropium indicum L.

[Boraginaceae]

Vernacular name(s): Hatisundhia (O);
Hati sura (H); Indian heliotrope (E).

Distribution: B-1, B-2, B-3, B-4

Description: Erect, coarse herb. Leaves ovate, rugose above with a few hairs, hairy beneath. Flowers white or lilac, in elongate, often circinate spikes. Nutlets combined in pairs, separating later, beaked, angled and with an empty cavity.



Heliotropium strigosum Willd.

[Boraginaceae]

Vernacular name(s): Hatisundhia(O);
Shanku Bristly Heliotrope (E).

Distribution: B-1, B-4.

Description: Herbs perennial, rarely annual, 15–30 cm tall. Leaves crowded; leaf blade linear-lanceolate, 3–10 × 1–1.5 mm, appressed strigose, margin usually revolute. Cymes scorpioid, slender, 2–6 cm; bracts 1–3 mm. Flowers sparse, unilateral. Calyx 2–3 mm; lobes lanceolate, sparsely strigose. Corolla white, tubular or funnelform, Fruit compressed globose, densely strigose-hirtellous, divided at maturity into 4 1-seeded.

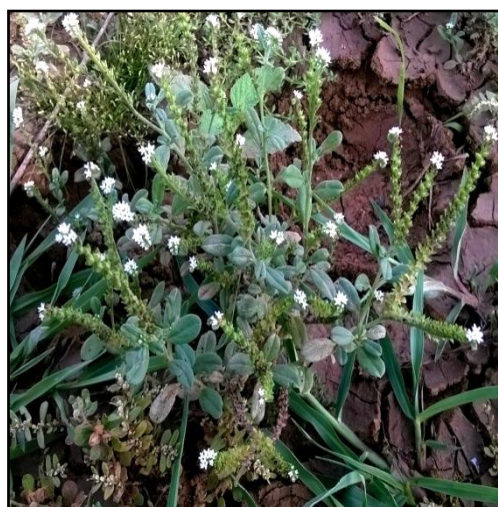
Heliotropium supinum L.

[Boraginaceae]

Vernacular name(s): Chhota
Hatisundhia (O); Dwarf Heliotrope (E).

Distribution: B-1, B-4.

Description: Prostrate softly densely hirsute or villous herb. Leaves elliptic or ovate, silky. Flowers white, in short, softly hirsute or villous, one sided spikes, lobes oblong or ovate, slightly connate half way up. Corolla broadly oblong. Nutlets ovoid strongly margined and enclosed in the villous calyx.



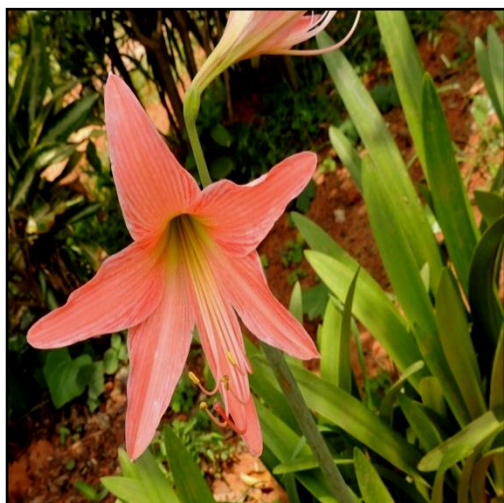
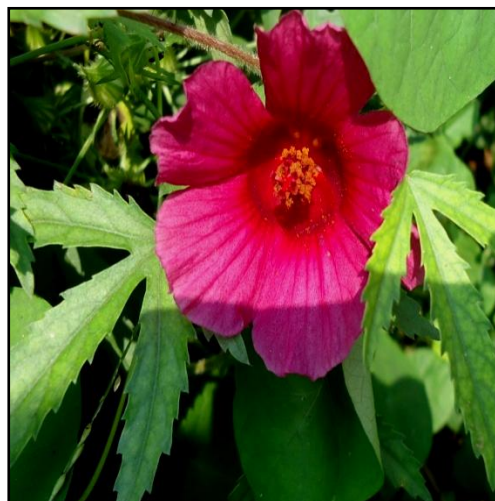
Hibiscus cannabinus L.

[Malvaceae]

Vernacular name(s): Kaunria (O);
Deccan hemp (E).

Distribution: B-1.

Description: Herbs annual or perennial, to 3 m tall, glabrous. Leaf 2-12 × 0.6-2 cm, base cordate or nearly rounded. Flowers solitary, axillary, nearly sessile. Epicalyx lobes 7-10, Calyx nearly campanulate. Corolla yellow with red center; petals oblong-ovate, ca. 6 cm. Capsule globose, ca. 1.5 cm in diam., densely spiny, apex shortly beaked. Seeds reniform, subglabrous.



Hippeastrum amaryllis (L.) Herb.

[Amaryllidaceae]

Vernacular name(s): Bilagnika (O);
Amaryllis (E);

Distribution: B-2.

Description: Bulbs 6–10 cm diam. Leaves 6–8, appearing after flowering, 50 × 3–5 cm. Scape to 1 m. Inflorescences 2–4-flowered; bracts 5 cm. Flowers slightly zygomorphic. Perianth reddish to orange, with whitish midstripe on adaxial surface of each outer tepal, tube 3 cm; outer tepals lanceolate to subrhombic, 12 cm or more, apex acuminate. Capsules ellipsoid to ovoid, 2 cm. Seeds black, compressed-globose or -subglobose.

Hippeastrum reginae (L.) Herb.

[Amaryllidaceae]

Vernacular name(s): Bilagnika (O);
Barbados-lily (E).

Distribution: B-2.

Description: Herbs, perennial, scapose, glabrous. Leaves few, basal; blade liguliform, fleshy, parallel-veined. Inflorescences umbellate, bracteate; bracts 2, scarious. Flowers spreading to slightly drooping, syntepalous; funnel form to campanulate, with minute corona reduced to small crown inserted on throat of tube. Tepals 6 in 2 whorls of 3, outer slightly shorter than inner. Fruits capsular, dehiscence loculicidal. Seeds few to many.



Hybanthus enneaspermus (L.) F.v. Muell.

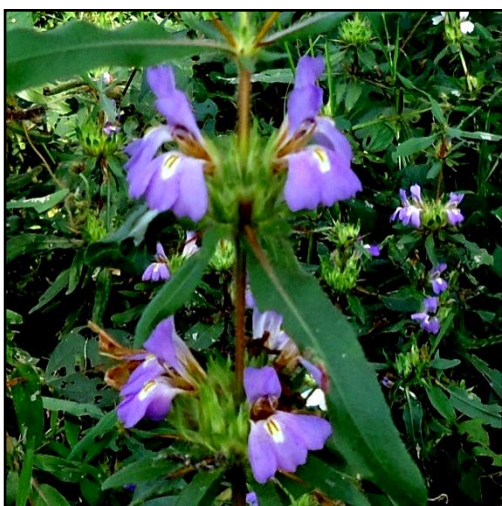
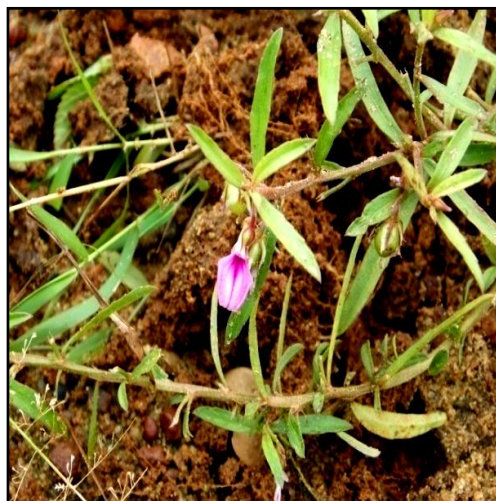
[Violaceae]

(**Syn:** *Ionidium suffruticosum* (L.) Ging. ex DC.)

Vernacular name(s): Madan mastaka (O); Ratanpuras (H); Spade flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect pubescent herb. Leaves linear-lanceolate. Flowers pink. Capsule subglobose. Seeds ellipsoid, obliquely truncate with distinct raphe.



Hygrophila auriculata Schumach.

[Acanthaceae]

Vernacular name(s): Koilikhia (O); Kokilankh (H); Marsh Barbel (E).

Distribution: B-1, B-3, B-4.

Description: Aquatic perennial herb, 1-2 m high. Stem erect, unbranched, hairy near swollen nodes. Leaves densely hairy, lance-like, stalkless, 10-15 cm long, occur in whorls of 6 at each node on the stem. Straight, yellow, 4 cm long spines are present in the axil of each leaf. Flowers 3 cm long, purple-blue occur in 4 pairs at each node.

Hyptis suaveolens (L.) Poit.

[Lamiaceae]

Vernacular name(s): Bana tulsi (O); Vilati tulsi (H); American mint (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect, perennial under shrub, 60-90 cm tall, hairy all over, stems 4-angled. Leaves ovate, densely hairy, irregularly toothed. Flowers pale blue, 0.8-1 cm long, in axillary and terminal whorls, often forming lax panicles. Calyx 4 mm long, glandular. Corolla 5 mm. Nutlets compressed, ovoid-oblong.



Impatiens balsamina L.

[Lamiaceae]

Vernacular name(s): Haragaura (O); Gul-mendi (H); Garden balsam (E).

Distribution: B-2

Description: An annual herb, stem freshy, cylindrical, glabrous or pubescent, slightly branched. Leaves alternate, lanceolate, base cuneate and decurrent, margin serrate, petiolate. Flowers pink or white in colour, pedicels 1-3, axillary, slender, pubescent. Sepals minute, ovate. Wings broad, lateral lobes rounded, terminal sessile, very large. Lip small, boat shaped, mucronate. Capsule ovoid-ellipsoid. Seed reticulate.



Indigofera linnaei Ali

[Fabaceae]

(Syn: Indigofera enneaphylla L.)

Vernacular name(s): Latahai (H); Birdsville indigo (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate herb. Leaves pinnate, sub-sessile, leaflets 5-7 (11), alternate, linear-oblongate, appressed hairy on both sides, silvery beneath. Flowers red, small, clustered, sub-sessile. Pods oblong, thinly silky, 2-seeded.

Indoneesiella echioides (L.) Sreemadh.

[Acanthaceae]

[Syn: Andrographis echioides (L.) Nees]

Vernacular name(s): Kanti Bhumi nimba (O); False Waterwillow (E).

Distribution: B-1, B-2, B-3, B-4

Description: Erect herb, stems and branches pubescent or sometimes villous. Leaves sessile, hispid, rarely cuneate. Flowers white or pale brown or purple spotted, sessile or lowest shortly pedicelled, erect on divaricate. Simple or branched racemes from all axils; racemes glandular-hairy. Capsule ellipsoid or ellipsoid oblong. Seeds rugose.



Justicia betonica L.

[Acanthaceae]

Vernacular name(s): Sweta sahachara (O); Hadpat (H); Squirrel Tail (E).

Distribution: B-3, B-4.

Description: Diffusely branched more or less decumbent subshrubs. Leaves opposite, 5-10 x 3.5-4 cm, ovate. Flowers in terminal spikes. Calyx 5-partite, to 5 mm long; segments linear-lanceolate. Corolla to 1.25 cm long, dull white, 2-lipped. Seeds 4, suborbicular, densely tuberculately rugose when wetted.



Justicia japonica Thunb.

[Acanthaceae]

Vernacular name(s): Patala sahachara (O); Hadpat (H); Squirrel Tail (E).

Distribution: B-2, B-3.

Description: Erect or decumbent herbs, branchlets strigose-hispid. Leaves to 2 x 1.5 cm, ovate or linear, lateral nerves 5-7 pairs; petiole to 2 mm long. Spike 4-8 cm, cylindrical; bracts and bracteoles ovate, 4 mm long. Corolla pink. Capsule pubescent.

Justicia quinqueangularis Koen. ex Roxb.

[Acanthaceae]

Vernacular name(s): Patala sahachara (O); Hadpat (H); Squirrel Tail (E).

Distribution: B-1, B-4.

Description: Decumbent herbs. Leaves opposite, 1.5-3 x 0.2-0.4 cm, scabrous, linear-oblong or linear-lanceolate. Flowers pink in terminal up to 7 cm long spikes. Corolla 8 mm long, glabrous; upper lip 4 mm long, 2-fid; lower lip 5 mm long and broad, sub orbicular, minutely 3-lobed. Capsule 8 mm long, oblong, acutely pointed at apex, glabrous.



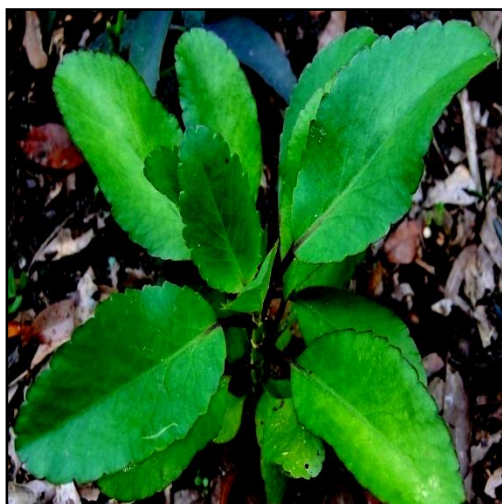
Kalanchoe blossfeldiana Poelln

[Crassulaceae]

Vernacular name(s): Amarapoi (O);
Zakhm-haiyal (H); Miracle leaf (E).

Distribution: B-2

Description: Glabrous herb up to 1m. Leaf blades elliptic to ovate or oblong-spatulate, 3-10 cm, margins crenate or almost entire, apex obtuse or nearly acute. Cymes dense, compound, glabrous, not glandular. Pedicels 0.5-2 cm. Flowers fragrant. Sepals ascending, triangular-lanceolate, 4-10 mm. Corolla scarlet, cylindric, tube ca. 8 mm, lobes wide-spreading, ca. 4 mm.



Kalanchoe pinnata (Lam.) Pers.

[Crassulaceae]

(**Syn:** *Bryophyllum calycinum* Salisb.)

Vernacular name(s): Amarapoi (O);
Zakhm-haiyal (H); Miracle leaf (E).

Distribution: B-2.

Description: Glabrous succulent herb. Leaves simple, opposite, oblong. Flowers pale greenish and purple in lax paniced cymes. Corolla nearly included, sub-globose and constricted in the middle, tip reddish purple. Follicles many seeded.

Laportea interrupta (L.) Chew

[Urticaceae]

[**Syn:** *Fleurya interrupta* (L.) Gaud.]

Vernacular name(s): Ghodabichuati (O);
Lal-bichua (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb with stinging hairs. Leaves ovate, coarsely dentate-serrate, thinly hispid above; stipule 2-fid. Flowers clustered on axillary spikes; spikes long and lax, with few erect hairs at the base. Ripe achenes exerted, compressed.



Leucas aspera (Willd.) Link

[Lamiaceae]

Vernacular name(s): Gaisa (O); Chota halkusa (H).

Distribution: B-3, B-4.

Description: Erect or diffuse herb; stems thinly hairy. Leaves oblanceolate, crenate-serrate, thinly pubescent. Whorls terminal and axillary; bracts numerous, linear, hispid ciliate, subspinulose tipped. Flower white. Nutlets ovoid, brown.



Leucas cephalotes (Roth) Spreng.

[Lamiaceae]

Vernacular name(s): Bada gayasa (O); Bishkhapru (H); Head Leucas (E).

Distribution: B-1, B-4.

Description: Annual herb. Stems erect, unbranched or with few branches. Leaves narrow, oblong-elliptic, cuneate, nearly entire to slightly toothed. Flowers white, borne in 1-2 distant spherical dense whorls on branches.

Leucas indica (L.) R.Br. ex Vatke

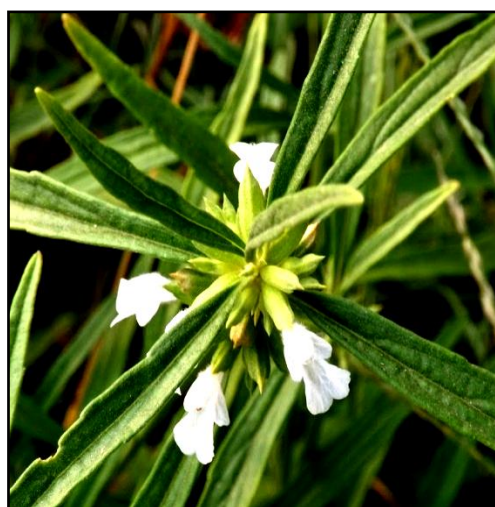
[Lamiaceae]

[**Syn:** *Leucas linifolia* (Roth) Spreng.)]

Vernacular name(s): Gayasa (O); Kumbha (H).

Distribution: B-4.

Description: Erect herb; stems pubescent. Leaves linear-lanceolate, minutely pubescent both sides. Whorls dense, axillary and terminal. Flowers white; bracts linear setaceous. Nutlets dark brown, oblong, somewhat triquetrous.



Lindernia ciliata (Colsm.) Pennell

[Scrophulariaceae]

Vernacular name(s): Kheta kura (O);
Fringed Lindernia (E).

Distribution: B-1, B-3.

Description: An annual, broad-leaved, prostrate, stoloniferous herb, upto 13 cm high. Oppositely arranged simple leaves are nearly stalkless. Leaf blade oblong to lanceolate-oblong, 0.7-4.5 x 0.3-1.2 cm. Inflorescences, in racemes up to 3 cm long. Flowers light purple or white, about 0.5 cm. Capsule cylindrical.



Lindernia crustacea (L.) F.v. Muell.

[Scrophulariaceae]

Vernacular name(s): Khetakura (O);
Malaysian Lindernia (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate, diffusely branched herbs, rooting at nodes; stem 4-angled, slightly winged on angles. Leaves ovate, base truncate, margin serrate, apex subacute, penninerved. Flowers axillary, solitary or 2-per node on terminal racemes. Seeds minute, many.

Lippia javanica (Burm.f.) Spreng.

[Verbenaceae]

Vernacular name(s): Mistagandha (O);
Lemon Bush (E).

Distribution: B-4.

Description: Aromatic undershrub, erect or procumbent. Leaves lanceolate, oblong or ovate, closely crenulate or crenate-serrate, acute, thinly hairy and punctate above. Flowers pink, scented, in capitate spikes. Corolla hairy, throat yellow, upper lip with small rounded lobes much shorter than the lower lip which has a shovel shaped blade. Fruit globose, ultimately dry splitting into 2 pyrenes.



Lobelia alsinoides Lam.

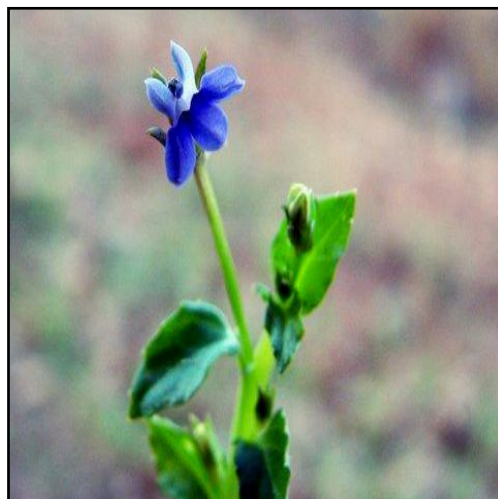
[Lobeliaceae]

(Syn: *Lobelia trigona* Roxb.)

Vernacular name(s): Painmali (O);
Chick weed lobelia (E).

Distribution: B-1, B-4.

Description: Small glabrous herb; stems 3-angled and winged. Leaves sessile, broadly ovate, glabrous. Flowers white or blue, axillary. Capsule obconical.



Lobularia maritima (L.) Desv.

[Brassicaceae]

Vernacular name(s): Sadmika (O);
Alyssum maritimum (E).

Distribution: B-3

Description: Perennial herbs, 10-35 cm. Leaves linear or narrowly oblanceolate, 20-40 mm long, 3-10 mm broad, sessile, entire. Racemes 20-30-flowered, lax and upto 20 cm long in fruit. Flowers ca. 5 mm across, white or pinkish, usually ebracteate. Petals ca. 4 mm long, 2.5 mm broad. Siliculae ovate oblongish, or obovate, 2.5-3.5 (-4) mm long, 2-2.5 mm broad. Seed 1 in each locule ca. 1.5 mm in diam, suborbicular-compressed with an obscure narrow wing, reddish-brown.

Ludwigia perennis L.

[Onagraceae]

(Syn: *Ludwigia parviflora* Roxb.)

Vernacular name(s): Latkera (O);
Perennial water prime rose (E).

Distribution: B-1, B-3, B-4.

Description: Herb, glabrous. Leaves lanceolate, tapering at the base into a short petiole. Flowers small, yellow, solitary axillary, 4-merous. Capsule very short oblong, inflated, glabrous. Seeds pluriseriate in each cell, brown.



Malachra capitata (L.) L.

[Malvaceae]

Vernacular name(s): Mrudurnnaka (O); Vijyanti bhindi (H); Malva de caballo (E).

Distribution: B-3.

Description: Suffruticose herb 20-60cm. Leaves orbicular or ovate, cordate or subcordate. Flowers subsessile. Calyx campanulate. Corolla yellow. Petals obovate. Schizocarp globose, not exceeding calyx, mericarps 5. Seeds obovoid, trigonous.



Maranta arundinacea L.

[Marantaceae]

Vernacular name(s): Palua (O); Palak (H); Arrowroot (E)

Distribution: B-2.

Description: Herbs 30-130 cm tall. Rhizomes sympodial, cylindrical, fleshy, starchy. Basal leaves 4-8; cauline leaves 1-8; leaf blade ovate-oblong, 3.5-35 × 3-11 cm, Inflorescences several per leafy shoot; Corolla white; tube curved, 1.2-1.4 cm, Capsule green or tinged reddish brown, ellipsoid, 7-8 × 4-5 mm, Seeds brown, rugose; aril basal, white, 2-lobed.

Martynia annua L.

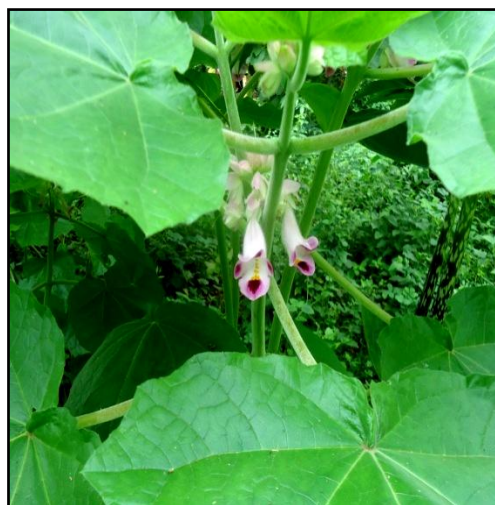
[Martyniaceae]

(Syn: *Martynia diandra* Gloxin)

Vernacular name(s): Baghnakhi (O & H); Tiger claw (E).

Distribution: B-4.

Description: Undershrub. Leaves broadly ovate or deltoid. Racemes 7-12 flowered. Flowers drooping, purple with yellow throat, glandular hairy. Fruit beaked with a fleshy, deciduous exocarp and a woody persistent endocarp. Seeds black.



Mazus pumilus (Brum.f.) Steenis

[Scrophulariaceae]

(Syn: *Majus rugosus* Lour.)

Vernacular name(s): Nagamastaka (O);
Japaness mazus (E).

Distribution: B-2, B-4.

Description: Small herb, 25-45cm. branches pubescent and erect scapes. Leaves mostly radical, spatulate, sinuate or dentate, obtuse, tapering into a short petiole. Flowers bluish or white, in terminal, subsecund racemes. Capsule subglobose.



Mecardonia procumbens (Mill.) Small

[Scrophulariaceae]

Distribution: B-1, B-3, B-4.

Description: Glabrous diffuse herb. Leaves ovate, crenate-serrate or serrate, obtuse. Flowers yellow, axillary, solitary on slender pedicels; bracteoles at the base of pedicels, oblanceolate or oblong-spathulate. Capsule oblong or ellipsoid.

Melochia corchorifolia L.

[Sterculiaceae]

Vernacular name(s): Pitapuri (O);
Chitrabee (H); Chocolate weed (E).

Distribution: B-3, B-4.

Description: Erect branched herbs. Flowers pink with a greenish-yellow center, 2-4 mm long, obovate, blunt or flat at tip. Leaves ovate-oblong, heart-shaped or narrowed at base, sparsely hairy on nerves on both sides. Capsule 3-4 mm, sub-spherical, 5-valved. Seeds angular or plano-convex, dark brown or greyish.



Mentha arvensis L.

[Lamiaceae]

Vernacular name(s): Podina (O);
Pudina (H); Field mint (E).

Distribution: B-2.

Description: Perennial with white creeping rhizomes. Leaves ovate to ovate-elliptic, 2-5 × 1.2-2 cm, serrulate to serrate, acute, cuneate. Verticillasters all distant, many-flowered, sub-globose, c. 1.5 cm in diameter. Calyx tubular-campanulate, 2-3 mm, fruiting calyx scarcely enlarging, green, brown or pinkish. Corolla white or pale lilac, 4-4.5 mm. Nutlets 4, globose ca. 1 × 1 mm, smooth, rounded.



Mentha piperita L.

[Lamiaceae]

Vernacular name(s): Peppermint (O, H & E).

Distribution: B-2.

Description: Leaf 2.5-3 × 0.8-2 cm, glabrous. Verticillasters in cylindrical terminal spikes, interrupted at base; Calyx tubular, tinged purple, puberulent or subglabrous, glandular outside; teeth 5, linear-subulate, ca. 1 mm, ciliate. Corolla white, tinged red on lobes, ca. 4 mm. Nutlets brown, obovoid, ca. 0.7 mm, apex glandular.

Mentha spicata L.

[Lamiaceae]

Vernacular name(s): Podina (O);
Pudina (H); Field Mint (E).

Distribution: B-2.

Description: Herbs stoloniferous, 40-130 cm. Leaves sessile or subsessile, ovate-oblong to oblong-lanceolate. Verticillasters in cylindrical terminal spikes. Calyx campanulate. Corolla purplish, ca. 4 mm, glabrous, tube ca. 2 mm; lobes subequal, apex emarginate.



Merremia hederacea (Burm.f.) Hall.f.

[Convolvulaceae]

Vernacular name(s): Bruki Pravatshova (O); Kidney leaf morning glory (E).

Distribution: B-4.

Description: Herbs perennial, prostrate; tuberculate. Petiolate, leaf blade reniform to broadly ovate, 0.5–3.5 × 0.6–3.5 mm, glabrous or sparsely appressed pilose. Inflorescences subsessile, 1(–3)-flowered; Sepals obovate to circular or subquadrate. Corolla yellow, tubular-campanulate. Capsule enclosed by persistent calyx, brown-black, globular. Seeds greyish brown, glabrous.



Micrococca mercurialis (L.) Benth.

[Euphorbiaceae]

(Syn: *Claoxylon mercuriale* Thw.)

Vernacular name(s): Pratanusa (O); Mercuy dough wood (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stem pale, subglabrous. Leaves ovate or rhomboid, glabrous. Racemes numerous, capillary, with distant clusters of minute male and female flowers. Capsule deeply 3-lobed, depressed, pilose. Seeds pitted or verrucose.

Mimosa pudica L.

[Mimosaceae]

Vernacular name(s): Lajakuli (O); Chui-mui (H); Sensitive plant (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb; stem weakly prickly. Leaves pinnae 4, digitate; leaflets, linear, glabrous above, ciliate beneath and on margins. Heads pink. Pods clustered, flat, slightly undulate, jointed, with weak prickles on sutures. Seeds 2-5, ovoid.



Mirabilis jalapa L.

[Nyctaginaceae]

Vernacular name(s): Rangani (O); Sandhyarani (H); Four o'clock plant (E).

Distribution: B-2.

Description: Herbs up to 1.5 m tall. Leaves ovate, 5-12 × 2-6 cm, acuminate, puberulous. Flowers subsessile, in clusters of 4-5; pedicel ca. 2 mm long. Perianth tube 2.5-3(-3.5) cm long, flower pink, red white or many coloured. Anthocarp 9 mm long, ovoid, 5-ribbed, black, tuberculate. Nut subglobose, ca. 7 mm long.



Mitracarpus villosus (Sw.) DC.

[Rubiaceae]

Vernacular name(s): Abrutaphala (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Erect, pubescent herb; stem 4-angled. Leaves sessile, ovate-lanceolate, pubescent, rounded. Flowers white, small, in axillary fascicles; bracteoles filiform. Capsule globose, circumscissile. Seeds minute, 4-furrowed on one side.

Mollugo pentaphylla L.

[Molluginaceae]

Vernacular name(s): Pitasaga (O); Jharasi (H); Mollugo (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Annual weed. Stem less than a foot tall, branches slender, hairless. Leaves 1.5-3 cm in length, 3-5 mm in width, whorled or opposite, usually linear lance-like, and narrowed at both ends. Compound cymes, slender and short stalks.



Murdania nodiflora (L.) Brenan

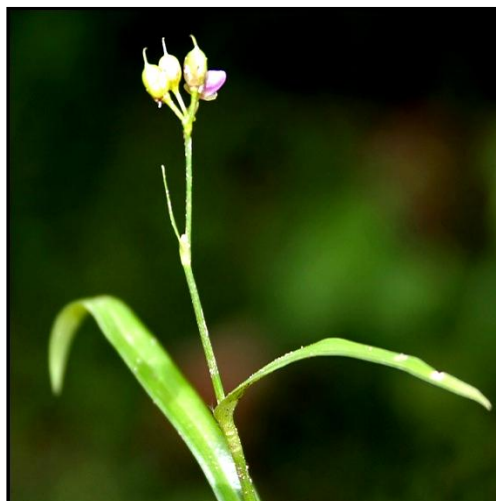
[Commelinaceae]

[Syn: *Aneilema nudiflorum* (L.) R. Br.]

Vernacular name(s): Nagna Shymashova (O); Naked-stem-Dew Flower (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs annual. Leaves nearly all cauline, sometimes 1 or 2 basal. Cincinni several, in terminal panicles, or solitary, with several densely arranged flowers; bracts caducous; pedicels slender, straight, 3–5 mm. Sepals ovate-elliptic, Petals purple, obovate-orbicular.



Murdannia spirata (L.) Brueck.

[Commelinaceae]

Vernacular name(s): Sisira puspa (O); Asiatic Dew flower (E).

Distribution: B-1, B-3, B-4.

Description: Small annual herb. Stem erect rooting at lower nodes. Leaves alternate, stalkless, 1-3 cm long, lower ones are linear-lance shaped, upper ones oblong, heart-shaped, stem-clasping. Flowers blue, borne in branched panicles.

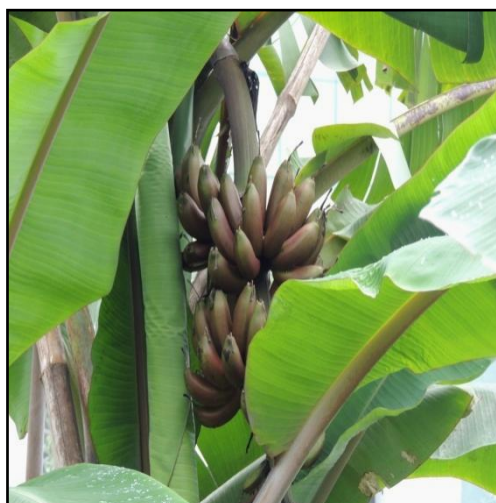
Musa acuminata Colla var. **rubra**

[Musaceae]

Vernacular name(s): Nali Kadali (O); Kela (H); Banana (E).

Distribution: B-2.

Description: Pseudostems green with black blotches, ca. 4.8 m. Petiole ca. 80 cm, margin erect or spreading and basally leaf blade 1.9-2.3 m × 50-70 cm, Inflorescence subhorizontal or vertically reflexed. Bracts bright red to dark violet. Male flowers ca. 20 per bract, in 2 rows. Compound tepal white or cream, lemon yellow at apex, 3.5-4 cm, Infructescence ca. 1.2 m; peduncle to 70 × ca. 4 cm, white setose. Berries incurved, green to yellow-green, 5-angled when young. Seeds absent.



Musa paradisiaca L.

[Musaceae]

(Syn: *Musa sapientum* L.)

Vernacular name(s): Kadali (O); Kela (H); Banana (E).

Distribution: B-2.

Description: Pseudostem 2.4-5 m. Leaves oblong, 1.2-1.5 m. Spike soon decurved and finally drooping. Lowest bracts with numerous 2-seriate female or bisexual greenish or yellowish flowers, ca. 3.7 cm long, above these the bracts containing male flowers only or the terminal ones are empty. Connate part of the perianth 5 toothed. Fruit oblong.



Ocimum canum Sims.

[Lamiaceae]

Vernacular name(s): Ganga tulasi (O); Kala tulsi (H); Hoary basil (E).

Distribution: B-4.

Description: Herb, 20-45 cm, erect, aromatic. Leaves ovate or elliptic-lanceolate or rhomboid, entire or serrate. Flowers white or pale pink, in distant 6 flowered whorls, in 6-20 cm long terminal racemes. Calyx 2.5-4.3 mm long. Corolla white, glabrescent. Nutlets oblong-ellipsoid.

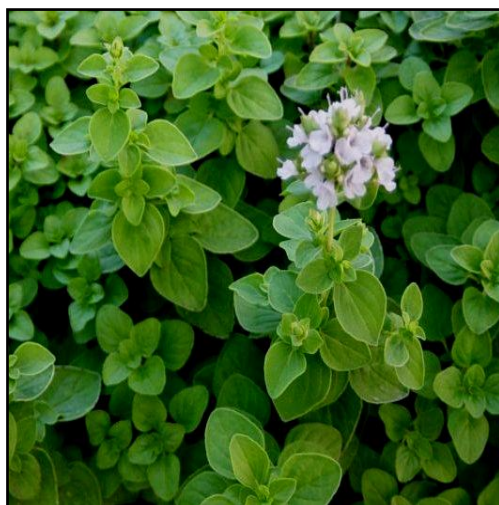
Origanum majorana L.

(Syn: *Majorana hortensis* Moench)

Vernacular name(s): Marua (O & H); Majoram (E).

Distribution: B-2.

Description: Rhizomes oblique, more or less woody. Leaf blade ovate to oblongovate, margin entire or remotely serrulate. Spikes oblong, elongated in fruit; floral leaves mostly sessile, purplish; bracts green or purple. Calyx minutely hispid or subglabrous; teeth triangular. Corolla purple-red to white, tubular-campanulate. Nutlets brown.



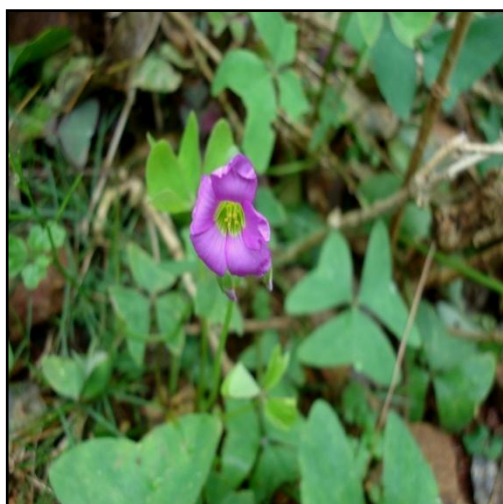
Oxalis corniculata L.

[Oxalidaceae]

Vernacular name(s): Ambiliti (O); Chukutri-pati (H); Indian sorrel (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Procumbent herb. Stem creeping, rooting at nodes. Leaves alternate; leaflets subsessile, obovate, apex emarginated or deeply cordate. Flowers yellow, in 2-8 flowered pseudo-umbels. Capsules narrowly oblong, abruptly tapering.



Oxalis debilis Kunth

[Oxalidaceae]

Vernacular name(s): Ambiliti (O); Chukutri-pati (H); Large-Flowered Pink Sorrel (E).

Distribution: B-2.

Description: Acaulescent, glabrous herb. Leaves radical; leaflets subsessile, broadly obovate, widely shallowly emarginate with oblique, obtuse lobes. Flowers purplish, in few flowered umbels.

Oxalis triangularis A.St.-Hil.

[Oxalidaceae]

Vernacular name(s): Ambiliti (O); Chukutri-pati (H); Large-Flowered Pink Sorrel (E).

Distribution: B-2.

Description: Perennial, 20-70 cm tall. Leaves basal, rarely absent at flowering petiole 12–20 cm; leaflets 3, dark purple, obtriangular to obovate-triangular, (20–)30–50(–60) mm. Inflorescences umbelliform cymes, (1–)2–5(–9)-flowered. Flowers heterostylous; petals white to pinkish or pale purple, 15–22 mm. Capsules ovoid-ellipsoid, 12–18 mm, glabrous.



Panadnus amaryllifolius Roxb.

[Pandanaceae]

Vernacular name(s): Khiripatra (O); Annapurna (O, H); Fragrant pandanus (E).

Distribution: B-2.

Description: Herbs evergreen. Leaves 25-75 × 2-5 cm, leaves broadly linear. Female inflorescence unknown; male inflorescence probably pendent, to 60 cm; spikes cylindric, flat staminal phalanges; stamens mostly 3-6 per phalange; anthers oblong, apex bluntly convex.



Parthenium hysterophorus L.

[Asteraceae]

Vernacular name(s): Gajaraghasa (O); Gajjar ghas (H); Carrot grass (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Pubescent herb. Leaves bipinnatifid, oblong-obovate. Panicles terminal, lax, dichotomous. Heads white, heterogamous. Achenes compressed; pappus of 2, strongly reflexed awns running parallel to the angles of the achene.

Peperomia pellucida (L.) Kunth.

[Piperaceae]

Vernacular name(s): Ghusuri pana (O); Shiny Bush (E).

Distribution: B-1, B-3, B-4.

Description: Herb. Leaves glabrous, broadly ovate. Spikes slender, leaf-opposed, glabrous; flower distant, sunk in rachis with minute peltate bracts. Fruit globose, marked with 10 vertical ridges and minute transverse very fine raised lines.



Peristrophe paniculata (Forssk.)

Brummitt

[Acanthaceae]

[**Syn:** *Peristrophe bicalyculata* (Retz.) Nees]

Vernacular name(s): Sroopatica (O); Atrilal (H); Paniced folding (E).

Distribution: B-1, B-3, B-4

Description: Herb; stems 6-angled, hispid or hairy. Leaves pubescent, ovate, setaceous bracts. Flowers small, pinkish with maroon throat, in copiously branched, lax panicles. Corolla 2-lipped. Capsule oblong, compressed, beaked.



Persicaria virginiana (L.) Gaertn.

[Polygonaceae]

Vernacular name(s): Granthi gulma (O); Knotweed (E).

Distribution: B-2

Description: Perennial, 4.5-6(-13) dm; rhizomatous. Leaves ocrea brownish hyaline, cylindrical, 10-20 mm, blade 5-17.5 × 2-10 cm. Inflorescences (50-)100-350 × 7-15 mm; pedicellate, Flowers 1-3 per ocreate fascicle. Perianth white, greenish white, or rarely pink, tepals elliptic to obovate, 2.5-3.5 mm. Achenes included except for apex and styles, brown to dark brown, biconvex, 3.5-4 × 2-2.8 mm, dull to shiny, smooth to rugose.

Petunia hybrida Juss.

[Solanaceae]

Vernacular name(s): Petunia (O, H & E)

Distribution: B-2.

Description: Herbs annual, 30-60 cm tall, glandular hairy. Leaves short petiolate or sessile; leaf blade ovate, 3-8 × 1.5-4.5 cm, base cuneate, margin entire, apex acute. Pedicel 3-5 cm. Calyx deeply parted, 1-1.8 cm × 3.5 mm; lobes linear, 1-1.5 cm × 3.5 mm, obtuse. Corolla white, red, yellow, or purple, sometimes fragrant, funnelform, 5-7 cm, limb spreading. Capsules conical, ca. 1 cm. Seeds subglobose, ca. 0.5 mm in diam.



Phaulopsis imbricata (Forssk.) Sw.

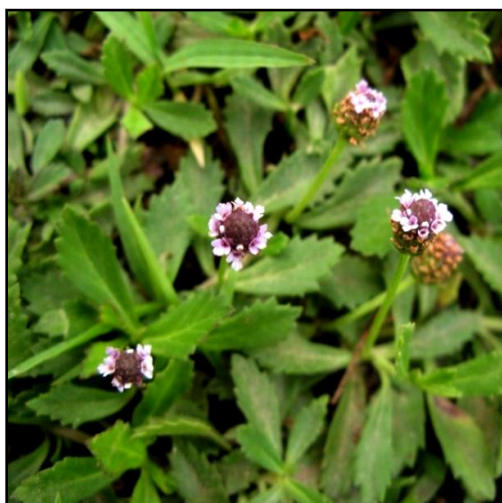
[Acanthaceae]

(Syn: *Phaulopsis parviflora* Willd.)

Vernacular name(s): Kankata phula (O); Himalayan Ruellia (E).

Distribution: B-3, B-4.

Description: Herb, stem spreading hairy or glandular-hairy. Leaves elliptic or ovate, in unequal pairs, thinly hairy and lineolate. Spikes glandular-hairy; bracts broadly ovate or reniform, pubescent, margin ciliate. Capsule clavate. Seeds 4.



Phyla nodiflora (L.) Greene

[Verbenaceae]

Vernacular name(s): Jala Pippali (O); Turkey tangle fogfruit (E)

Distribution: B-4

Description: Perennial, prostrate herb. Leaves oblanceolate, obovate to spatulate, 5-40 mm long, 4-20 mm broad, serrate above, Spikes 1-4.5 cm long, 6-8 mm broad, solitary, axillary, peduncled, appressedly pubescent to glabrous. Flowers very small, white, rarely pinkish. Calyx flattened, hyaline-membranous. Corolla slightly exceeding the bracts, unequally 4-lobed with spreading lobes. Fruit ovate, ca. 1.6 mm long, subcompressed, 1-seeded pyrenes.

Phyllanthus fraternus Webster

[Euphorbiaceae]

Vernacular name(s): Bari-aenla(O); Kanocha (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Small annual herb, branches angled, leaf pinnate, leaflets sessile. Flowers small, occur in the lower side of leaf rachis. Fruit small globose.



Phyllanthus virgatus Forst.f.

[Euphorbiaceae]

(Syn: *Phyllanthus simplex* Retz.)

Vernacular name(s): Bhui aenla (O).

Distribution: B-1, B-3, B-4.

Description: Herb with slender branches; stem terete, glabrous. Leaves subsessile, linear, beneath glaucous. Flowers minute from an axillary cluster of minute bracts. Capsule depressed-globose, smooth, glabrous. Seeds smooth.



Physalis longifolia Nutt. var **longifolia**

[Solanaceae]

Vernacular name(s): Lamba tipai (O); Long-Leaved Ground-Cherry(E).

Distribution: B-3

Description: A small herb up to 90 cm tall. Leaves alternate, medium to dark green, lance-elliptic, 1 to 5 inches long, upto 3 inches wide, around calyx has 5 pointed lobes. Flowers are ½ to ¾ inch across, bell-shaped with 5 shallow lobes, pale yellow with darker yellowish to greenish to purple-brown spots on the inside at the base of the throat. Fruit is a green berry that turns yellow when ripe.

Physalis minima L.

[Solanaceae]

Vernacular name(s): Tipai (O); Tulati pati (H); Sunberry (E).

Distribution: B-4.

Description: Herb; stems pubescent or glabrous. Leaves ovate, membranous, glabrous. Flowers small, yellow, often with purplish brown spots at the base within, solitary, axillary. Berry globose, enveloped in bladder-like calyx.



***Pilea microphylla* (L.) Liebm.**

[Urticaceae]

Vernacular name(s): Baruda gachha (O); Gun powder plant (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs glabrous, monoecious. Leaf blade abaxially pale green, adaxially green, obovate or spatulate, unequal in size, 2-7 × 1.5-3 mm, succulent. Inflorescences androgynous, compactly cymose-capitate; peduncle 1.5-6 mm, sometimes sessile; glomerules few flowered. Male flowers pedicellate, ca. 0.7 mm; perianth lobes ovate. Female perianth lobes subequal, oblong, longer lobe subequal to achene. Achene ovoid, ca. 0.4 mm, compressed, smooth, enclosed by persistent perianth.



***Plectranthus amboinicus* (Lour.) Spreng**

[Lamiaceae]

Vernacular name(s): Juani (O); Azoin (H);

Distribution: B-2.

Description: Perennial herb 30-95 cm high, fleshy and highly aromatic. Leaves simple, thick and fleshy, light green with opposite leaf arrangement 2.5 – 3 cm long 10 – 20 flowers are arranged in a verticillaster. Inflorescence 10 – 20 cm long. Calyx campanulate. Fruits are smooth nutlets, pale brown in colour.

***Plectranthus barbatus* Andr.**

[Lamiaceae]

Distribution: B-2.

Description: Perennial herb. Leaves ovate, crenulate to serrulate, thickish in texture, 4-8 × 2-4.5 cm. Verticillasters ca. 8-flowered, forming spike-like racemes, ca. 10-20 cm; inflorescence axis glandular villous. Calyx ca. 5 mm in flower. Corolla bluish-purple or white, to ca. 2 cm, often red-gland-dotted. Nutlets dark brown, smooth ovoid-spherical ca. 1.5 × 1.5 mm.



Plectranthus scutellarioides (L.) R.Br.

[Lamiaceae]

Distribution: B-2.

Description: Herbs erect or ascending. Leaf blade ovate, 4-12.5 × 2.5-9 cm, membranous, yellow, dark red, purple, or green, puberulent, sparsely red-brown margin crenate-serrate or crenate, apex obtuse to short acuminate. Panicles 5-10(-25) × 3-5(-8) cm, puberulent; verticillasters many flowered, ca. 1.5 cm in diam. Corolla purple to blue, 0.8-1.3 cm, puberulent, tube abruptly recurved, throat to 2.5 mm wide, upper lip erect. Nutlets brown, broadly ovoid or globose, 1-1.2 mm, flattened, shiny.



Plumbago indica L.

[Plumbaginaceae]

(Syn: *Plumbago rosea* L.)

Vernacular name(s): Rakta chitaparu (O); Lal chita (H);

Distribution: B-2, B-4.

Botanical description: Undershrub; stems terete, glabrous, striate. Leaves ovate, glabrous. Flowers red, in axillary and terminal elongate, lax racemes. Capsule oblong.

Polygala arvensis L.

[Polygalaceae]

Vernacular name(s): Mirdoi (H); Field Milkwort (E).

Distribution: B-3. B-4.

Description: Prostrate herb, erect rising stems. Leaves obovate, elliptic, inverted lance-shaped or circular. Flowers tiny, yellow, borne on 4-8-flowered, 1 cm long racemes. Capsule ovoid, upto 4 mm.



Polygonum barbatum L.

[Polygonaceae]

Distribution: B-3, B-4.

Description: Erect or prostrate simple-branched, annual, herb. Stem glabrous, lineolate-canaliculate. Leaves linear to linear-lanceolate, acuminate, glabrous except margin, midrib and veins ciliate, sessile to subsessile. Inflorescence many flowered, branched raceme with 1-6 spikes in each raceme. Flowers white.



Portulaca oleracea L. var. oleracea

[Portulacaceae]

Vernacular name(s): Bada balibalua (O); Khursa (H); Purselane (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect or prostrate herb. Leaves obovate, alternate, glabrous, fleshy. Flowers sessile, yellow, solitary or 2-3 in a capitulum, surrounded by long bracteoles and inconspicuous hairs. Seeds minutely tubercled, brown.

Portulaca pilosa L. subsp. grandiflora

(Hook.) Geesink

[Portulacaceae]

Vernacular name(s): Table golapa (O).

Distribution: B-2.

Description: Herbs annual or perennial, 5-20 cm. Leaves alternate; petiole absent; leaf blade terete-linear or subulate-lanceolate, 10-20 × 1-4 mm, apex acute. Flowers more than ca. 2 cm in diam. Sepals oblong. Petals 5, red-purple, broadly obovate. Capsule glossy straw colored apically, cylindrical-ovoid, ca. 3 × 2.5 mm. Seeds black, with very slight purplish iridescence when mature, 0.5-0.7 mm.



Portulaca quadrifida L.

[Portulacaceae]

Vernacular name(s): Kheta tandula (O).

Distribution: B-1, B-2, B-3, B-4.

Description: Herbs annual. Leaves opposite; petiole absent; leaf blade flat, ovate, obovate, or ovate-elliptic, 4-8 × 2-5 mm. Flowers solitary, surrounded by involucre of 4 or 5 bracts, white pilose. Sepals obovate-oblong, 2.5-3 mm, membranous, veined. Petals 4, yellow, oblong or broadly elliptic, 3-6 mm. Capsule globose, ca. 2.5 mm, pericarp membranous. Seeds gray, subglobose, laterally compressed, minute, muriculate.



Portulaca umbraticola Kunth

[Portulacaceae]

Vernacular name(s): Table golapa (O).

Distribution: B-2

Description: Annual herb 5-30 cm. Leaf blades obovate, spatulate, or sometimes lanceolate, flattened, 10-35 × 2-15 mm, apex rounded to truncate; involucrelike leaves 4-5. Flowers 8-15 mm diam. Petals yellow or yellow tipped with red or copper, spatulate or obovate, 5-10 × 3-6 mm. Capsules obovoid or turbinata, 3-5 mm diam. Seeds gray, round or elongate, flattened, 0.5-1 mm.

Ruellia brittoniana Leonard

[Acanthaceae]

Vernacular name(s): Atakali phula (O); Craker plant (E).

Distribution: B-2.

Description: An erect to spreading, perennial, upto 1 m tall. Leaves sessile, linear or linear-oblong, 6-30 cm x 5-16 mm, whitish veined above, long attenuate, entire margin. Flowers blue-violet, in lax, terminal, leafy corymbiform panicle. Calyx 5-lobed, lobes linear. Corolla glabrous externally, tube 2-2.5 cm. long. Capsule ellipsoid, compressed, 1.8-2 cm long, glabrous, apically pointed, 12-14-seeded. Seeds orbicular, ca. 2.5 mm across, brown.



Ruellia tuberosa L.

[Acanthaceae]

Vernacular name(s): Atakali phula (O); Craker plant (E).

Distribution: B-1, B-3.

Description: Glabrous or glabrescent herb. Leaves elliptic-obovate. Flowers blue, in axillary and terminal cymes; bracts and bracteoles narrow. Capsule linear.



Rungia pectinata (L.) Nees

[Acanthaceae]

[**Syn:** *Rungia parviflora* (Retz.) Nees var. *pectinata* (L.) C.B.Cl.]

Vernacular name(s): Sankha saga (O); Kharmor (H); Creeping rungia (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Herb. Leaves ovate-lanceolate, nearly glabrous. Flowers blue, very small, arranged in clustered secund spikes, with two rows of imbricate, ovate to lanceolate bracts, 2 ventral rows of suborbicular, bracts hairy. Capsule compressed.

Sansevieria cylindrica Bojer

[Asparagaceae]

Vernacular name(s): Gada (O); Marul (H); Cylindrical snake plant (E).

Distribution: B-2.

Description: It has striped, elongate, smooth, greenish-gray subcylindrical leaves. They are upto 3 cm diameter and grow upto 2 m. The 3 cm greenish-white tubular flowers are tinged with pink.



Sanseivirea roxburghiana Schult. & Schult.f.

[Asparagaceae]

Vernacular name(s): Gada (O); Marul (H); Indian bow string hemp (E).

Distribution: B-2.

Description: Leaves simple, deeply concave, channelled, sheathing leaf base. Inflorescence racemose. Flowers greenish, tinged purple. Fruit globose berry, indehiscent; seed(s) 1-3, globose, fleshy.



Sanseivirea trifasciata Prain

[Asparagaceae]

Vernacular name(s): Gada (O); Marul (H); Mother-in-law's tongue (E)

Distribution: B-2

Description: It is an evergreen perennial plant forming dense stands, spreading by way of its creeping rhizome. Stiff leaves grow vertically from a basal rosette. Mature leaves are dark green with light gray-green cross-banding and usually range from 70–90 centimetres long and 5–6 centimetres wide, though heights above 2 m.

Scadoxus multiflorus (Martyn) Raf.

[Amaryllidaceae]

(**Syn:** *Haemanthus multiflorus* Martyn)

Vernacular name: Chhatra prava (O); Blood lily (E).

Distribution: B-2.

Description: It grows from a rhizomatous bulb. The bases of the leaves, the stalks or petioles, are tightly wrapped together to form a pseudostem or false stem, 5–60 cm long. The flowers are produced in an umbel at the top of a leafless stem 12–75 cm long. The umbel of flowers is more-or-less globe shaped, with from 10 to 200 individual flowers. The fruit is a berry, 5–10 mm.



Scoparia dulcis L.

[Scrophulariaceae]

Vernacular name: Bana jastimadhu (O); Mithi patti (H); Sweet broom weed (E).

Distribution: B-1, B-2, B-3, B-4

Description: Herbs or suffrutescent subshrub, erect, to 1 m tall. Leaves petiolate; leaf blade rhomboid-ovate to rhomboid-lanceolate, to 3.6 × 1.5 cm, glabrous, glandular punctate, base cuneate. Flowers usually axillary, (1 or)2 per node. Pedicel 5-10 mm, glabrous. Bracteoles absent. Calyx lobed to base; lobes 4, ovate-oblong, ca. 2 mm, margin ciliate, apex obtuse. Corolla white, ca. 4 mm. in diam.; Capsule 2-3 cm in diam.



Sebastiania chamalea (L.) Muell.-Arg.)

[Euphorbiaceae]

[Syn: *Microstachys chamaelea* (L.) Muell.-Arg.]

Vernacular name(s): Bhrungarisa (O).

Distribution: B-2, B-4.

Description: Perennial herbs to many-stemmed subshrubs, 20-60 cm tall. Leaf blade linear or linear-lanceolate, 20-55 × 2-10 mm, thickly papery, Inflorescence 5-12 mm, lower part with 1 or 2 female flowers. Male flowers: bracts ovate, ca. 0.5 mm, Female flowers: bracts lanceolate, ca. 1 mm. Capsules triangular-globose, 3.5-4.5 mm, lobes softly spiny, spines reddish. Seeds subterete, smooth, 2.5-2.75 mm.

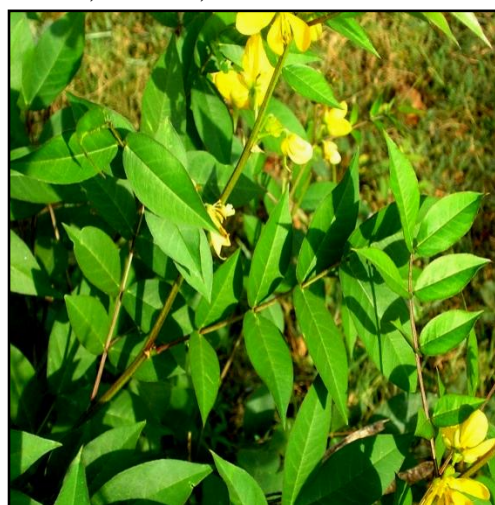
Senna occidentalis (L.) Link

[Caesalpinaceae]

Vernacular name(s): Kasundri (O); Kasunda (H); Coffee Senna (E).

Distribution: B-2, B-4.

Description: Smooth annual herb. Leaves compound, leaflets 4-6 paired, sharp tip. Flowers occur in leaf axils, sepals green, petals yellow. Pods 8 to 12 cm long, 7-10 mm wide, curve slightly upward. Seed dark brown.



Sesamum orientale L.

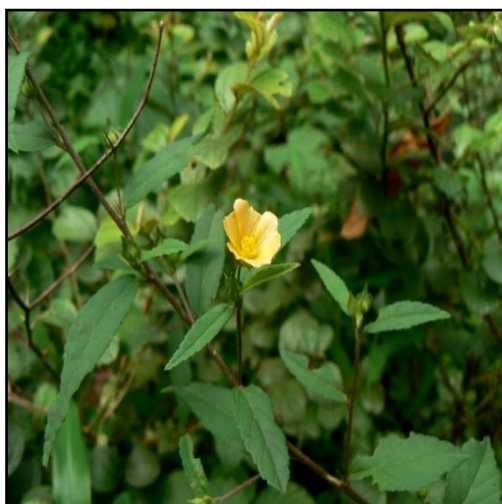
(Syn: *Sesamum indicum* L.)

[Pedaliaceae]

Vernacular name(s): Rasi (O); Til (H); Sesame (E).

Distribution: B-3, B-4.

Description: Herb, glandular; stem terete below, 4-gonous above. Leaves lanceolate or oblong. Flowers white, pinkish-violate or pinkish, often spotted yellow within, drooping, pubescent. Capsule erect, oblong, bluntly 4-gonous. Seeds black.



Sida acuta Brum.f.

[Malvaceae]

Vernacular name(s): Bajramuli (O Baraira (H); Common Wire weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Much branched herb. Leaves simple, lanceolate, vary in size, prominently toothed, acute base. Flowers grow from leaf axils, yellow, solitary, occasionally in pairs, buttercup shaped, overlapping petals.

Sida cordata (Brum.f.) Borssum

[Malvaceae]

Vernacular name(s): Bhumibandha (O); Bhuindi (H); Heart-Leaf Sida (E).

Distribution: B-1, B-4, B-6.

Description: Herb. Leaves, 1-5.5 cm long, are heart shaped one at each node. Flowers, 7-8 mm across, produced at leaf axils, yellow.



Sida cordifolia L.

[Malvaceae]

Vernacular name(s): Bisiripi (O); Kungyi (H); Country mallow (E).

Distribution: B-3, B-4.

Description: Herb or Undershrub. Leaves cordate, tomentose on both sides by minute stellate hairs. Flowers whitish or yellow, axillary, solitary or in cluster of 2-5 toward the top. Mericarp 8-10, flattened-triangular, at apex with 2 hairy awn.



Sida rhombifolia L. subsp. **rhombifolia**
var. **rhombifolia**

[Malvaceae]

(Syn: Sida rhombifolia L.)

Vernacular name(s): Bajramuli (O); Sahadevi (H); Queensland hemp (E).

Distribution: B-4.

Description: Herb. Stems often tinged red, cinereous with minute stellate hairs. Leaves rhomboid; stipules filiform. Flowers axillary, solitary or in cluster of 2-5. Mericarps 7-12, muticous, occasionally with 2 awns. Seeds flattened.

Solanum lycopersicon L.

[Solanaceae]

(Syn: Lycopersicon esculentum Mill.)

Vernacular name(s): Bilati-baigana (O); Tomatar (H); Tomato (E).

Distribution: B-2.

Description: Herb. Leaves pinnatisect. Calyx lobe triangular-lanceolate. Corolla yellow, 2 cm across. Berry variously shaped. Seed discoid.



Solanum melongena L.

[Solanaceae]

Vernacular name(s): Baigana (O); Bengan (H); Brinjal (E).

Distribution: B-2.

Description: Erect undershrub, 30-70 cm, mostly unarmed. Leaves ovate or ovate-elliptic, 5-11 x 2-6 cm, sub-entire or shallowly lobed, petiole 2-3 cm long. Flowers blue, 2 cm across, solitary or in short racemes. Calyx 1-2 cm long. Corolla blue. Berries of different sizes and shapes.



Solanum nigrum L.

[Solanaceae]

Vernacular name(s): Nunununia (O); Makoi (H); Black night shade (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect herb. Leaves ovate, sometimes lobed or toothed, glabrous or puberulous. Flowers white, small, few subumbelled on extra axillary peduncles; pedicels deflexed in fruit. Berry black, sometimes yellow or red, globose.

Solanum tuberosum L.

[Solanaceae]

Vernacular name(s): Aalu (O); Aaloo (H); Potato (E).

Distribution: B-2.

Description: Perennial herb. Leaves dying back after flowering, fruiting and tuber formation. Flowers white, pink, red, blue, or purple flowers with yellow stamens.



Solanum virginianum L.

[Solanaceae]

Vernacular name(s): Bheji-baigana (O); Kateli (H); Thorny Nightshade (E).

Distribution: B-4.

Description: Erect, creeping, herb; copiously armed with sturdy, needle like, broad-based prickles. Leaves unequal paired; stalk prickly; leaf blade ovate-oblong. Inflorescences elongate racemes 4-7 cm. Flowers blue-purple; pedicel and sepals prickly, sparsely pubescent. Berry pale yellow.



Spathiphyllum cochlearispathum
(Liebm.) Engl.

Vernacular name(s): Shanti puspa (O); Peace lily (E)

Distribution: B-2.

Description: Herbaceous perennial, up to 1m. Large leaves 12–60 cm long and 4–28 cm broad. The flowers are produced in a spadix, surrounded by a 10–30 cm long, white spathe. Fruits berries, distinct at maturity. Seeds 1-35 per berry.

Spermacoce articularis L.f.

(Syn: *Spermacoce hispida* auct. non L.)

[Rubiaceae]

Vernacular name(s): Sanagharpodia (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Prostrate herb; stem 4-angled, hispid. Leaves oblanceolate, more or less scabrid both sides. Flowers pink, in axillary few-flowered sessile clusters. Capsule 2-valved, hispid above, glabrous below. Seeds oblong, brown.



Spermacocoe exilis (L.O.Williams)C.D. Adams

[Rubiaceae]

(**Syn:** *Borreria exilis* L. O. Williams)

Vernacular name(s): Chhota golakabeejee (O)

Distribution: B-1,B-2, B-3, B-4

Description: Herbs, to 30 cm tall. Leaves subsessile to shortly petiolate; petiole to 1.5 mm, ovate or elliptic-oblong, 0.7-30 × 4-15 mm. Calyx hirtellous to glabrescent. Corolla white, rotate to shortly tubular, 0.5-0.6 mm, outside glabrous. Capsules ellipsoid, 1-1.1 × 0.8-1 mm. Seeds brownish yellow, ellipsoid, ca. 0.8 × 0.4 mm, shiny.



Sphaeranthus indicus L.

[Asteraceae]

(**Syn:** *Sphaeranthus hirtus* Willd.)

Vernacular name(s): Bhuiin kadamba (O); Gorakh mundi (H); East Indian globe thistle (E).

Distribution: B-3, B-4.

Description: Plants rank-smelling. Stems 10-45 cm tall. Leaves oblanceolate or spatulate, 2.5-6 × 0.8-2.5 cm. Clusters of capitula ovoid-globose, ca. 12 × 10 mm, capitulum bracts linear-lanceolate, 4-5 mm. Phyllaries ca. 12, linear-oblong to linear-spatulate, marginal florets 10-15; central florets 2 or 3; corollas purplish, ca. 2.4 mm. Achenes ca. 1 mm, puberulent.

Spilanthes calva DC.

[Asteraceae]

(**Syn:** *Spilanthes acmella* auct. non (L.) Murray]

Vernacular name(s): Dantika (O); Akarkar (H); Toothache plant (E).

Distribution: B-3, B-4.

Description: Herb; stems sometimes weak, creeping at base, sparsely pubescent. Leaves ovate, sparsely pubescent beneath. Heads yellow; peduncles axillary. Achenes narrowly obovate, glabrous, epappose and eciliate on the margins.



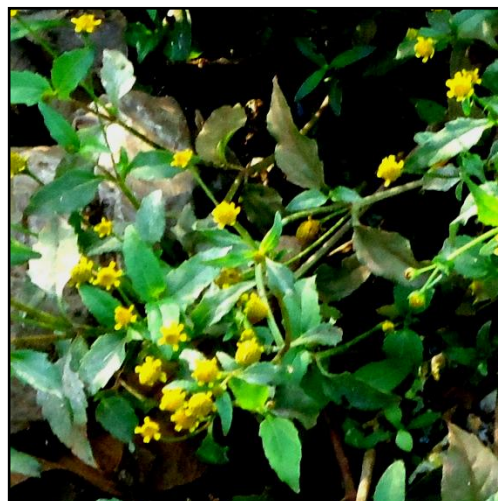
Spilanthes paniculata Wall. ex DC.

[Asteraceae]

Vernacular name(s): Akarakara (O); Akarkar (H); Toothache plant (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect herb; stems glabrous. Leaves broadly ovate, sparsely pubescent. Heads ovoid or ovoid-conical, discoid, solitary on terminal peduncles. Achenes narrowly obovate, strongly ciliate on the margins; pappus bristles 1-2, weak.



Synedrella nodiflora (L.) Gaertn.

[Asteraceae]

Vernacular name(s): Hemagrapuspi (O).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect dichotomously branched herb; stems sparsely appressed-pubescent. Leaves ovate, appressed hairy on both sides, base 3-nerved. Heads yellow, axillary and terminal. Rays achenes oblanceolate, winged; disc achenes oblanceolate.

Tagetes patula L.

[Asteraceae]

Vernacular name(s): Gendu (O); Gendaphool (H); Marigold (E).

Distribution: B-2.

Description: Erect herb, 30-70 cm, branched, aromatic. Leaves 2.5-5 cm long, pinnately divided into linear-lanceolate segments. Heads 1.5-3.5 cm across, yellow, solitary on long peduncles. Achenes linear, compressed, pappus of 1-2.5 cm long, awned scales.



Talinum triangulare (Jacq.) Willd.

[Talinaceae]

Vernacular name(s): Bilati poi; Sikha Phula (O); Flame flower (E).

Distribution: B-2.

Description: Herbs about 50-100 cm tall. Leaves simple, obovate-elliptic, about 5-15 x 2-5 cm across. Inflorescence terminal thyrsoid, 10-30 flowered. Petals 5, obovate, pink, reddish purple, deciduous or persistent, about 4-8 x 2-4 mm across. Fruit capsule, globose-ellipsoid, about 3.5-5 mm. Seeds many, reniform-globose, about 1.2 mm across, compressed, brown or black.



Tephrosia purpurea (L.) Pers. var. purpurea

[Fabaceae]

Vernacular name(s): Dantika (O); Akarkar (H); Toothache plant (E).

Distribution: B-3, B-4.

Description: Undershrub. Leaflets 5-8 pairs, oblanceolate, appressed hairy. Racemes, terminal, elongate, lax, with 3 or more nodes, each bearing 1-3 flowers. Flowers purple. Pods slightly curved, with appressed hairs. Seeds 6-10, ovoid.

Theriophonum minutum (Willd.) Baill

[Araceae]

(Syn: *Arum minutum* Willd.)

Vernacular name(s): Chhota kanda (O); Arum (E).

Distribution: B-2

Description: Herb 20-30 cm, Leaves hastately or sagittately 3-lobed, basal lobes lanceolate ovate-lanceolate; 7.5-12.5x3.7-10 cm. Spathe linear or linear-lanceolate, erect, spadix 5-6.2 cm, slender.



Tradescantia zebrina (Schinz) D.R.Hunt
[Commelinaceae]

Vernacular name(s): Chitramani (O);
Zebris tradescantia (E).

Distribution: B-2

Description: Herbs perennial. Leaves alternate, sessile; leaf sheath 8-12 × 5-8 mm, thin, membranous, long-ciliate at mouth; leaf blade with 2 longitudinal, silver stripes adaxially, purple abaxially, ovate, 3-10 × 1.5-3.2 cm, somewhat fleshy, glabrous or sparsely pilose on both surfaces, base rounded. Flowers in clusters subtended by 2 large, leaflike, narrow, ciliate bracts. Sepals lanceolate to oblong-lanceolate, ca. 5 × 1.5 mm. Petals rose pink, ovate, ca. 6 mm, apex obtuse. Seeds rugulose.



Tithonia diversifolia (Hemsl.) A.Gray
[Asteraceae]

Vernacular name(s): Tapanbala (O); Tithonia (E).

Distribution: B-1, B-2,

Description: Perennials, subshrubs, or shrubs, to 250(-500) cm. Petiole 2-6 cm; blade ± deltate to pentagonal, 7-33 × 7-22 cm, sometimes 3- or 5-lobed, abaxially glabrous to hispid-pilose. Peduncles 7-24 cm; phyllaries 16-28, (3 or)4-seriate, oblong to ovate, outer phyllaries 6-10 × 4-7 mm, abaxially usually glabrous, apex rounded to acute, inner 10-20 × 3-10 mm, abaxially glabrous, apex rounded to acute; paleae 10-13 × 2-3 mm, mucros 1.5-2.5 mm. Ray florets 7-14; corollas yellow, lamina linear, 48-69 × 9-16 mm. Disk florets 80-120. Achenes 4-6 mm.

Tribulus terrestris L.
[Zygophyllaceae]

Vernacular name(s): Gokhura (O);
Gokhuru (H); Puncture vine (E).

Distribution: B-2, B-4

Botanical description: Densely hairy prostrate herb. Leaves opposite, paripinnate; leaflets 4-7 pairs. Flowers yellow. Fruit globose, consisting of usually 5 hairy often muriculate woody cocci, each with 2 pairs of rigid spines. Seeds several in each coccus.



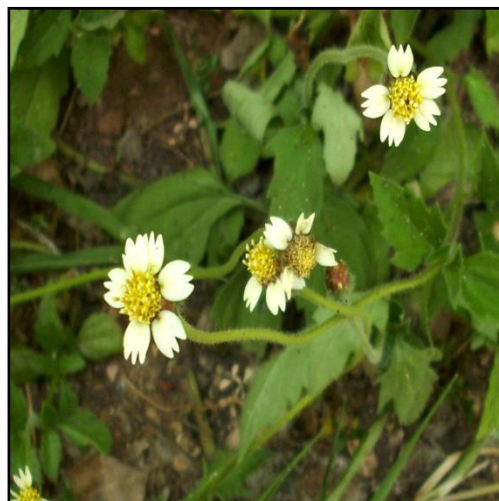
Tridax procumbens L.

[Asteraceae]

Vernacular name(s): Bisalya karani (O); Ghamra (H); Tridax daisy (E).

Distribution: B-1, B-2, B-3, B-4,

Description: Procumbent hairy herb. Leaves ovate, coarsely toothed, hairy on both sides. Heads solitary on very long peduncles, radiate heterogamous. Flowers yellow or creamy white. Achenes black, densely silky or hairy.



Triumfetta pentandra A. Rich. [Tiliaceae]

(Syn: *Triumfetta neglecta* Wight & Arnott)

Vernacular name(s): Hemasuchika (O); Chikti (H); Burbush (E).

Distribution: B-1, B-4.

Description: An erect, branched, 25-60 cm tall, annual herb. Leaves 5-costate, basal rhomboid-ovate, palmately 3-lobed, terminal ones ovate-lanceolate, unlobed, 4.5-9 cm long, 3.5-6 cm broad. Flowers yellow, c. 4-5 mm across, almost sessile. Sepals lorate, c. 2.5 mm long, cucullate. Petals spatulate. Capsule ovoid, densely tomentose, 6.5-7 mm long, 4.5-6 mm in diameter including c. 1.5-2 mm long, ascending, uncinat spines with a line of spreading hairs on the upper side.

Triumfetta rhomboidea Jacq.

[Tiliaceae]

Vernacular name(s): Jatajata (O); Chikti (H); Burbush (E).

Distribution: B-3, B-4.

Description: Erect, much-branched undershrubs; stem hairy, stellate hairs mixed with simple hairs. Leaves generally rhomboid-ovate, base rounded or cordate; petioles up to 4 cm long. Flowers terminal or leaf-opposed cymes, 5-6 mm across, shortly pedicellate.



Turnera ulmifolia L.

[Turneraceae]

Vernacular name(s): Ramgoat dashalong (E).

Distribution: B-2.

Description: Erect herb. Leaves lanceolate to oblong-lanceolate, margin doubly serrate. Flowers small, bright yellow butter scups or orange.



Uraria picta (Jacq.) Desv.ex DC.

[Fabaceae]

Vernacular name(s): Singhapuchha (O); Shankaraja (H); Dabra (E).

Distribution: B-2

Description: Subshrubs 50-95cm.. Leaves imparipinnate, 5- or 7(or 9)-foliolate; leaflet blades linear-oblong or narrowly lanceolate. Racemes terminal, 10-30 cm. Calyx 5-parted, long hairy. Corolla pink or pale blue. Legume lead-colored, 3-5-jointed.

Urena lobata L. subsp. sinuata (L.) Borssum var. sinuata

[Malvaceae]

Vernacular name(s): Raktapheni (O); Lapetua (H); Caesar weed (E).

Distribution: B-1, B-3, B-4.

Description: Pantropical weed. Flowers pink. Leaves lobed, greyish colour, raspy feel covered with star-shaped hairs. Fruit flattened, globe and dries when mature.



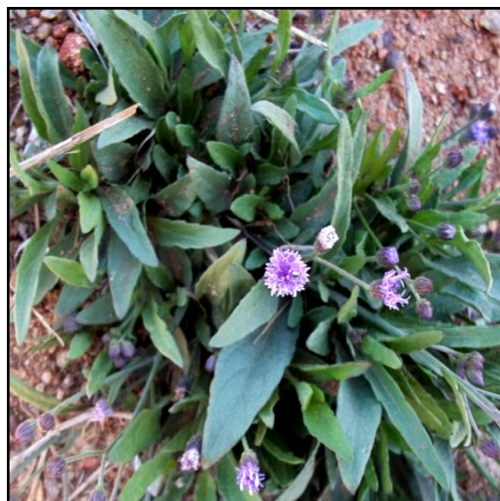
Vernonia cinerea (L.) Less.

[Asteraceae]

Vernacular name(s): Badi pokasunga (O); Sahadevi (H); Little iron weed (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Erect herb; stems ribbed, hairy. Leaves linear to elliptic, pubescent. Heads purplish, distinctly peduncled, in dense panicles. Achenes not ribbed; hairy; pappus caducous, with an outer ring of short persistent bristles.



Waltheria indica L. var. Indica

[Sterculiaceae]

Distribution: B-3, B-4.

Description: Erect, hoary stellate-tomentose herb. Leaves simple, ovate-oblong, pubescent above, white or greyish stellate-tomentose beneath. Flowers yellow, in dense axillary clusters. Capsule ovoid, villose, enclosed in calyx. Single seeded.

Wedelia chinensis (Osbeck) Merr.

[Asteraceae]

Vernacular name(s): Bhrungaraja (O); Pilabhangra (H); Chinese Wedelia (E).

Distribution: B-2.

Description: Procumbent herb; stems strigose. Leaves oblanceolate, sparsely strigose both sides. Heads yellow, heterogamous, axillary. Achenes cuneate-obovate, triquetrous compressed, truncate; pappus denticulate membranous cup.



Withania somnifera (L.)Dunal

[Solanaceae]

Vernacular name(s): Ashwagandha (O);
Asgandh (H); Winter Cherry (E).

Distribution: B-2

Description: Erect shrub or undershrub. Leaves ovate, 3.5-10 x 1.8-4 cm, entire, acute to obtuse. Flowers yellowish, 7.5-12.5 mm long, shortly pedicelled. Calyx 5 mm long. Berry globose, 6.2-7.5 mm diam.



Xanthium indicum Koenig

[Asteraceae]

Vernacular name(s): Gokhara(O); xanthium (E).

(Syn: *Xanthium strumarium* L.)

Distribution: B-3, B-4.

Description: Herbs; stems closely hispidulous. Leaves ovate-triangular, coarsely lobed and toothed, 3-nerved. Heads unisexual, clustered, axillary, males in the upper axils. Achenes of female florets enclosed in hardened cells of utricule.

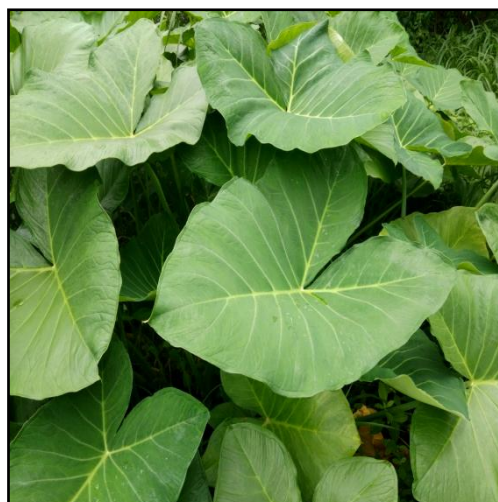
Xanthosoma robustum Schott

[Araceae]

Vernacular name(s): Bilati saru (O);
Capote(O);

Distribution: B-1.

Description: Herb upto 4 m tall, robust. Leaves 5-6 per plant; petioles 105- 150 cm long, green, leaf blade 52-160 x 32-100 cm, sagittate in primary lateral veins 7-10 per side. Inflorescence 1-7 per axil, peduncle 20-25 x 3- 3.5 cm, spathe 30-43 cm long, tube ovoid, 12-16 x 9-11 cm, clear green and strongly waxy outside, whitish green inside, spadix 28-40 cm long, fertile male portion white, 25-30 x 2-2.5 cm, sterile male portion white, 8-12 x 1.4-3 cm, pale yellow to ochre.



Zephyranthes candida (Lindl.)Herb.

[Liliaceae]

Vernacular name(s): Swetabaruni (O); zephyr-lily (E).

Distribution: B-2.

Description: Bulbs ovoid, ca. 2.5 cm in diam., neck 2.5-5 cm. Leaves bright green, terete-linear, 20-30 cm × 2-4 mm, fleshy. Involucres red-brown. Flowers solitary, terminal; pedicel ca. 1 cm. Perianth white, often tinged with rose abaxially; lobes ± free, 3-5 × ca. 1 cm, usually with tiny scales near throat, apex obtuse to shortly acute. Capsule subglobose, ca. 1.2 cm.



Zephyranthes rosea Lindl.

[Liliaceae]

Vernacular name(s): Patala abaruni (O); zephyr-lily (E).

Distribution: B-2.

Description: Leaf blade dull green, to 5 mm wide. Spathe 2-2.8 cm. Flowers erect to slightly inclined; perianth rose pink, spreading, funnelform, 2.7-2.8 cm; perianth tube green, 0.2–0.3 cm, increasing in diam., ca. 1/10 or less of perianth length, ca. 1/5 filament length, ca. 1/8 spathe length; tepals not reflexed, distalmost not erect; pedicel 1.5-3.2 cm, usually exceeding spathe. Capsule nearly globose, ca. 1.5 cm.

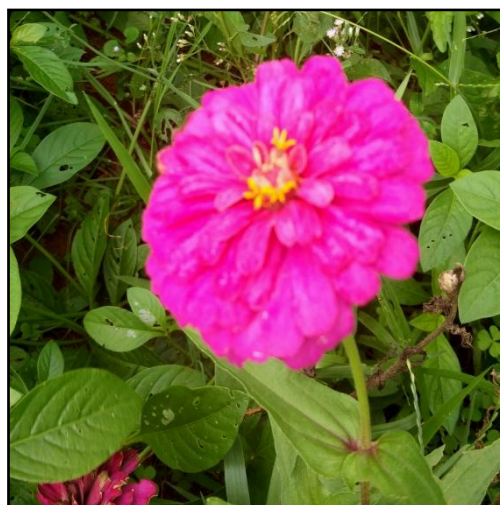
Zinnia elegans Jacq.

[Asteraceae]

Vernacular name(s): Zinnia (O &H); Common zinnia, Elegant zinnia (E)

Distribution: B-2

Description: Annuals, mostly 30-50 (-100) cm. Leaf blade ovate to elliptic or broadly lanceolate. Peduncles 10-50 (-70) mm; phyllaries obovate to oblong, glabrous; paleae red to purple or yellow, apex obtuse. Ray florets 6-15(-21); corollas usually scarlet red or maroon, sometimes yellow. Disk florets 12-50; corollas yellow. Achenes ribbed.



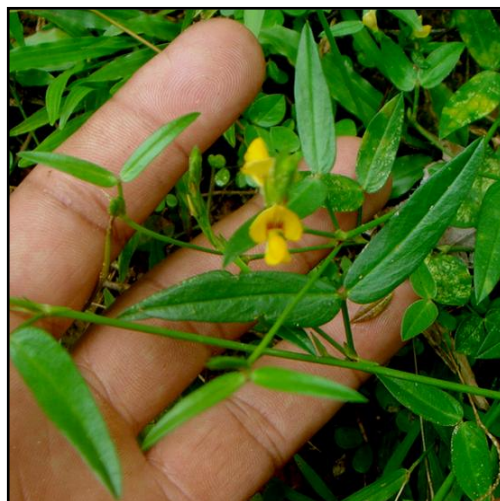
Zornia diphylla (L.) Pers.

[Fabaceae]

Vernacular name(s): Dwipatri
Khagapada (O); Jimgari (H); Two-
leaf zornia (E).

Distribution: B-3, B-4

Description: Slender herb, spreading from a central woody root stock. Leaves are two foliolate, linear-lanceolate, petiolate, stipulate. Raceme axillary or terminal; corolla yellow.



Zornia gibbosa Spanoghe

[Fabaceae]

[Syn: *Zornia diphylla* auct. non (L.) Pers.]

Vernacular name(s): Lamba Khagapada
(O); Grass-like zornia (E). Nala barki (H).

Distribution: B-3, B-4.

Description: Prostrate herb; branchlets pubescent. Leaves 2-foliolate; leaflets lanceolate, sparsely pubescent. Racemes 3-12 flowered. Flowers yellow, sessile. Joints of pod, very reticulately venose, with retrorsely scabrid prickles.

* * *

HYDROPHYTES

***Alisma plantago-aquatica* L.**

[Alismataceae]

Vernacular name(s): Dhanuki dala (O); Arrow head (E).

Distribution: B-2.

Description: Tubers 1-3.5 cm in diam. Aerial leaves with petiole 1.5-30 cm; leaf blade broadly lanceolate or elliptic to ovate, 2-11 × 1.3-7 cm, sometimes larger, veins 5. Panicles 15-50 cm, in 3-8 whorls of 3-9 branches. Pedicel 1-3.5 cm. Sepals broadly ovate, 2.5-3.5 × 2-3 mm. Petals white or purplish white, suborbicular, larger than sepals, margin denticulate. Achenes elliptic or suboblong, ca. 2.5 × 1.5 mm, 1- or 2-grooved abaxially; lateral pericarp thickish, opaque.



***Ceratophyllum demersum* L.**

[Ceratophyllaceae]

Vernacular name(s): Shrungapatri dala (O); Sivara (H), Rigid Hornwort (E).

Distribution: B-2.

Botanical description: Submerged aquatic herb, densely leafy. Leaves 1-2 time bifurcated, outer edges toothed. Male flowers in separate axils from female. Nut pedicelled, ellipsoid.

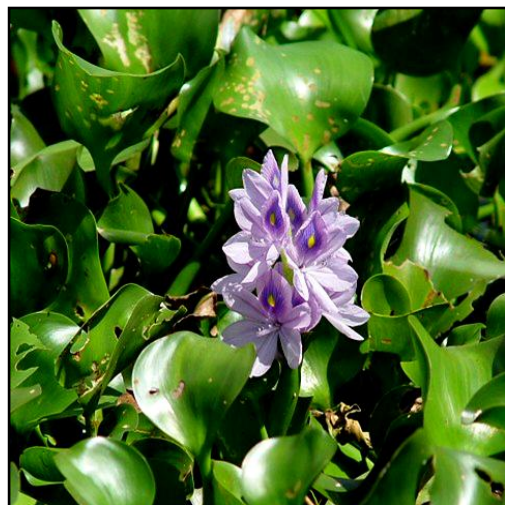
***Eichhornia crassipes* (Mart.) Solms-Laub.**

[Pontederiaceae]

Vernacular name(s): Bilatidala (O); Water-hyacinth (E).

Distribution: B-4.

Description: Floating herb; main-stem short leafy; stolon axillary. Leaves radical rosulate, broadly ovate or rhomboid leaf blade, glabrous, densely curvined. Inflorescence spike, 8-35 flowered, lilac or pale-violet. Capsule membranous.



Hydrilla verticillata (L.f.) Royle

[Hydrocharitaceae]

Vernacular name(s): Chingudia dala (O);

Distribution: B-2.

Description: Caulescent, glabrous, profusely branched freshwater herb. Leaves oblong-linear to lanceolate, (8-) 10-40 (-50) mm long, (1-) 2-3 mm wide, green, margin serrate-dentate. Male spathe 1.25-1.50 mm long. Male flower: sepals reflexed, 1.5-3 mm long; petals linear-spathulate, equalling the sepals, patent or reflexed, obtuse. Female spathe ca. 5 mm long, reddish-brown striped, bidentate. Fruit ± terete. 5-7 mm long. Seeds dark brown, c. 2.5 mm long.



Lemna perpusila Torr.

[Lemnaceae]

Vernacular name(s): Bataka dala (O); Duck weed (E).

Distribution: B-2, B-4.

Description: Fronds free floating, almost symmetrical, elliptical to ovate-obovate or oblong, 1.5-4 x 1.5-3 mm, flat on both surfaces, never gibbous and ± rounded apices, usually green above, solitary or several joined together by a hyaline stipe. Papillae absent or if present only at apex and above node with many meshes. Roots solitary with a wingless sheath, root cap obtuse, floral pocket lateral. Flowering specimens not seen.

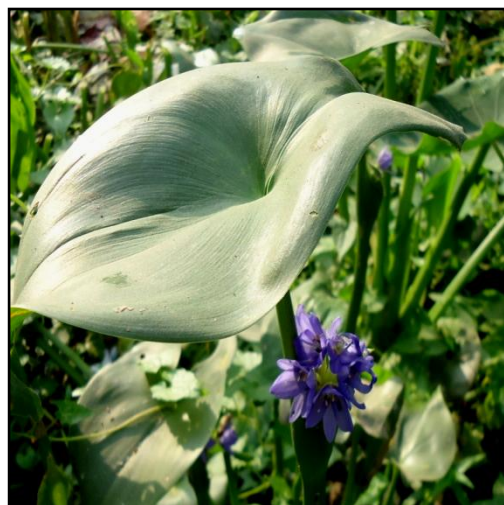
Monochoria hastata Solms-Laub.

[Pontederiaceae]

Vernacular name(s): Kajalapatia (O); Launkia (H); Arrow Leaf Pond weed (E).

Distribution: B-4.

Description: Aquatic herb. Stems long. Basal leaves arrow-shaped. Inflorescence of 25- 60 flowers is in a dense spike 6-9 cm long. Flowers 13-16 mm long, purple or whitish. Capsule long.

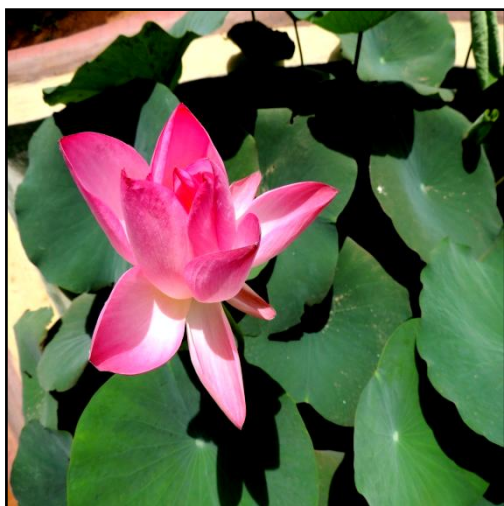


Monochoria vaginalis (Burm.f.) Presl
[Pontederiaceae]

Vernacular name(s): Mirimira (O);
Nanka (H); Oval-leaf pond weed (E).

Distribution: B-4.

Description: Annual or perennial herb. Leave variably tall, lamina absent in young leaves, older leaves have floating linear or lanceolate blade, ovate-oblong to broadly ovate, sharply acuminate, the base heart-shaped or rounded, shiny, deep green in colour. Inflorescence spike-like. Flowers 3-25.



Nelumbo nucifera Gaertn.

[Nelumbonaceae]

(**Syn:** *Nelumbium speciosum* Willd.)

Vernacular name(s): Padma (O); Kamal,
Kanwal (H); Lotus (E).

Distribution: B-2.

Description: Leaves 20-30 cm across, waxy, glaucous beneath. Flowers pinkish, upto 20 cm across. Sepals greenish, ovate. Petals elliptic, apex obtuse. Receptacle 5-8 cm. Stamens numerous, spirally arranged, filaments short. Carpels sunk in the cavities.

Nuphar pumila (Timm) DC.

[Nymphaeaceae]

(**Syn:** *Nymphaea lutea* L.)

Vernacular name(s): Chhota kain (O);
Nuphar (E).

Distribution: B-2.

Description: Leaves ovate, seldom elliptic, 6-17 × 6-12 cm, Flower 1-4.5(-6) cm in diam. Peduncle 40-50 cm, pubescent. Sepals yellow, oblong to elliptic, 1-2.5 cm. Petals narrowly cuneate to broadly linear, 5-7 mm, apex emarginate. Fruit 1-2 cm in diam. Seeds brown, oblong to ovoid, 3-5 mm.



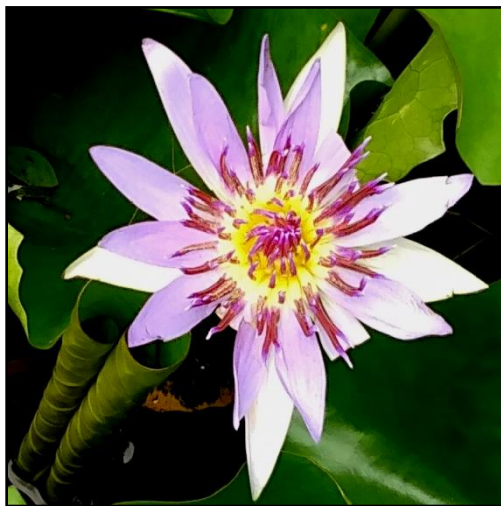
***Nymphaea mexicana* Zucc.**

[Nymphaeaceae]

Vernacular name(s): Peeta kain (O); Mexican lily (E).

Distribution: B-2.

Description: Rhizomes unbranched, erect, cylindrical. Leaves petiolate, ovate to elliptic or nearly orbiculate, 7-18(-27) × 7-14(-18) cm. Flowers floating or emergent, 6-11 cm diam., opening and closing diurnally, only sepals and outermost petals in distinct whorls of 4. Sepals uniformly yellowish green. Petals 12-30, yellow. Seeds globose, ca. 5 × 5 mm, uniformly covered with hairlike papillae 100-220 µm.



***Nymphaea nouchali* Burm.f.**

[Nymphaeaceae]

(Syn: *Nymphaea stellata* Willd.)

Vernacular name(s): Nila-kain (O); Neelkamal (H); Blue-waterlily (E).

Distribution: B-2.

Description: Rhizomes erect, unbranched. Leaf blade elliptic-orbicular to orbicular, 7-15(-45) cm in diam. Flower slightly emergent, 3-15 cm in diam. Petals 10-30, white tinged with purple, blue, or purple-red, linear-oblong to lanceolate, 4.5-5 cm. Fruit globose, 1.5-4.5 cm in diam. Seeds ellipsoid-globose, 0.5-1.3 mm, with longitudinal rows of hairs.

***Nymphaea pubescens* Willd.**

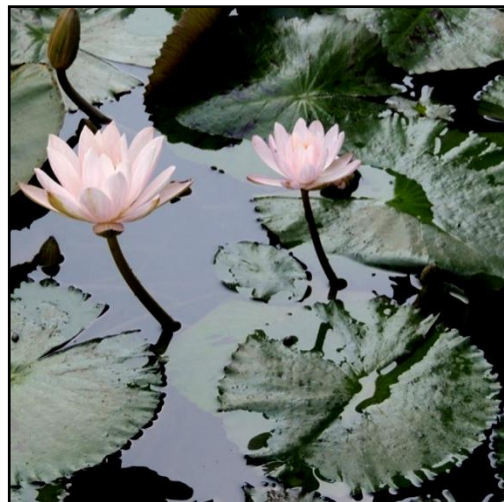
[Nymphaeaceae]

(Syn : *Nymphaea lotus* auct. non. L.)

Vernacular name(s): Nali/Dhala kain (O); Ranga kamal (H); Indian waterlily(E).

Distribution: B-2.

Description: Rhizomes erect, producing slender stolons. Leaf blade ovate-elliptic to suborbicular, 15-26(-50) cm, papery. Flower emergent, (2-)5-8(-15) cm in diam. Calyx insertion on receptacle circular; sepals oblong, 5-8 cm, Petals 12-14(-30), white, red, or pink, oblong, 5-9 cm, transition to stamens abrupt.. Seeds ellipsoid to globose, 1-2 mm, with longitudinal ridges.



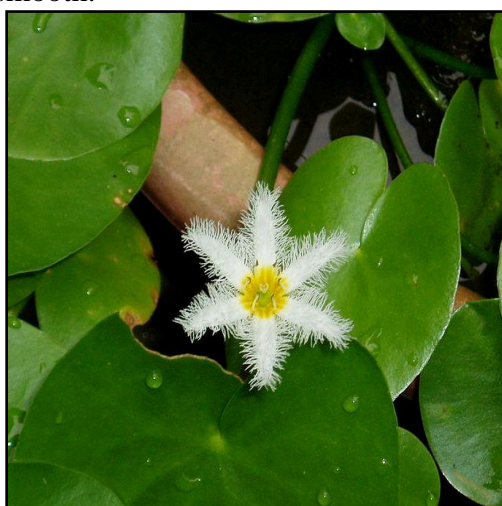
Nymphoides hydrophila (Lour.)
Kuntze

[Menyanthaceae]

(Syn: *Menyanthes indica* L.)

Distribution: B-2.

Description: Rhizomes horizontal. Leaf blade broadly ovate to subcordate, 3-18 cm, subcoriaceous, abaxially densely glandular, base cordate, margin entire. Flowers many, clustered at nodes, 5 merous. Calyx 3-6 mm, lobed to near base; lobes lanceolate to narrowly elliptic, apex obtuse. Corolla white with a yellow center, 7-12 mm. Capsules elliptic, 3-5 mm, few seeded. Seeds brown, globose, 1.2-1.5 mm; seed coat smooth.



Nymphoides indica (L.) Kuntze

[Menyanthaceae]

(Syn: *Menyanthes hydrophylla* Lour.)

Distribution: B-2.

Description: Stems 10-30 cm, rooting from nodes. Leaf blade cordate, 1-6 × 1-4(-5) cm, submembranous, veins indistinct. Flowers 2-10 per node, 5 merous, homostylous. Pedicel 2-6 cm, slender. Calyx 4-5 mm, lobed to near base; lobes narrowly oblong, apex acute. Corolla white, campanulate, 7-8 mm, lobed to middle, tube 4-5 mm; lobes 3-4 mm, margin lacinate, apex emarginate. Capsules globose, ca. 3 mm in diam., 6-10- seeded. Seeds brown, globose, ca. 1 mm in diam. seed coat spinescent.

Pistia stratiotes L.

[Araceae]

Vernacular name(s): Borajhanji (O);
Jal kumbhi (H); Water lettuce (E).

Distribution: B-4.

Description: Floating cabbage-like herb. Leaves rounded, obovate-cuneate, retuse or shallowly lobulate and undulate at apex, densely closely pubescent on both sides, nerves flabellate. Spathe pale-yellow or white, obliquely campanulate.



Potamogeton nodosus Poir.

[Potamogetonaceae]

Distribution: B-2.

Description: Plants perennial, in fresh water. Leaves dimorphic; stipules axillary, convolute, 2-4 cm, membranous, amplexicaul, submerged leaves petiolate. floating leaves opaque; blade elliptic or ovate-elliptic, 3-6 × 1.5-3 cm, leathery, (11-)15-23-veined, base cuneate or obtuse, apex acute or slightly obtuse. Spikes cylindric, densely flowered; peduncles 4-6 cm, thicker than stem. Carpels 4. Fruit obovoid, 3-4 mm, abaxial keel distinct.



Spirodela polyrhiza (L.) Schleiden

[Lemnaceae]

(Syn: *Lemna polyrhiza* L.)

Vernacular name(s): Bataka dala (O); Duck weed (E).

Distribution: B-4.

Description: Fronds solitary or cohering in groups of 2-5, orbicular-obovate, dorsal side flat, ventral side flat to strongly inflated, green, ventral side and margin often red-purple. Stipe hyaline. Fruit utricle, slightly winged. Seeds 1-2.

Typha angustifolia L.

[Typhaceae]

Vernacular name(s): Eraka, (O); Patera (H); Narrow-leaf cat tail (E).

Distribution: B-2.

Description: Perennial herb. Leaves flat, very narrow, 3'-6' tall when mature; 12-16 leaves arise from each vegetative shoot. At maturity, they have distinctive stalks that are about as tall as the leaves; the stalks are topped with brown, fluffy, sausage-shaped flowering heads.



* * *

CLIMBERS

***Abrus precatorius* L.**

[Fabaceae]

Vernacular name(s): Kaincha (O);
Gunj (H); Crab-eye seed (E).

Distribution: B-4.

Description: Perennial climber, branches slender, glabrous or sparsely silky. Leaves 5-10 cm long. Petiole 0.6-1.2 cm long. Leaflets 10-20 pairs, opposite, lamina 0.8-2.2 cm long, 3.5-6 cm broad, oblong, tip rounded, apiculate. Calyx 2.5 mm long, glabrous. Corolla pink or white with a pink tinge. Pod 2.5-4.2 cm long, 1-1.3 cm broad, oblong. Seeds 3-5, ovoid, 7-8 mm long, scarlet with a black spot at the hilum.



***Aganosma caryophyllata* (Roxb. ex Sims) G. Don**

[Apocynaceae]

[Syn: *Aganosma dichotoma* (Roth) K. Schum]

Vernacular name(s): Malati (O & H); Clove scented echites (E).

Distribution: B-2.

Description: Large climber, young branchlets rusty tomentose. Leaves ovate, elliptic, oblong or ovate-oblong, 4-13.7 × 2-7.5 cm. Cymes corymbose. Flowers white, large. Calyx-lobes linear, rusty-tomentose. Corolla-lobes obliquely ovate. Disc large. Folicles densely yellow-tomentose when young. Seeds flat, 1.5-2.5 cm long with a long coma.

***Allamanda blanchetti* A. DC.**

[Apocynaceae]

Vernacular name(s): Patali kaniara (O); Blanchett oleander (E).

Distribution: B-2.

Description: Trailing shrub. Leaves whorled, with axillary glands. Flowers large, in terminal or seemingly axillary corymbs. Corolla purple, funnel-form, limb campanulate, lobes overlapping to left. Capsules globose, sharply spiny, 2-valved. Seeds numerous, compressed, winged.



Antigonon leptopus Hook. & Arn.

[Polygonaceae]

Vernacular name(s): Snehalata (O);
Coral vine (E).

Distribution: B-4.

Description: Woody climber, with tuberous root, stem angular, glabrescent. Leaves alternate, blade 3-8 cm long, 1.5-5 cm broad, hastate-ovate, triangular or cordate-ovate, simple. Inflorescence a raceme ending into a branched tendril. Flowers showy; pedicel 3-8 mm long with sparsely spreading simple hairs. Perianth segments 5, bright pink, 6-15 mm long, 3-7 mm broad, very reticulately veined. Nut c. 5 mm long.



Argyreia nervosa (Burm. f.) Bojer

[Convolvulaceae]

[**Syn:** *Argyreia speciosa* (Linn. f.) Sweet]

Vernacular name(s): Brudhha daruka (O);
Ghav bel, (H); Elephant Climber (E).

Distribution: B-2.

Description: A woody perennial vine 9 - 15 m long. Leaves cordate, 15 -25 cm long and 13 - 20 cm wide, upper side of leaves is green and glabrous, the lower side is silver and tomentose like young stems, younger stem is silvery and tomentose. Flowers pink or blue to purple, trumpet-shaped (5 cm wide) with darker purple in the centre. Fruits yellow-brown, dry round, 2 cm wide capsule. Each fruit holds 4 - 6 seeds.

Artabotrys hexapetalus (L.f.) Bandari

[Annonaceae]

(**Syn:** *Annona hexapetala* L. f.)

Vernacular name(s): Chini champa (O); Hari champa (H); Climbing Ilang-Ilang (E).

Distribution: B-2.

Description: Climbing shrubs to 10 m tall, leaf blade oblong to broadly lanceolate, 6-16(-25) × 2.5-6(-8) cm, papery. Inflorescences 1- or 2-flowered. Flowers 2.5-3 cm in diam., fragrant. Sepals green, ovate. Petals greenish to yellowish, oblong-lanceolate, 3-4.5 × 0.9-1.6 cm. Seeds pale brown, 1.5-2 cm, smooth.



Asparagus racemosus Willd.

[Asparagaceae]

Vernacular name(s): Satabari (O);
Satavar (H); Spiny Asparagus (E).

Distribution: B-2.

Description: Slender, scrambling or scandent, suffruticose perennial; branches angular with strong, straight or decurved spines; rootstock with elongate tubers. Cladodes 2-8-nate, many or few flowered, 2.5-8.7 cm long, sometimes bearing spines. Flowers white, sweet-scented, 3 mm across, pedicels filiform. Berries 2.5-6.2 mm diam.



Atylosia scarabaeoides (L.) Benth.

[Fabaceae]

Vernacular name(s): Bana kulthia (O).

Distribution: B-3, B-4.

Plant description: Herbaceous climber. Leaflets obovate-oblong, pubescent above, densely pubescent below. Flowers yellow or tinged with reddish-brown. Pods straight, oblong, covered with long soft brownish hairs. Seeds 4-6, grey-brown.

Basella alba L.

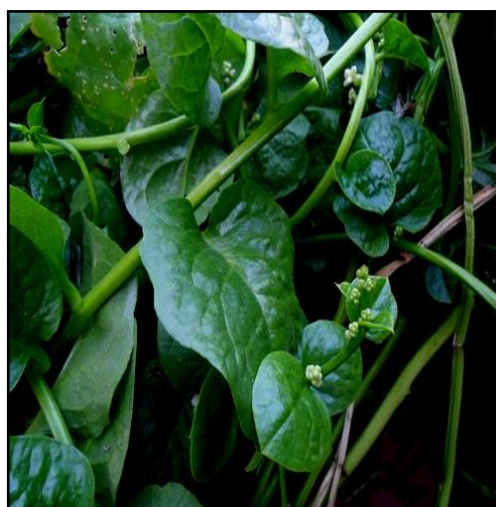
[Basellaceae]

(Syn: *Basella rubra* L.)

Vernacular name(s): Poi(O); Pui (H);
Indian spinach (E).

Distribution: B-2.

Description: Herbs annual. Leaf blade ovate or rotund, 3-9 × 2-8 cm, base shallowly cordate or rotund, margin entire, apex acuminate. Spikes 3-15(-20) cm. Perianth red-dish or purplish, ovate-oblong, 3-4 mm, base pale, margin entire, apex blunt. Utricle red to dark red or black, 5-6 mm in diam., containing violet juice.



Campsis radicans (L.) Seem,
[Bignoniaceae]
[Syn: *Bignonia radicans* (L.) Juss.]
Distribution: B-2.

Plant description: Stem climbing, upto 10 m long. Leaves odd-pinnate, with upto 7 cm long petiole, with (7)9-11 ovate or oblong-ovate leaflets, 4-6(12) cm long, 2-3(7) cm broad. Flowers on terminal branches in reduced (umbelliform) racemes. Corolla usually orange with scarlet limb, 6-8 cm long (limb upto 3-4 cm long), 5-lobed above. Capsule oblong-cylindrical, 8-15(20) cm long. Seeds orbicular, with two translucent, light brown wings.



Cayratia pedata (Wall.) Gagnep.
[Vitaceae]

Vernacular name(s): Hanshapada (O);
Suvbaha (H); Birdfoot Grape-Vine (E).

Distribution: B-3, B-4.

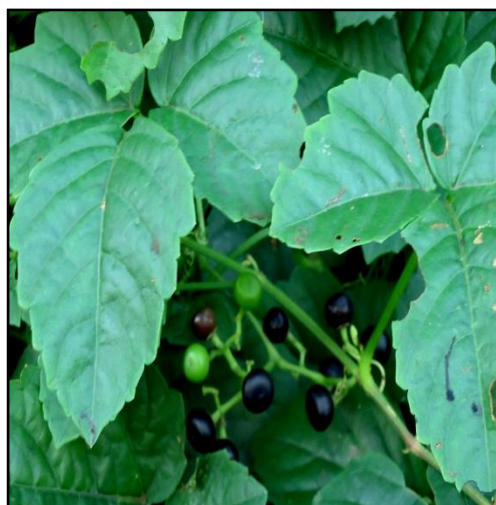
Description: A large but weak climbing shrub, completely hairless. Tendrils leaf-opposed, branched, wiry, coiled. Leaves alternate, pedately 5-7 foliolate, leaf stalks 2-7 cm long; at branch-ends leaflets elliptic to egg-shaped-lance shaped, 5-12 x 3-6 cm, lateral leaflets 2.5-9 x 1.5-5 cm, base unequal. Flowers bisexual, hairless, greenish yellow or yellowish white, in leaf-axils corymbs. Berries spherical.

Cayratia trifolia (L.) Domin
[Vitaceae]
(Syn: *Vitis trifolia* L.)

Vernacular name(s): Kanji kanjia
(O); Amal bel (H); Fox grape (E).

Distribution: B-1, B-3, B-4.

Description: Herbaceous climber. Pubescent stem. Leaves ovate, crenate, 3-foliolate. Tendril slender, branched. Cymes thinly hairy, lax. Flowers greenish or white, small. Berries black, depressed globose. Seed 2-4.



Cissampelos pareira L.

[Menispermaceae]

Vernacular name(s): Akanabindhi (O); Akanadi, (H); Velvet Leaf,(E).

Distribution: B-2.

Description: A slender tomentose climber. Leaves peltate, 2.5-12 cm long, 2.5-11.5 cm broad, triangularly broad-ovate, or orbicular, obtuse. Flowers minute. Male flowers in pedunculate branched cymes, petals 4, Female flowers clustered in the axils of orbicular, on 5-10 cm long racemes. petal 1, obtriangular subreniform; Drupe 4-6 mm long, subglobose, red when fresh, black when dry. Seeds horseshoe-shaped.



Cissus quadrangularis L.

[Vitaceae]

(Syn: Vitis quadrangularis (L.) Wall. ex Wt. & Arn.)

Vernacular name(s): Hadabhnga (O); Hadjora (H); Devil's Backbone (E).

Distribution: B-2.

Description: A perennial herbaceous climber. Stem thick, succulent, quadrangular. Tendril long, slender. Leaves simple ovate, entire or cordate, 3-5 × 5-3 cm. Inflorescence a compound umbelliform cyme, peduncle 1-2.5 cm long. Flower pink and white, 2 mm long. Petals 4, distinct, hooded at apex, ca. 1.5 mm long. Berry globose, red, succulent, 6-10 mm in diameter, 1 seeded. Seed obovoid smooth, 4-8 mm across.

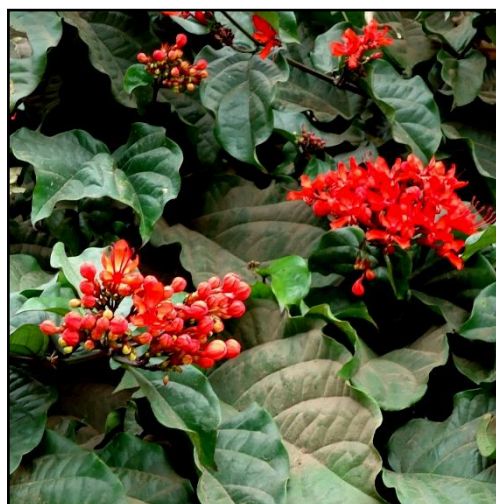
Clerodendrum splendens G.Don

[Verbenaceae]

Vernacular name(s): Rakta Brajamalli (O).

Distribution: B-2.

Description: A straggling scandent shrub 10-20 ft long. Leaves simple, opposite, ovate-lanceolate 5-16 × 3-8 cm across. Inflorescence capitula axillary, dichotomously or trichotomously branched, 5-20 cm wide, peduncle reddish brown, 1-2 cm long. Flowers bisexual, slightly fragrant. Calyx campanulate, 5 toothed. Corolla hypocrateriform, 5 lobed, lobes oblanceolate. Fruit drupaceous, succulent, purplish with 4 pyrenes.



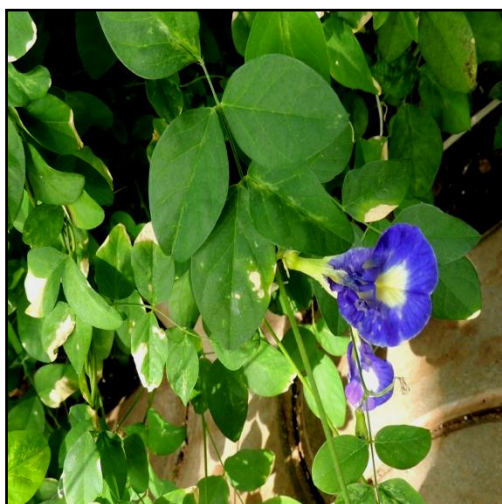
Clerodendrum thomsoniae Balf.

[Verbenaceae]

Vernacular name(s): Jhula Brajamalli (O); Glory Tree (E).

Distribution: B-2.

Description: Evergreen vine or shrub upto 7 m in length. Smooth, dark green glossy leaves are elliptic with entire leaf margin, opposite; upto 15 cm long and 7 cm wide. Flowers with 4 white, ovate calyces and 5 dark red, obovate petals and 5 white, long stamens. The calyces form a pyramidal shape with the tips hanging downwards. : Fruits drupe-like, black. Seeds oblong.



Clitoria ternatea L.

[Fabaceae]

Vernacular name(s): Aparajita (O & H); Butterfly pea (E).

Distribution: B-2.

Description: Slender twiner. Stem terete. Leaves imparipinnate; leaflets mostly 5, elliptic. Flowers blue or white, solitary on axillary peduncles; bracteoles large, foliaceous, persistent; standard spoon-shaped. Pods linear, flat. Seeds 6-10.

Coccinia grandis (L.) Voigt

[Cucurbitaceae]

Vernacular name(s): Bana-Kundri (O); Kunduru (H); Ivy gourd (E).

Distribution: B-3, B-4.

Description: Perennial climbing vine. Stem herbaceous, occasional adventitious roots. Tendrils long, elastic. Leaves palmately simple, five lobed. Flower large, white, five long tubular petals. Fruit berry, oval and hairless, thick and sticky skin. Seeds flattened.



Cocculus hirsutus (L.) Diels

[Menispermaceae]

Vernacular name(s): Musakani (O); Farid buti (H); Broom Creeper (E).

Distribution: B-3, B-4.

Description: A climbing undershrub, often densely velvety. Leaves are 4-8 cm long, 2.5-6 cm broad, ovate or ovate-oblong. Male flowers have sepals hairy. Petals are ovate-oblong, 0.5-1.5 mm long, 0.3-6 mm broad. Female flowers 1-3, on axillary stalks, rarely racemed. Fruit is a dark purple berry.



Cucumis melo L.

[Cucurbitaceae]

Vernacular name(s): Kharabhuj (O); Kharbuj (H); Musk melon (E).

Distribution: B-2.

Description: Annuals, soft, hairy climbing or trailing vines with tendrils. Leaves large, round to lobed. Flowers unisexual; female flowers are yellow. Fruits vary considerably in size, shape, texture, flavours, and rind and flesh colours. The center of the fruit is filled with white, oblong seeds, around 1 cm long.

Cucumis sativus L.

[Cucurbitaceae]

Vernacular name(s): Kakudi (O); Khira (H); Cucumber (E).

Distribution: B-2.

Description: Prostrate or climbing herbs. Flowers yellow; males cluster, bearing anthers cohering, connective crusted or elevated above the cells; females solitary. Fruit cylindrical, slightly tubercle, green or yellowish-green.



Cucurbita maxima Duchesne

[Cucurbitaceae]

Vernacular name(s): Kakharu (O); Lal kaddu (H); Pumpkin (E).

Distribution: B-2.

Description: Annual herb, prostrate, stems cylindric, grooved, hairy. Leaves 6-19 x 6.5-27 cm, reniform, shallowly 5-lobed, coarsely hairy, minutely dentate, petiole 5-19 cm long, hairy. Flowers yellow, 4-8 cm long, campanulate. Fruit usually large, and of various forms. Seeds numerous ovate, whitish-yellow.



Cuscuta reflexa Roxb.

[Cuscutaceae]

Vernacular name(s): Nirmuli (O); Amar bel (H); Giant dodder (E).

Distribution: B-4.

Description: Climber. Stem yellowish-green or yellow, often in dense masses with pendulous branches. Flowers white or pinkish, solitary and in few-many flowered, racemiform cymes or flowers sessile. Ripe fruit fleshy, globose-conical. Seeds 1-4.

Dioscorea alata L.

[Dioscoreaceae]

Vernacular name(s): Khamba alu (O); Chupri-alu (H); Asiatic yam (E).

Distribution: B-2.

Description: slender climber. Bulbils large, oblong on special branches, with corky surface. Leaves 12-20 x 10-12 cm, ovate-cordate, glabrous. Inflorescence spike; male spikes with zigzag winged rachis. Flowers minute, 1-1.5 cm long, axillary, subglobose. Female flowers axillary, solitary, on 10-20 cm long spike. Capsule broadly obcordate, 2.5-3.5 cm wide.



Diplocyclos palmatus (L.) C.Jeffrey

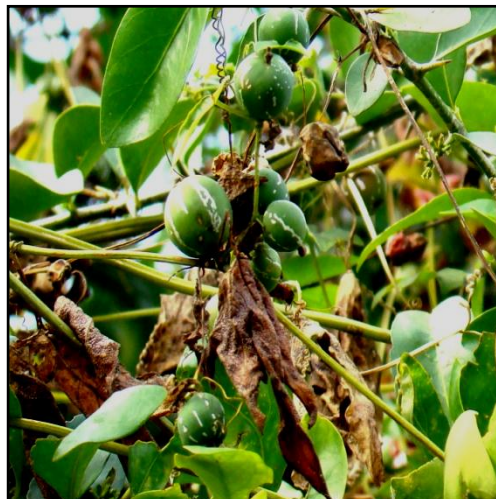
[Cucurbitaceae]

(Syn: *Bryonia palmata* Linn.)

Vernacular name(s): Shivalingi (O).

Distribution: B-4.

Description: Leaves broadly ovate, 3.5-14 x 4-14.5 cm, lobes linear-lanceolate to elliptic, glabrous. Flowers small, white or yellowish, male in sessile clusters of 2-8, along with 5 female flowers in the same axil. Corolla of male larger than female. Fruit solitary, or in clusters of 2-5, ovoid-subglobose, 1.5-2.5 cm. Seeds 5-6 x 2.5-3 mm.



Epipremnum aureum (Linden & André)

G.S.Bunting

[Araceae]

Vernacular name(s): Prusthapannee (O); Big money plant (E).

Distribution: B-2.

Description: Root climbers, to 15 m. Foliage leaves often clustered distally; petiole dark green, 19.5-60 cm x 3-13 mm, canaliculate, smooth; leaf blade ovate to oblong-elliptic, 10-93 x 5-60 cm. Inflorescence several together, partially obscured by netted fibers. Spathe dull yellow to mid-green outside, 7-23.5 x 3-15 cm. Spadix sessile, white, later glaucous gray-green to yellow, cylindric, 8.5-25 x 1.1-3.5 cm, base slightly obliquely inserted. Flowers 3-7 mm in diam. Fruit mid-green. Seeds reniform.

Ficus pumila L.

[Moraceae]

Vernacular name(s): Chhota bara (O); Dwarf ficus (E).

Distribution: B-2.

Description: A climber with clinging roots and white to brownish short hair on young shoots. Leaves dimorphic, with 8-25 mm long, villous to glabrescent petiole; lamina coriaceous, ovate-oblong, 4-10 cm long, 2.5-6 cm broad, 3-5-costate at the ± cordate base, entire, obtuse to subacute, glabrescent above. Hypanthodia on erect fruiting branches, generally solitary axillary, sessile to shortly pedunculate, subglobose to pyriform or obovoid-turbinate, 2.5-5 cm long. Male flowers: large, numerous. Female flowers: sessile to long-pedicelled. Figs obovoid turbinate, 3.5-7 cm long, purple-black, glabrous to glaucous.



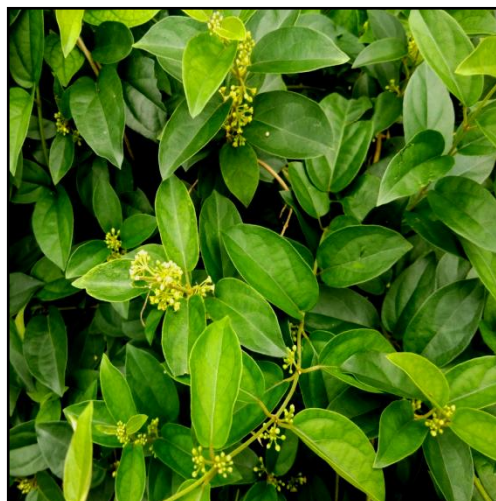
Gymnema sylvestre R.Br.

[Asclepiadaceae]

Vernacular name(s): Gudamari (O).

Distribution: B-2.

Description: Stems to 8 m. Leaf blade obovate to ovate, 3-8.5 × 1.5-5.5 cm, thick papery. Cymes much shorter than leaves, pubescent; peduncle 2-5 mm, rachis with close-spaced spiral of pedicel scars. Sepals ovate, ciliate. Corolla greenish white; lobes ovate, glabrous. Follicles mostly solitary, broadly lanceolate in outline, 5-9 × ca. 2 cm, glabrous, beak acuminate. Seeds ovate, ca. 8 × 4 mm; coma silky white, ca. 3.5 cm.



Hemidesmus indicus (L.) R.Br. var. **indicus**

[Periplocaceae]

Vernacular name(s): Anantamula (O); Anantamul (H); Indian Sarsaparilla (E).

Distribution: B-1 B-2, B-3, B-4.

Description: Climbing vine. Tendrils growing in pairs from the petioles of the alternate, orbicular to ovate, evergreen leaves. Flowers small, greenish on the outside and purple to yellowish orange on the inside, grows in axillary umbels, fleshy petals. Cymes stalkless.

Ipomoea obscura Ker.-Gawl.

[Convolvulaceae]

Vernacular name(s): Lakhmana (O); Pan bel (H); Obscure Morning Glory (E).

Distribution: B-4.

Description: Slender twining herbs. Leaves ovate to cordate, pubescent or glabrescent on both surfaces. Flowers solitary or in subumbellate cymes. Sepals ovate-lanceolate, apex acute-apiculate. Corolla yellowish, throat purplish. Capsule 6-8 mm across, subglobose, apically beaked. Seeds ovoid, black, thinly pubescent.



***Ipomoea pes-tigridis* L.**

[Convolvulaceae]

Vernacular name(s): Bilei pada (O); Panchpatia (H); Tiger Foot Morning (E).

Distribution: B-1, B-4.

Description: A twining, herbaceous, hairy, annual vine. Leaves rounded in outline, 6-10 cm in diam, lobes of the blade are elliptic, with narrowed base and rounded sinuses. The flowers occur in axillary head, usually only one opening at a time. Flowers white and 4 cm long, the limb being 3 cm in diameters. Fruit is rounded and 6-7 mm in diameter, subglobose, apically beaked.



***Ipomoea quamoclit* L.**

[Convolvulaceae]

Vernacular name(s): Kunja lata (O); Kamlata (H); Cypress Vine (E).

Distribution: B-3.

Description: Slender climber. Leaves pinnate-partite; segments filiform. Corolla salver-shaped, bright red or white. Leaves dissected. Flowers solitary, deep red. Fruit capsule. Seeds oblong, white, membranous. Fruiting throughout the year.

***Ichnocarpus frutescens* (L.)**

W.T.Aiton

[Apocynaceae]

Vernacular name(s): Suanlai(O); Shyamalata (H); Black Creeper (E).

Distribution: B-2, B-4.

Description: Climbing shrub, woody below, with milky latex, branches pubescent. Leaves 3.5-8 x 1.5-3 cm, elliptic-lanceolate, oblong, acuminate, glabrous, shortly petioled. Flowers white, small, in long. terminal and axillary paniculate cymes. Calyx with linear glands within. Corolla-tube swollen in the middle, lobes narrow. Follicles linear. Seeds brown, linear, grooved.



***Ipomoea sepiaria* Koenig ex Roxb.**

[Convolvulaceae]

Vernacular name(s): Kunjalata (O);
Ban kalmi (H).

Distribution: B-3, B-4.

Description: Herbaceous twiner; branches sometimes pilose. Leaves ovate or triangular, glabrous or puberulose. Flowers light purple or white with deep purple centre, in 3-9 flowered, axillary, subumbellate cymes. Capsule ovoid. Seeds 2-4.



***Luffa acutangula* (L.) Roxb.**

[Cucurbitaceae]

(Syn: *Cucumis acutangula* L.)

Vernacular name(s): Jahni (O); Karviturai (H); Ribbed gourd (E).

Distribution: B-2.

Description: Climbing herb, glabrous. Leaves 5.5-18 x 5.2-25 cm, broadly ovate, angled or shallowly lobed. Flowers 2.5-2.8 cm across, yellow, male and female in the same axil. Berries linear-obovate, dark green, ribbed. Seeds 0.4-0.6 cm long, ovate-oblong, black.

***Luffa aegyptica* Mill.**

[Cucurbitaceae]

Vernacular name(s): Tarada (O);
Ghia Taroi (H); Sponge gourd (E).

Distribution: B-4.

Description: Herbaceous climber; angled stem. Leaves orbicular, 5-7 lobed, lobes deep, denticulate, scabrous above; tendril 3-fid. Flowers yellow, male and female in same axils, raceme long. Fruit cylindric, often with 10 darker coloured stripes. Seeds grey.



Mansoa alliacea (Lam.) A. H. Gentry.

(Bignoniaceae)

(Syn: *Pseudocalymma alliaceum*)

Vernacular name(s): Rasuna lata (O); Garlic vine (E).

Distribution: B-2.

Description: Woody climber with odourless leaves that give off a distinct garlic smell only when crushed, Flowers are showy, funnel-shaped and bloom in clusters. When in bloom, flowers emit garlic smell. Colour changes from lavender to light lavender to white.



Merremia tridentata (L.) Hall.f. subsp. **hastata** (Hall.f.) Ooststr.

[Convolvulaceae]

(Syn: *Ipomoea hastata* Haines)

Vernacular name(s): Pravati (O); Murga (H); Arrow leaf morning glory (E).

Distribution: B-3.

Description: Twining glabrous herb. Leaves glabrous, narrow-oblong. Flowers in 1-flowered pedunculate cymes, funnel-shaped, glabrous, light yellow or cream, with dark purple centre. Capsule subglobose, 4-2 seeded. Seeds glabrous.

Mikania micrantha Kunth.

[Asteraceae]

Vernacular name(s): Khudra pushpi (O); Mikania(E).

Distribution: B-1, B-3, B-4.

Description: Herbaceous climber. Leaves deltoid-ovate, glabrescent on both sides, minutely glandular beneath. Heads cylindric, numerous in corymbs borne on short axillary branches. Achenes narrowly oblong, dark brown; pappus white.



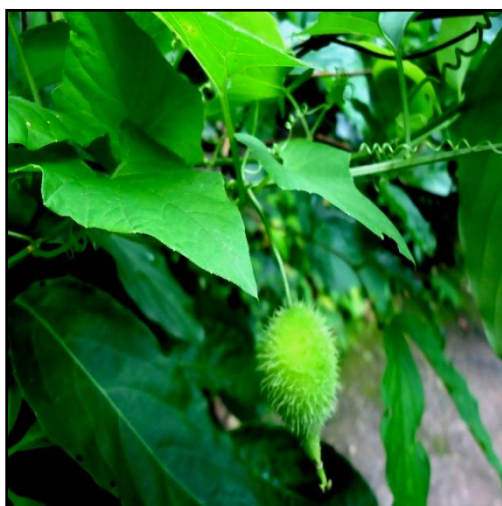
Momordica charantia L.

[Cucurbitaceae]

Vernacular name(s): Kalara (O); Karela (H); Bitter melon (E).

Distribution: B-2.

Description: Herbaceous climber. Leaves simple, alternate, 4-12 cm across, with three to seven deeply separated lobes. Each plant bears separate yellow male and female flowers. Fruit has warty exterior, an oblong shape, hollow in cross-section, relatively thin layer of flesh surrounding a central seed cavity. Seeds large, flat, pith.



Momordica dioica Roxb. ex Willd.

[Cucurbitaceae]

Vernacular name(s): Kankada (O); Ban karela (H); Teasle gourd (E).

Distribution: B-2.

Description: Slender, nearly glabrous climber. Leaves simple or three lobed, ovate. Flowers solitary axillary, yellow. Male flowers; calyx campanulate, lobes oblong-lanceolate or linear, as long as the tube. Female flowers: calyx lobes linear or linear-lanceolate. Fruit ellipsoid or ovoid covered with soft fleshy spines. Seeds ellipsoid ca. 1 cm.

Mukia maderaspatana (L.) M.Roem.

[Cucurbitaceae]

Distribution: B-3.

Description: Perennial, monoecious, climbing or trailing up to 3 m; stem bristly-hairy. Leaves sagittate, hastate, subtriangular to ovate in outline, usually \pm cordate, (12-) 15-90 (-100) mm long, sinuate-dentate to irregularly lobulate-dentate. Flowers on 1-3 mm long pedicels; calyx tube 1-2 mm long, lobes 1 mm long; petals 1-2 x 1-1.2 mm. Berries 1-7, subsessile, axillary, clustered, subglobose, scarlet, smooth, glabrous. Seeds ovate, ca. twice as long as broad.



Operculina turpethum (L.) Silva Manso

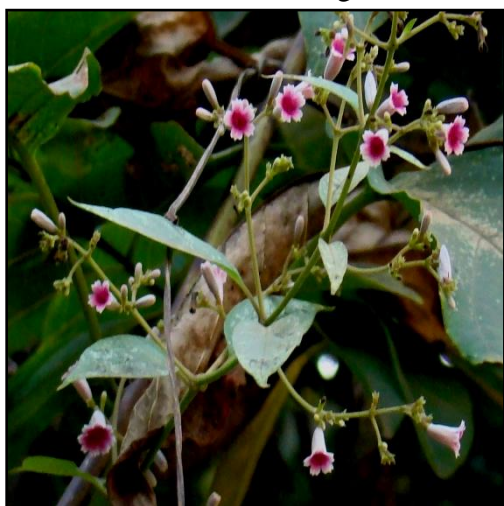
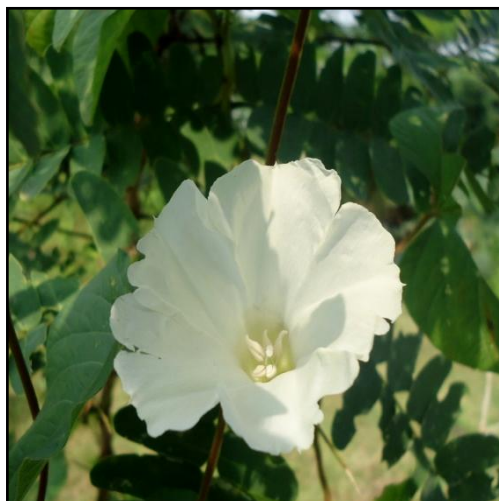
[Convolvulaceae]

[Syn: *Ipomoea turpethum* (L.) R.Br.]

Vernacular name(s): Tihudi (O).

Distribution: B-2.

Description: Perennial climbers, the Leaves orbicular, broadly ovate, ovate-lanceolate or lanceolate, 5-15 cm long, basally cordate to hastate, apically acuminate. Flowers solitary or cymose. Sepals ovate or broadly ovate, the outer 1.5-2.5 cm long. Corolla white or white with a yellowish base, campanulate to broadly funnel-shaped, 3-4.5 cm long. Fruits capsular, depressed-globose, 1.5 cm wide. Seeds dull black, glabrous.



Paederia foetida L

[Rubiaceae]

Vernacular name(s): Prasaruni (O); Gandhali (H); Skunk vine (E)

Distribution: B-2.

Description: Vines, to 5 m; Leaves opposite or rarely ternate; ovate, ovate-oblong, lanceolate, lanceolate-elliptic, or elliptic, (1-) 5-9(-21) × 1-4(-9) cm. Inflorescences axillary and/or terminal, paniculate, thyriform, 5-100 cm, branched. Flowers sessile to pedicellate lax to somewhat congested cymes. Calyx glabrous to densely puberulent. Corolla pale purple, grayish pink, lilac, or grayish white, funnelform. Fruit globose, 4-7 × 4-7 mm, glabrescent, drying gray to yellow; pyrenes concavo-convex to plano-convex.

Passiflora foetida L.

[Passifloraceae]

Vernacular name(s): Krushna Tamala (O); Jhumka lata (H); Love-in-a-mist (E).

Distribution: B-2, B-3.

Description: Stems thin, wiry and woody, covered with sticky yellow hairs. Leaves three- to five-lobed and viscid-hairy, give off an unpleasant odour when crushed. Flowers white to pale cream coloured, about 5-6 cm diameter. Fruit globose, 2-3 cm diameter, yellowish-orange to red when ripe, and has numerous black seeds embedded in the pulp.



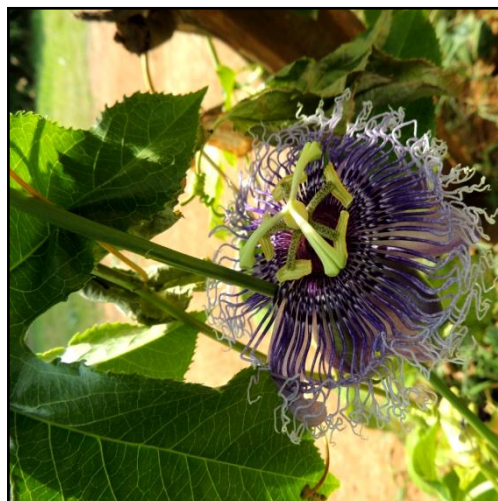
Passiflora incarnata L.

[Passifloraceae]

Vernacular name(s): Radha tamala (O); Jhumka lota (H); Purple passion flower (E).

Distribution: B-2.

Description: Perennial shrub. Leaves with 1-2 cm long; lamina broadly ovate, truncate, minutely pubescent, 3-lobed; lobes elliptic lanceolate. Flowers solitary axillary; bracts with 5-6 glands, oblong obovate; hypanthium cupular. Sepals 5, oblong. Petals 5, oblong lanceolate, acute, cuspidate, pale-pink. Corona multiseriata, purplish blue. Fruit oblong-ovoid, yellow.



Passiflora vitifolia Kunth

[Passifloraceae]

Vernacular name(s): Rakta tamala (O); Jhumka lota (H); Red passion flower (E).

Distribution: B-2.

Description: Climber with terete stems. Leaves 15-18cm, 3 lobed to middle, scalloped, glossy green above, hairy on veins beneath. Involucral bracts 2.5cm × 8mm, oblong- lanceolate, red tinged with glands on margins. Flowers to 19 cm wide. Sepal 8×2 cm, oblong lanceolate, keeled, prominently awned bright red, petals similar but smaller than sepal with out awns, corona filament in 3 rows, longest to 2 cm, erect, red-yellow. Fruit 6cm, ovoid, yellow green, mottled white, edible.

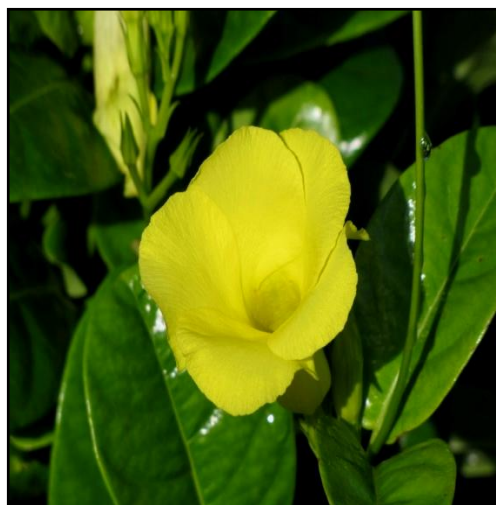
Pentalinon luteum (L.) B.F.Hansen & Wunderlin

[Apocynaceae]

Vernacular name(s): Karnaphula (O); Hammock vipers-tail, (E).

Distribution: B-2.

Description: Herbs with stolons and watery juice. Leaves opposite, entire, short petiolate, intra- and interpetiolar glands present. Flowers solitary or rarely in 2-flowered cymes, axillary. Calyx small, without glands. Corolla violet, funnel-form, tube cylindrical, hairy or with scales at throat; lobes obliquely obovate, overlapping to left. Follicles 2, cylindrical, striate. Seeds glabrous.



Pergularia daemia (Forssk.) Chiov.

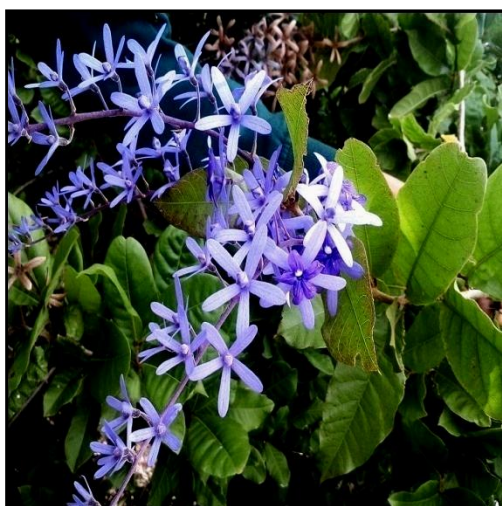
[Syn: *Pergularia extensa* (Jacq.)
N.E.Br.]

[Asclepiadaceae]

Vernacular name(s): Uturudi (O);
Jutuk (H).

Distribution: B-4.

Description: Hairy climber. Leaves membranous, broadly orbicular, pubescent beneath, deeply and broadly cordate. Flowers in long-peduncled, yellowish-green and red, drooping corymbs. Follicles lanceolate, tapering to a long beak.



Petrea volubilis L.

[Verbenaceae]

Vernacular name(s): Shyama mudrika (O);
Purple Wreath (E).

Distribution: B-2.

Description: Shrub, twining to suberect, up to 6 m tall, hairy. Leaves elliptic, ovate-elliptic to oblong, 5-20 cm long, 2.5-10 cm broad, asperous, entire or wavy at margin, usually acute; petiole 1-1.5 cm long. Racemes terminal, upto 30 cm long. Flowers blue or pale violet. Calyx petaloid, tube 2-3 mm long. Corolla salver-shaped, bright blue, tube infundibuliform. Fruit somewhat obovate-oblong, enclosed within the hardened calyx.

Philodendron scandens K. Koch &
Sello

[Araceae]

Vernacular name(s): Kathui lata (O);
Heart-leaf philodendron (E)

Distribution: B-2.

Description: Leaf blade 30×23 cm, reflexed, more or less glossy, heart shaped with about 3 principal veins from each side of mid rib. Inflorescence stalk short, spathe to 19 cm green with more or less white limb.



Piper betel L.

[Piperaceae]

(**Syn:** *Chavica betle* (L.) Miq.)

Vernacular name(s): Pana (O); Pan (H); Betel leaf vine (E).

Distribution: B-2.

Description: Climbing shrub, branches with swollen nodes. Leaves 10-16 × 5-14 cm, ovate-cordate, acuminate, entire; petiole 1-7 cm long. Male spikes 3-6 cm long. Fruiting spikes stout.



Piper longum L.

[Piperaceae]

Vernacular name(s): Pippali (O); Pipli (H); Indian Long pepper (E).

Distribution: B-2.

Description: Creeping herb, aromatic. Leaves alternate, 6-11 x 3-5.5 cm, ovate-oblong or orbicular, deeply cordate, glabrous. Flowers unisexual. Male spikes yellowish, 3-4 cm long. Female spikes upto 2 cm long. Fruit ovoid, 2 mm across.

Podranea ricasoliana (Tanf.) Sprague

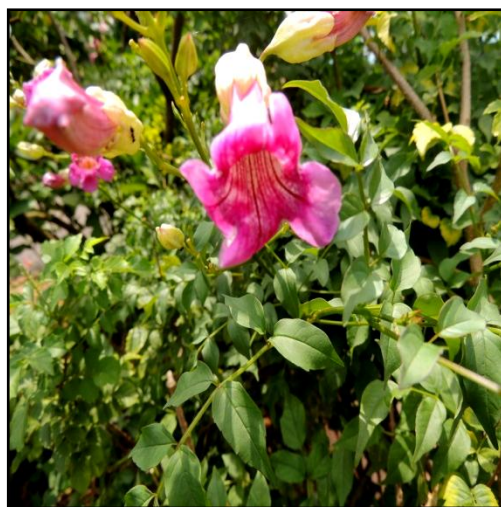
[Bignoniaceae]

(**Syn:** *Tecoma ricasoliana* Tanfani)

Vernacular name(s): Mahuri lata (O); Pink trumpet vine (E).

Distribution: B-2

Description: Vigorous climber with weakly 4 angled stems. Leaves up to 25 cm with 7-11 leaflets. Flowers fragrant, 10-12 per panicle. Calyx 1-2 cm. Corolla 7-8 cm across and almost as long, inner surface of tube pale creamy yellow, eventually white, lobes pale rose pink with deep pink veins. Fruit 25-35 cm. Seeds brown, wing pale brown.



Pyrostegia venusta (Ker.Gawl.) Miers
[Bignoniaceae]

(Syn: *Bignonia venusta* Ker -Gawl.)

Vernacular name(s): Amanalata (O);
Flame vine (E).

Distribution: B-2.

Description: Glabrous. Lateral leaflets ovate to ovate-oblong, 40-65 x 33-45 mm, entire, acuminate, base subcordate; terminal leaflet modified into a long coiled, 3-clawed tendril. Bracts 1-1.5 mm long. Flowers orange. Calyx campanulate, c. 5 mm long, truncate with a 5-toothed rim; teeth c. 0.8 mm long, subulate, pubescent. Corolla tube slender, c. 45 mm long, lobes 5, broad linear.



Quisqualis indica L.

[Combretaceae]

(Syn: *Combretum indicum* (L.) De Filippis]

Vernacular name(s): Madhu malati (O);
Rangoon creeper (E).

Distribution: B-2.

Description: Lianas to 8 m tall. Leaf blade mostly oblong-elliptic or elliptic, 5-18 x 2.5-7 cm. Flowers fragrant. Petals opening white, later turning yellowish abaxially and reddish adaxially, obovate to oblanceolate, 10-24 x 4-10 mm, apex rounded to obtuse. Fruit red when young, greenish black or brown when ripe, fusiform or narrowly ovoid, sharply 5-ridged, 2.7-4 x 1.2-2.3 cm, glabrous, apex mucronate.

Rhaphidophora decusirva (Roxb.)
Schott

[Araceae]

Vernacular name(s): Panjhali lata (O);
Creeping Philodendron (E).

Distribution: B-2

Description: Lianas, very large, to 20 m or more, very robust. Leaves scattered, each foliage leaf separated from next by several (upto 7) juvenile leaf blade ca. 16 x 13 cm, oblong-ovate, ovate in outline, 60-70[-100] x 40-50 cm. Peduncle green, cylindric, very robust, 11-20 x 1.5-3 cm. Spathe initially involute, yellow on both sides, cymbiform, oblong-ovate, 17-20 x 10-12 cm. Spadix sessile, gray-green, cylindric, 15-16 x 2-3 cm, base oblique. Berry green-white, hexagonal-obconic, ca. 18 x 5 mm.



Stephnia japonica (Thunb.) Miers

[Menispermaceae]

Vernacular name(s): Akanabindhi (O); Akanadi (H).

Distribution: B-3.

Description: Climber. Leaves ovate, long pointed, with a rounded base, 4 pairs of reddish secondary nerves; leaf stalk long, joining the leaf away from the edge. Flowers minute, borne in flat-topped clusters in leaf axils. Fruits red, obovate to almost round.



Syngonium podophyllum Schott

[Araceae]

Vernacular name(s): Dhanushira (O); Goosefoot Plant (E).

Distribution: B-2

Description: Leaves sometimes with grey green markings. Leaf blade of juvenile plant 7-14 cm, cordate or pre-adult sagittate or hastate. Leaf blade 16-38×6-17cm, obovate to elliptic. Inflorescence 4-11 per axil; stalk usually less than 9 cm when in flower, spadix with female part 1-2 cm ×6-9 mm, greenish white, male part 4-7 cm.

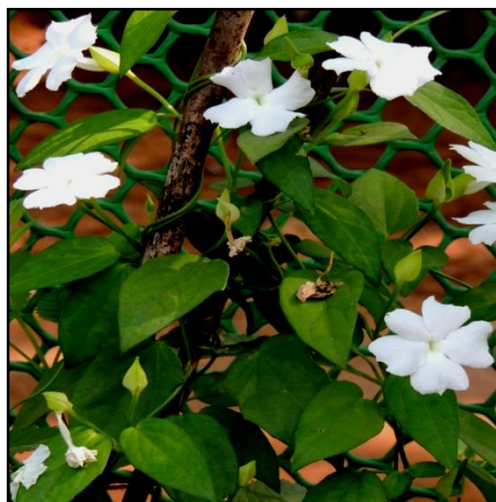
Thunbergia fragrans Roxb.

[Acanthaceae]

Vernacular name(s): Sweta toori lata (O); Sweta Sweet clock vine (E).

Distribution: B-2

Description: Vines, herbaceous. Stems almost 4-angled to flattened, sulcate, hirsute. Leaves petiolate, oblong-ovate to ovate to broadly ovate to oblong-lanceolate to lanceolate, 3-14 × 1.8-7 cm, both surfaces puberulent to subglabrous margin entire, irregularly sinuate, or shallowly coarsely dentate, apex acute to acuminate. Flowers axillary, solitary. Calyx unequally glabrous. Corolla white, sparsely puberulent; Capsule glabrous. Seeds smooth or with scales.



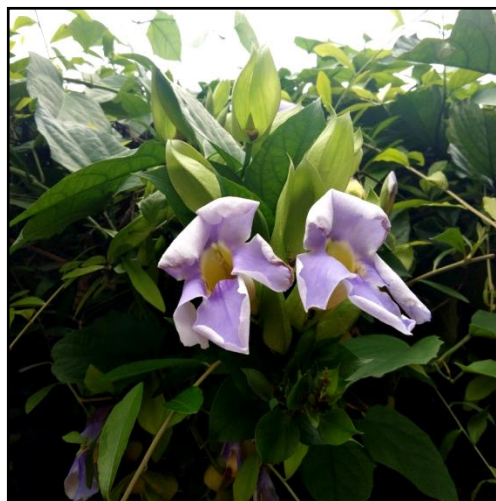
Thunbergia grandiflora Roxb.

[Acanthaceae]

Vernacular name(s): Shyma toori lata (O); Bengal clock vine (E).

Distribution: B-1, B-2

Description: Vines to 10 m or longer, woody. Leaf blade ovate to triangular-ovate, 5-10 × 4-8 cm, papery, palmately 3-7-veined, base subcordate to truncate, margin undulate, irregularly angular on basal half, or rarely entire, apex acuminate to acute. Flowers solitary, paired in leaf axils, or arranged in terminal racemes with 2-4 flowers per node. Corolla bluish with a yellowish throat, 4-6 cm, outside glabrous. Capsule 1.2-1.5 cm, pubescent. Seeds ovate in outline, compressed, verrucose.



Tinospora cordifolia (Thunb.) Miers

[Menispermaceae]

Vernacular name(s): Guluchi lata (O); Gulancha (H); Indian Tinospora (E).

Distribution: B-2.

Description: Climbing shrub with heart-shaped leaves. Stems about 6 cm in diameter, with light grey, papery bark. Leaves are 7.5-14 cm long, 9-17 cm broad, broadly ovate or orbicular, deeply heart shaped at the base. Tiny greenish yellow flowers occur in racemes 7-14 cm long. Flowers have 3+3 sepals in 2 layers, the outer ones are small, the inner large.

Trichosanthes cucumerina L. var **anguina** (L.) Haines,

[Cucurbitaceae]

Vernacular name(s): Chhachindra (O); Chachinda (H); Snake gourd (E).

Distribution: B-2.

Description: Climber. Stems often angled. Leaves long-petioled, orbicular-reniform or broadly ovate, 7-10 x 8-12 cm, 5-7 angled or lobed. Flowers white, monoecious; male and female from the same axil, male raceme 6-7 or up to 20 cm long and ebracteate; female flowers shortly stalked. Calyx-tube 3.7-18 mm long. Petals fimbriate. Fruit spindle-shaped rostrate.



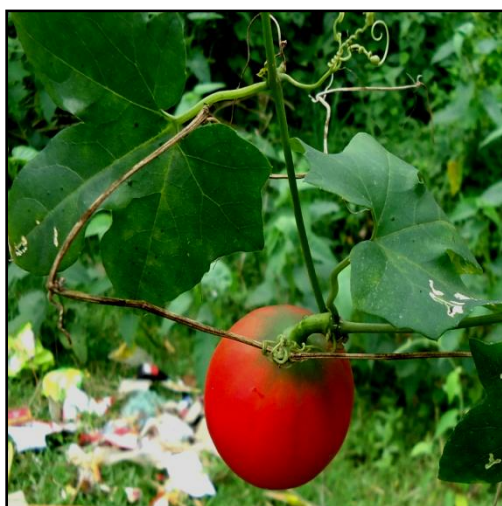
Trichosanthes dioica Roxb.

[Cucurbitaceae]

Vernacular name(s): Potala (O); Parval (H); Pointed gourd (E).

Distribution: B-2.

Description: Climber, stem angled, hispid and softly hairy. Leaves ovate, cordate, margin denticulate, tendrils usually forked. Flowers axillary, males often paired, one short, the other long-peduncled; female flowers short-peduncled. Seeds globose.



Trichosanthes tricuspidata Lour.

[Cucurbitaceae]

(**Syn:** *Trichosanthes bracteata* (Lam.) Voigt.

Vernacular name(s): Mahakala phala (O); Mahakal (H); Indrayan (E).

Distribution: B-4

Description: Stems robust, branched, angular-striate, grooved, glabrous. Leaf blade adaxially deep green, broadly ovate-cordate, 12-13 × 12-13 cm, thinly leathery, shortly 3-lobed; lobes ovate-triangular. Male raceme 12-15 cm; calyx tube narrowly funnelform. Female flowers and fruit not seen.

Tylophora indica (Burm. f.) Merr.

[Asclepidaceae]

(**Syn:** *Cynanchum indicum* Burm. f.)

Vernacular name(s): Antamul (O & H); Indian ipecac (E).

Distribution: B-2

Description: Root stock 2.5-5 cm, thick. Leaves, 6-11 cm long, 3.8-6 cm wide, ovate-oblong to elliptic-oblong, with a narrow tip, heart-shaped at base, thick, velvety beneath when young, smooth above. Leaf stalks up to 1.2 cm long. Flowers small, 1-1.5 cm across, 2 to 3-flowered fascicles in cymes in leaf axils. Sepal tube divided nearly to the base, densely hairy outside, lanceolate. Flowers greenish-yellow or greenish-purple, with oblong pointy petals. Fruit is a follicle.



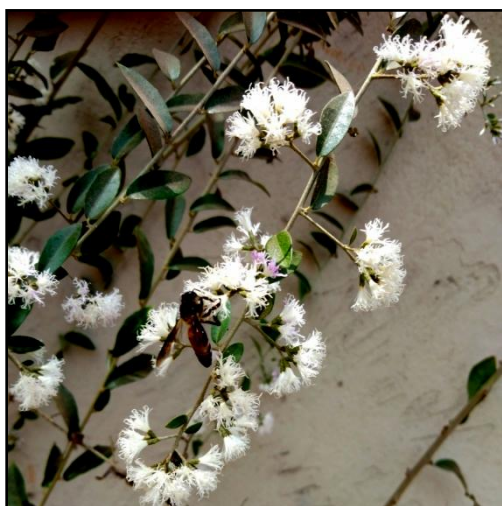
Typhonium trilobatum (L.)Schott
[Araceae]

(Syn: *Arum trilobatum* L.)

Vernacular name(s): Tripatri saru (O); Bengal arum (E).

Distribution: B-2.

Description: Leaf blade cordate-ovate in outline, usually deeply 3-lobed, rarely 5-lobed; central lobe ovate, 10-15 × 6-11 cm, acuminate, sometimes mucronate; lateral lobes 8-13 cm. Inflorescence appearing after leaves; peduncle 5-10 cm, elongating in fruit. Spathe convolute at base, outside green, to 30 cm, ovoid or ellipsoid, constricted at apex; limb spreading, outside green, inside dark purple to reddish purple, ovate-lanceolate, ca. 15 × 5-8 cm, apex acuminate. Spadix shorter than spathe; female zone slightly conic, 7-10 mm. Berries at first green with purple spots, white when mature, ellipsoid, 1- or 2-seeded.



Vernonia elliptica DC

[Asteraceae].

[Syn: *Strobocalyx elliptica* (Candolle) Schultz]

Vernacular name(s): Lata sahadevi (O); Parda bael (H); Curtain creeper (E).

Distribution: B-1, B-2.

Description: Scandent shrubs. Leaf blade elliptic-oblong, 2-6.5(-10) × 1-4(-6) cm, base cuneate to rounded, margins entire, apex subacute. Synflorescences terminal and subterminal, panicles elongated, thyrses like. Capitula clustered at tips of branches. Involucre tubular, 3-4 × 1.5-2.5 mm; phyllaries ca. 4-seriate, tinged purple at tip, apex rounded, inner oblong-elliptic. Florets 5; corolla pale pink, 5-6 mm. Achenes pale brown, cylindrical-clavate, 1.8-2.2 mm, 5-angled. Pappus tawny-white; inner setae 4-5.5 mm, scabrid.

Vitis vinifera L.

[Vitaceae]

Vernacular name(s): Angur (O & H);
Grape (E).

Distribution: B-2.

Description: Branchlets terete, with longitudinal ridges, glabrous or sparsely pilose; tendrils bifurcate. Leaves simple, conspicuously 3–5-lobed; leaf blade oval, basal veins 5, lateral veins 4 or 5 pairs; base deeply cordate, notch rounded, margin 22–27-toothed on each side. Panicle sparse or dense, opposite to leaves, basal branches well developed, 10–20 cm. Calyx glabrous, undulate. Filaments filiform. Berry globose or elliptic.



* * *

EPIPHYTES

Vanda tessellata (Roxb.) Hook. ex G. Don

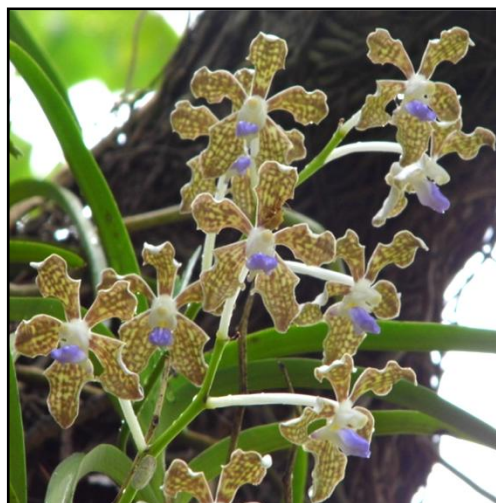
[Orchidaceae]

(Syn: *Vanda roxburghii* R.Br.)

Vernacular name(s): Rasna (O); perasara (H); Checkered Vanda (E).

Distribution: B-2.

Description: medium to large sized, epiphytic orchid, with a climbing stem. Leaves linear, narrow, 3-toothed at the tip. Plant blooms on a sub-erect, 15-50 cm long inflorescence carrying 5 to 12, fragrant, long-lived flowers. Flowers 4-5 cm across. Sepals and petals have undulating margins and are pale green, yellowish green or somewhat bluish with checkered lines of olive-brown on the inner surface; outer surface is white, while the lip is violet-purple with a white margin, and usually deeper purple towards the tip.



Dendrobium ursula Strengé

[Orchidaceae]

(Syn: *Dendrobium lineale* Rolfe)

Vernacular name(s): Prustha chitra (O);

Distribution: B-2.

Description: Stems erect, cylindrical, 10-60 cm, stout, to 1.3 cm in diam., fleshy. Leaves oblong, 6-11 × 1-3 cm, leathery, base with clasping sheath. Inflorescences arising from old stems before or after leaves have fallen, 2-4 cm, 1-4-flowered; peduncle 5-15 mm; floral bracts ovate-lanceolate, 6-13 mm, membranous, apex acuminate. Flowers large, all parts pinkish white, tinged with pale purple at apex, central purplish white spot, Petals ± obliquely broadly ovate, 25-35 × 18-25 mm, lip broadly ovate, 25-35 × 22-32 mm, both surfaces densely pubescent, base shortly clawed, embracing column below middle, margin shortly ciliate.

GRASSES

***Aristida setacea* Retz.**

[Poaceae]

Vernacular name(s): Ghora-lenji (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Grass, simple or fastigiately branched; erect culm. Leaves flat. Panicle pale, contracted, inclined, feathery with close clusters of branches; branches scaberulous. Lemma tapering into rigid, strong base of 3-fid awn, scaberulous.



***Bambusa arundinacea* (Retz.) Willd.**

[Poaceae]

Vernacular name(s): Kanta baunsa (O); Bans (H); Thorny bamboo (E).

Distribution: B-2.

Description: Culms shining, bright green; culm-sheaths striate, plaited on the edges, rounded at the top. Leaves linear-lanceolate, glabrous or puberulous beneath. Spikelets in close dense clusters along the twigs. Caryopsis oblong-linear.

***Bambusa vulgaris* Schrad. ex J.C.Wendl.**

[Poaceae]

Vernacular name(s): Baunsa (O); Bans(H); Bamboo (E).

Distribution: B-2.

Description: Culms loose without thorns, green stripes. Stem inflexible, thick-walled, initially strong, not straight, not easy to split. Nodes slightly inflated, internode 20–45 cm. Leaves are deciduous, dark green, blades narrowly lanceolate. Flowering is not common, and there are no seeds.



Bothriochloa pertusa (L.) A. Camus
[Poaceae]

(**Syn:** *Amphilophis pertusa* (L.) Nash ex Stapf)

Vernacular name(s): Basana (O); Sandhur (H);

Distribution: B-1, B-2, B-3, B-4.

Description: Erect or ascending culm, stoloniferous. Leaves with long hairs near base; sheaths usually scaberulous, short ligule. Racemes shortly pedunculate, 3-9, digitate. Sessile spikelets. Lower glume narrowly elliptic-oblong. Lower lemma lanceolate.



Brachiaria distachya (L.) Stapf
[Poaceae]

Vernacular name(s): Nari (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Annuals or perennials grass. Culms 12-40 cm long, creeping or decumbent, rooting at the nodes; nodes glabrous. Leaves lanceolate, shallowly cordate at base, softly hairy or glabrous; sheaths 1-2.5 cm, ciliate along one margin; ligule a tuft of hairs or fimbriate. Racemes 2 or rarely 3, hairy or puberulous below the rachis. Spikelets 2-3 mm long, elliptic, solitary.

Brachiaria mutica (Forssk.) Stapf
[Poaceae]

Vernacular name(s):

Distribution: B-4.

Description: Grass. Leaves linear-lanceolate. Racemes numerous. Spikelets solitary, densely, untidily crowded in more than 2 rows on rachis, lanceolate, glabrous.



Brachiaria ramosa (L.) Stapf
[Poaceae]

Vernacular name(s): Banspalli (O);

Distribution: B-1, B-3, B-4.

Description: Leaves linear or lanceolate, glabrous or pubescent. Racemes erect; panicle oblong or pyramidal. Spikelets elliptic-obovate, usually pubescent or glabrous. Lower glume truncate; upper glume membranous. Lemma elliptic, apiculate. Palea flat.



Chloris barbata Sw.

[Poaceae]

Vernacular name(s): Jargi gandi (H).

Distribution: B-1, B-2, B-3, B-4.

Description: Ascending culms. Leaves linear, smooth or scaberulous, hairy at base. Spikes erect at top of culm, crowded, 6-15 (20). Spikelets usually purplish. Lower lemma obovate, rounded; palea broadly lanceolate. Caryopsis oblong.

Chrysopogon aciculatus (Retz.) Trin.
[Poaceae]

Vernacular name(s): Guguchia (O);
Surwala (H);

Distribution: B-1, B-4.

Description: Culms decumbent. Leaves densely tufted. Panicle usually turning red or purple. Spikelets sessile. Lower glume linear, convex cymbiform, keel hispid above, aristulate. Lower lemma hyaline, lanceolate, 2-nerved; palea oblong, hyaline, obtuse.



Cynodon dactylon (L.) Pers.

[Poaceae]

Vernacular name(s): Duba ghasa (O);
Dub (H); Indian doab (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Decumbent culms, glabrous. Leaves linear or lanceolate, conspicuously distichous, spreading, subulate, glaucous. Inflorescence digitate, green or purplish spikes. Spikelets 1-flowered, awnless. Caryopsis oblong.



Cyperus brevifolius (Rottb.) Hassk.

[Cyperaceae]

(Syn: *Kyllinga brevifolia* Rottb.)

Vernacular name(s): Harit mutha (O);

Distribution: B-1, B-4.

Description: Herb. Stem rigidulous, triquetrous with flat sides. Rhizome covered with ovate-lanceolate reddish-brown scale. Leaves canaliculated, glabrous. Inflorescence capitate, usually consisting of terminal globose to ovoid, greenish head. Spikelets elliptic, oblong, closely packed, 1-2 flowered. Nut biconvex, ellipsoid.

Cyperus compactus Retz.

[Cyperaceae]

[Syn: *Mariscus compactus* (Retz.)
Bold.]

Vernacular name(s): Badoli (O);

Distribution: B-4.

Description: Rhizome short; stems 2-3, subcaespitose, obtusely trigonous; sheath reddish-brown spongy. Leaves rigid, canaliculated, glaucous. Spike globose, very dense, with numerous stellately spreading spikelets. Nut trigonous, brown.



Cyperus difformis L.

[Cyperaceae]

Vernacular name(s): Swonli (O);

Distribution: B-1, B-3, B-4.

Description: Stem tufted, triquetrous. Leaves flaccid, several nerved. Inflorescence simple or compound. Spikes very dense, globose, with numerous spikelets. Spikelets stellately spreading, linear. Nuts unequally trigonous, pale brown.



Cyperus halpan L.

[Cyperaceae]

Vernacular name(s): Naga mastaki mutha (O);

Distribution: B-1, B-3.

Description: Trigonous stem. Leaves flat; lower sheath reddish. Inflorescence simple or compound, loose to dense; rays numerous, unequal. Spikelets digitately arranged in clusters of 3-8, grey or reddish, linear-lanceolate. Nut trigonous, whitish, broadly obovoid.

Cyperus imbricatus Retz.

[Cyperaceae]

(Syn : *Cyperus radiatus* Vahl)

Vernacular name(s): Byasa mutha (O);

Distribution: B-4.

Description: Tufted, trigonous stem. Leaves canaliculated; lower sheath purplish black to stramineous. Inflorescence simple or compound. Spike cylindric, digitately arranged. Spikelets suberect, imbricate, spicately arranged, 6-20 flowered. Nut ellipsoid, trigonous.



Cyperus iria L.

[Cyperaceae]

Vernacular name(s): Swanti (O);

Distribution: B-1, B-4.

Description: Solitary or tufted, trigonous stem. Leaves basal. Inflorescence simple or compound, usually loose. Spikes oblong-ovoid, narrow, 5-20 spikelets. Spikelets spicately arranged, linear-oblong, yellow or pale brown. Nut trigonous, shining dark brown, obovoid.



Cyperus kyllingia Endl.

[Cyperaceae]

(Syn: *Kyllingia monocephala* Rottb.)

Vernacular name(s): Sweta mutha (O);

Distribution: B-1, B-3, B-4.

Description: Triquetrous stem. Leaves flaccid or rigidulous; sheaths with red glands. Inflorescence capitate, ovoid-globose head, terminal. Spikelets very closely packed, obliquely ovate-elliptic, strongly compressed. Nut biconvex, oblong.

Cyperus paniceus (Rottb.) Boeck.

[Cyperaceae]

[Syn: *Mariscus paniceus* (Rottb.) Vahl]

Vernacular name(s): Manjori mutha (O);

Distribution: B-4.

Description: Very slender stem, reddish-brown striate sheaths. Leaves narrow. Inflorescence simple. Spikelets sessile, shortly cylindrical, lanceolate, slightly curved, horizontally spreading, always bearing 1 nut. Nut small, oblong.



Cyperus pygmaeus Rottb.

[Cyperaceae]

[Syn: *Juncellus pygmaeus* (Rottb.)
C.B.Cl.]

Vernacular name(s): Chota mutha
(O);

Distribution: B-4.

Description: Tufted herb; stem triquetrous. Leaves canaliculated, flaccid. Inflorescence contracted into triangular-ovoid to subglobose, lobed head; spikelets often incurved, linear or ovate, 10-20 flowered, strongly compressed. Nut trigonous, pale brown.



Cyperus rotundus L. var. **rotundus** Kern.

[Cyperaceae]

Vernacular name(s): Mutha (O & H);
Nut grass (E).

Distribution: B-1, B-2, B-3.

Description: Slender, triquetrous stem, tuberous at base. Leaves mostly radical, with reddish brown sheaths. Inflorescence simple or compound; spike ovoid, loose to dense; spikelet spicately arranged, strongly compressed, 10-40 flowered. Nut trigonous.

Cyperus triceps Endl.

[Cyperaceae]

(Syn: *Kyllinga triceps* Rottb.)

Vernacular name(s): Trisira mutha
(O);

Distribution: B-4.

Description: Tufted, slender, obtusely trigonous stems. Leaves flat or slightly conduplicate. Inflorescence capitate, consisting usually 3, sessile head subglobose. Spikelets numerous, oblong, strongly compressed, whitish to pale green. Nut brown, biconvex.



Dactyloctenium aegypticum (L.)
P.Beauv.

[Poaceae]

(Syn: *Eleusine aegyptia* (L.) Desf.)

Vernacular name(s): Kakhuriya (O);
Makra (H);

Distribution: B-1, B-2, B-3, B-4.

Description: Culms erect or genticulate at base. Leaves ciliate on nerves or midrib and margins; sheath hairy or ciliate above. Spikes stout, spreading or suberect. Spikelets spreading at right angles from rachis. Caryopsis subglobose, very rugose.



Digitaria abludens (Roem. & Schult.)
Veldk.

[Poaceae]

[Syn: *Digitaria pedicellaris* (Trin. ex Hook.f.) Prain]

Vernacular name(s): Angusthika mutha (O);

Distribution: B-3.

Description: Grass. Leaves linear, glabrous or pubescent; sheath sparsely hairy. Peduncle slender with 3-10 alternate, filiform racemes. Spikelets 2-5-nate, elliptic, mucronate. Upper glume elliptic. Lower lemma ovate-oblong, coriaceous; palea narrower.

Digitaria ciliaris (Retz.) Koeler

[Poaceae]

(Syn: *Digitaria sanguinalis* sensu Haines)

Vernacular name(s): Angusthika mutha (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Culm decumbent at base. Leaves linear. Inflorescence digitate, composed of 2-12 racemes; racemes with sparse long white hairs, spikelets binate, overlapping. Spikelets narrowly elliptic. Caryopsis ellipsoid, grey to light brown.



Echinochloa colona (L.) Link

[Poaceae]

Vernacular name(s): Dhera (O);
Sanwak (H); Barnyard millet (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Leaves linear, glabrous or hairy. Spikelets awned, hispid, oblong or pyramidal panicle, 3-5 seriate. Lower glume concave, ovate; upper glume very concave. Lower lemma 7-nerved, back depressed; upper lemma elliptic-ovate.



Eleusine coracana (L.) Gaertn.

[Poaceae]

(Syn: *Cynosurus coracanus* L.)

Vernacular name(s): Mandia (O);
Mandua (H); Finger millet (E).

Distribution: B-2.

Description: Annual. Culms tufted, robust, erect or ascending, usually branched, 50–120 cm tall. Leaf sheaths glabrous; leaf blades flat, 30–60 × 0.6–1.2 cm, pilose or glabrous; ligule 1–2 mm. Inflorescence subdigitate, racemes 5–20, stout, often incurved at maturity, 5–10 × 0.8–1.5 cm, hairy at base. Spikelets very closely imbricate, ovate, 5–9 mm, florets 6–9, Grain yellowish brown, globose, finely striate-punctate.

Eleusine indica (L.) Gaertn.

[Poaceae]

Vernacular name(s): Nandia (O);
Mandla (H); Crab grass (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Tufted grass. Leaves glabrous, linear, flat or complicate; sheath loose. Spikes erect, slender, 3-7. Spikelets 3-5 flowered. Lower glume 1 nerved; upper glume 3-nerved, apiculate, keel scaberulous. Lemmas cymbiform, obtuse. Palea shorter, 2-nerved.



Eragrostis ciliaris (L.) R.Br.

[Poaceae]

Vernacular name(s): Pakhya
pritimanjari (O); Love grass (E).

Distribution: B-3.

Description: Grass; culms slender. Leaves flat to convolute. Panicle spike-like. Spikelets densely crowded, ovate, often purplish, 6-12 flowered. Lemma oblong.



Eragrostis ciliata Roxb. Nees

[Poaceae]

Vernacular name(s): Pakhya
pritimanjari (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Culms many, erect or ascending. Leaves short, linear or linear-lanceolate. Panicle densely spike-like, spikelets much compressed; glumes acute, ciliate; lemmas long, acuminate. Caryopsis 0.5 mm long, terete.

Eragrostis unioides (Retz.) Nees ex Steud.

[Poaceae]

[**Syn:** *Eragrostis amabilis* auct. non (L.) Wight & Arn. ex Hook. & Arn.]

Vernacular name(s): Phur phuri (O);

Distribution: B-1, B-2, B-3, B-4.

Description: Culms loosely tufted or solitary, glabrous. Leaves basal, linear, mostly convolute, glabrous. Panicle narrow or ovate-oblong, contracted. Spikelets green, pale or reddish purple, ovate-oblong, compressed, 16-70 flowered. Caryopsis ellipsoid.



Eriochloa procera (Retz.) C. E. Hubbard

[Syn: *Eriochloa annulata* (Flugge) Kunth]

Distribution: B-1, B-2, B-3, B-4.

Description: Annual; culms 20-100 cm high, erect or geniculately ascending. Leaf-blades 2-30 cm long, 2-4 mm wide. Inflorescence 4-20 cm long; racemes 2-10 cm long, the rhachis puberulous, triquetrous, bearing paired spikelets; pedicels commonly glabrous, those of a pair often fused below. Spikelets lanceolate, (2.5)3.4 mm long, thinly pubescent; lower glume absent; upper glume acute to acuminate; lower -flore represented only by a lemma; upper lemma with a mucro 0.3-0.5 mm long.



Paspalum scrobiculatum L.

[Poaceae]

Vernacular name(s): Banspalli (O); Kodaka (H); Kodo mille (E).

Distribution: B-2, B-3.

Description: Annuals or perennials. Culms tufted, erect or creeping and rooting at the lower nodes; nodes glabrous. Leaves lanceolate to linear, base rounded, apex acuminate; sheaths long; ligules membranous, ciliate. Racemes usually 2. Spikelets 2-ranked or 3-ranked, ovate-orbicular or obovate, obtuse. Lower glume absent. Upper glume ovate or orbicular, membranous.

Paspalum vaginatum Sw.

[Poaceae]

Vernacular name(s): Banspalli (O); (H); Kodo mille (E).

Distribution: B-1, B-3.

Description: Stolons leafy, creeping. Leaves flat or involute, linear, usually with long white hairs at immediate base of ligule. Racemes 2, opposite. Spikelets solitary, oblong-lanceolate, glabrous, pale green. Caryopsis ovate.





Pennisetum pedicellatum Trin.

[Poaceae]

Vernacular name(s): Rakta tulika (O);

Distribution: B-1, B-3, B-4.

Description: Culms fastigiately branched above. Leaves, flat, linear, sparsely hairy or glabrous. Spikes cylindric, pink or purple, conspicuous by involucral tuft of densely plumose bristles. Spikelets solitary, pedicelled or in group of 2-5.

Pennisetum purpureum Schumach.

[Poaceae]

(Syn: *Pennisetum benthamii* Steud.)

Vernacular name(s): Elephant grass (E).

Distribution: B-3, B-4.

Description: Perennial forming large tussocks, often with short rhizomes. Culms robust, decumbent and rooting at the base, ascending to 2–4 m tall. Leaf sheaths glabrous or hispid; leaf blades linear, up to 120 × 5 cm, ligule 1.5–5 mm. Inflorescence linear, 10–30 × 1–3 cm, golden, brownish or purplish; 1–5 spikelets. Spikelets 5–7 mm; lemma 1/2–3/4 spikelet length, 5–7-veined, minutely hispidulous, acuminate.



Perotis indica (L.) Kuntze

(Syn: *Anthoxanthum indicum* L.)

Vernacular name(s): Sambalua ghasa (O);

Distribution: B-3, B-4.

Description: Annual. Culms loosely tufted, erect or decumbent at base, 20–30 cm tall. Leaf sheaths usually glabrous; leaf blades lanceolate to narrowly ovate, flat or margins involute, tough, 2–4 cm, 2–5 mm wide. Inflorescence upto 12 cm; spikelets usually densely arranged, ascending or horizontally spreading; rachis scabrous. Spikelets 1.5–2.5 mm (excluding awns) Caryopsis terete, narrowly ellipsoid, 1–1.8 mm.

Pogonatherum crinitum (Thunb.)
Kunth
[Poaceae]

(Syn: *Ischaemum crinitum* (Thunb.)
Trin.)

Vernacular name(s): Baunsa
ghasa(O); Bamboo grass (E).

Distribution: B-2.

Description: Slender perennial; culms
wiry, weak, often trailing, 10-30 cm
long. Leaf-blades 1-4 cm long, 1-3 mm
wide. Racemes 1-3 cm long, spikelets
narrowly elliptic-oblong, 13-20 mm
long.



Saccharum officinarum L.

[Poaceae]

Vernacular name(s): Akhu (O);
Ganna (H); Sugar cane (E).

Distribution: B-2.

Description: Perennial, Culms 3–6 m tall,
2–5 cm in diam., 20–40-noded, solid. Leaf
sheaths glabrous, pilose at mouth; leaf
blades 70–150 × 4–6 cm, usually glabrous,
midrib large, white, margins sharply
serrate. Panicle 50–100 cm, racemes 10–25
cm; spikelets 3.5–4 mm; callus hairs 2–3
times length of spikelet; lodicules glabrous.

Setaria pumila (Poir.) Roem. &
Schult.

[Poaceae]

(Syn: *Setaria glauca* Hack)

Vernacular name(s): Sial lenguda (O);
Bandri (H); Yellow bristle grass (E).

Distribution: B-1, B-3, B-4.

Description: Tufted culms, striate
above. Leaves flat, narrow, often with
long, soft hairs above, tip long filiform,
glabrous sheath. Panicle narrowly
cylindrical, spiciform, dense. Spikelets
ovoid to elliptic-oblong, often yellow;
bristles 8-12.



Setaria verticillata (L.) P.Beauv.

[Poaceae]

Vernacular name(s): Rough bristle grass (E).

Distribution: B-1, B-4.

Description: Tufted, dwarf grass. Leaves flat, linear-lanceolate. Panicle cylindrical. Spikelets solitary or in cluster of 2-3, oblong-ellipsoid. Bristles 1-4, retrorsely barbed. Caryopsis oblong or ellipsoid, tightly enclosed in hardened lemma and pelea.



Sorghum vulgare L.

[Poaceae]

[Syn: *Sorghum bicolor* (L.) Moench]

Vernacular name(s): Juar, (O); Jowar (H); Indian millet, Jowar (E).

Distribution: B-2.

Description: Stout, usually tall annual. Leaves broadly linear with a prominent white midrib. Panicle usually thyriform, decompose, with crowded whorls of erect, flexuous branches and branchlets; axils villous.

Zea mays L.

Vernacular name(s): Makka (O); Makka (H); Maize, Indian corn (E).

Distribution: B-2.

Description: Robust grass upto 3 m. Leaves hairy above, 90 x 10 cm, ciliate on the margins. Male spikelets ovate-oblong, 6.2-8.7 mm long. Glumes oblong or ovate-lanceolate. Lower floret male or barren; lemma a little shorter than the glumes. Female inflorescence axillary, sessile. Caryopsis shining, hard.



* * *

GYMNOSPERMS

Araucaria columnaris (Forst.f.) Hook.
[Araucariaceae]

Vernacular name(s): Cook pine (E).

Distribution: B-2.

Description: Narrowly conical tree. Tall, slender, spire-like crown, relatively short, mostly horizontal branches in whorls around the slender, upright to slightly leaning trunk. Branchlets covered with small, green, incurved, point-tipped, spirally arranged, overlapping leaves. Bark peels off in thin paper-like sheets or strips, rough, grey, and resinous.



Cycas revoluta Thunb.

[Cycadaceae]

Vernacular name(s): Odashamari (O); Sago palm (E).

Distribution: B-2.

Description: Thick shaggy trunk branched or unbranched. Leaves shiny, dark green, arranged in crown; leaflets stiff, narrow, edges strongly recurved or revolute; basal leaflets become more like spines; petiole or stems long, have small protective barbs. Coralloid roots present.

Juniperus communis L.

[Cupressaceae]

Vernacular name(s): Shyamshanku (O); Common juniper (E).

Distribution: B-2.

Description: Dioecious, shrubby decumbent plant. Branches dense. Leaves in whorls of threes, 8-12 x 2-4 mm, subulate, pungent, jointed at base, ± curved to suberect. Male cones axillary, c. 8 mm long. Female cones solitary, 20 mm long, scales 3. Fruit subglobose, bluish-black, 8-12 mm broad. Seeds 2-3, ovoid.



Pinus roxburghii Sargent,
[Pinaceae]

(Syn: *Pinus longifolia* Roxb.)

Vernacular name(s): Pine (O); Chir (H); Chir pine, Himalayan long-leaf pine (E).

Distribution: B-2.

Description: Trees to 55 m tall; bark dark red-brown, thick, deeply and longitudinally fissured, scaly; winter buds brown, small, ovoid, not resinous. Needles 3 per bundle, slender, flabellate-triangular in cross section, resin canals 2, median, base with persistent sheath 2-3 cm. Seed cones shortly pedunculate, ovoid, 10-20 × 6-9 cm. Seed scales oblong, thick, stiff; apophyses strongly swollen, conspicuously transversely ridged; umbo triangular, protruding. Seeds 8-12 mm; wing ca. 2.5 cm.



Podocarpus neriifolius D. Don

[Podocarpaceae]

[Syn: *Margbensonia neriifolia* (D. Don) Bobrov & Melikyan;]

Vernacular name(s): Padaphala (O); Brown pine (E).

Distribution: B-2.

Description: Trees to 25 m tall. Leaf blade lanceolate, usually slightly curved, (4-)7-15(-20) × (0.5-)0.9-1.3(-2) cm, leathery, base cuneate into short petiole, apex long acuminate. Pollen cones solitary or in clusters of 2 or 3, normally sessile, 2.5-5 cm, with several spirally arranged, basal bracts. Seed-bearing structures axillary, solitary; peduncle 0.9-2.2 cm. Receptacle orange-red when ripe, obconical-ellipsoid, 8-10 × 5-8 mm, base with 2 subulate bracts 2-6 mm. Seed ovoid or ovoid-subglobose, 0.8-1.6 cm.

Platycladus orientalis (L.) Franco
[Cupressaceae]

(Syn: *Thuja orientalis* L.)

Vernacular name(s): Mayurachandrika (O); Mayurpankha (H); Oriental Thuja (E).

Distribution: B-2.

Description: Trees to 15(-38) m tall; bark reddish brown or grayish brown, fibrous, fissured; crown conical. Leaves on both sides of branchlets dull yellowish-green; facial leaves (1.5-)3-5 mm, abaxial gland conspicuous, apex acute; lateral leaves slightly shorter than or as long as facial leaves, apex incurved. Pollen cones reddish, 1-2 mm. Seed cones brown, ellipsoid. Seeds reddish-brown, 4-7 mm including wings



PTERIDOPHYTES



Adiantum incisum Forssk.

[Adiantaceae]

Vernacular name(s): Shailachhanda (O); Mayur sikha (H); Maiden-hair Fern (E).

Distribution: B-4.

Description: Tufted fern. Stipes 5-10 cm long, tufted, wiry, spreading, dark chestnut-brown, tomentose. Fronds 15.25-30 cm long, simply pinnate, often elongated and rooting at the extremity, sori roundish or transversely oblong on the edge of the lobes.

Adiantum philippense L.

[Adiantaceae]

Vernacular name(s): Shailachhanda (O); Maiden-hair Fern (E).

Distribution: B-1, B-2, B-3, B-4.

Description: A small and delicate fern. Rhizome short, sub-erect, the apex covered with scales. Fronds tufted, herbaceous, arching. Stipe upto 20 cm long, dark brown to black, shiny, glabrous. Lamina pinnate, linear to lanceolate in outline; 36 × 11 cm, excluding a glabrous extension of the rachis of varying length, which often ends in a proliferous bud or lamina.



Ampelopteris prolifera (Retz.) Copel.
[Thelypteridaceae]

(Syn: *Nephrodium proliferum* Keys)

Vernacular name(s): Lata Pakhi (O);
Prolific Ampelopteris (E).

Distribution: B-2, B-4.

Description: Wide creeping herb, with stout rhizome. Fronds erect, tufted or creeping, clambering with long barren pinnate fronds, lanceolate, pinatifid, lobed; pinnae with bluntly lobed or crenate margins; veinlets often wavy 6-10. Sori median on venules.



Azolla microphylla Kaulf

Vernacular name(s): Chuni dala (O);
Azolla (E).

Distribution: B-4.

Description: Plants green or often blue-green to dark red, free-floating or forming a multilayer mat to 4 cm thick in early summer. Stems prostrate, 1-1.5 cm. Largest hairs on upper leaf lobe near stem 2(-3)-celled; broad pedicel cell often 1/2 or more height of hair, apical cell curved, with tip nearly parallel to leaf surface. Megaspores not covered with raised angular bumps, pitted and sparsely covered with a few long filaments extending over surface.

Ceratopteris thalictroides (L.) Brongn
[Ceratopteridaceae]

Vernacular name(s): Shrunga Pakhi (O);
Horned fern (E).

Distribution: B-4.

Description: Plants usually rooted in soil. Sterile leaves lanceolate to lance-ovate to ovate to deltate or cordate. Petiole of sterile leaf 1-31 cm, not inflated. Fertile leaves lanceolate to ovate to deltate or cordate, 2-117 × 2-48 cm. Petiole of fertile leaf 1-46 cm. Blade of fertile leaf 3-4-pinnate proximally, 2-pinnate distally; terminal segments linear. Sporangia usually crowded between segment midvein and revolute margin. Spores 32 per sporangium.



Dryopteris cochleata (D. Don) C. Chr
[Dryopteridaceae]

(Syn: *Lastrea cochleata* Bedd.)

Vernacular name(s): Kastha pakhi (O); Common male fern, (E).

Distribution: B-2, B-4.

Description: Tufted large fern. Stipes pale, shining, base with brown fibrillae and linear-oblong scale. Fronds dimorphic, barren sub-pinnate, oblong-lanceolate, close, pinnules ovate-oblong. Sori indusiate, round; spores bilateral.



Marsilea minuta L.

[Marsileaceae]

Vernacular name(s): Sunsunia saga (O); Water clover (E).

Distribution: B-4.

Description: Stipe variable, glabrous or pubescent; leaflets cruciform, oblanceolate, usually glabrous. Pedicels 2-6, basal, slightly connate or free. Sporocarps 2-4, variable in size and shape, distinctly ribbed and boarded, glabrous or hairy; sori 8-12.

Marsilea quadrifolia L.

[Marsileaceae]

Vernacular name(s): Sunsunia saga (O); Water clover, Pepper wort (E).

Distribution: B-4.

Description: Rhizomes creeping. Fronds with stipes green to straw-colored, 10-18 cm, slender, glabrate; pinnae obtriangular to fan-shaped, 0.8-1.6 × 0.7-1.5 cm, margin entire, glabrate. Sporocarps (1 or)2-5(-7) per frond, attached at base of stipe where stipe joins plus an additional?? 1.5 mm adnate to sporocarp, glabrate; sporocarp brown to black, elliptic in lateral view, 3.5-4 × 2.9-3.2 × ca. 2 mm, softly leathery, convex on lateral sides, obtuse to rounded on perimeter.



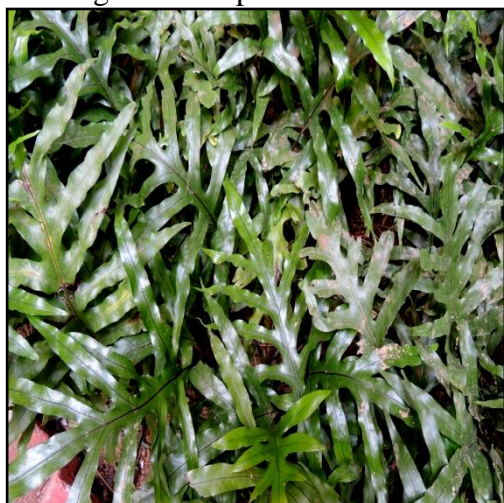
Nephrolepis exaltata Schott

[Nephrolepidaceae]

Vernacular name(s): Bruka kati(O); Boston fern (E).

Distribution: B-2.

Description: Sub-erect fern, with slightly drooping fronds, upto 60 - 90 cm tall and 0.5 - 1 m wide. Dagger-shaped fronds which are entire to slightly toothed, measuring about 50 - 150 cm long and 5 - 10 cm wide; pinnae; arrangement alternate and each pinna measures about 3 - 8 cm long. Sori round and arranged in 2 rows near the margins of the pinnae.



Phymatosorus membranifolius (R. Br.)

S. G. Lu

[Polypodiaceae]

[Syn: *Phymatosorus nigrescens* (Blume)

Pichi Sermolli]

Vernacular name(s): Speetharennu(O);

Pimple fern (E).

Distribution: B-2.

Description: Rhizome 10-15 mm in diam., scaly; scales brown, orbicular or oblong. Stipe straw-colored, 30-40(-50) cm, ca. 5 mm in diam., dark green, 50-80 × 30-40 cm, or simple, 15-25 × 4-5 cm; lateral lobes usually (2 or)3-10(-12) pairs, ascending, broadly lanceolate, 15-20 × 3-4 cm, papery, both surfaces glabrous, base somewhat narrowed, margin subentire,

Pteris vittata L.

[Pteridaceae]

Vernacular name(s): Mrudhhekangu (O); Chinese brake (E).

Distribution: B-1, B-2, B-3, B-4.

Description: Terrestrial herb, rhizome erect, densely scaly. Scales lanceolate, entire, pale brown. Leaves simple pinnate, pale green. Stipe long, green, scaly, grooved above, rounded below. Lamina simple pinnate, pale green; pinnae, oblong, acuminate or linear. Spores trilete, pale brown.



Salvinia cuculata Roxb.

[Salviniaceae]

Vernacular name(s): Indura-karni (O);
Water spangles (E).

Distribution: B-4.

Description: Leaves unequal, subsessile, subopposite; lamina broadly deltoid with rounded corners, 1 cm long and 1.2-1.8 cm broad, upper surface covered with hyaline uniseriate hairs, lower surface with brown acicular hairs. Sporocarps sessile, globose.



Salvinia molesta D.Mitch

[Salviniaceae]

Vernacular name(s): Indurakarni (O);
African pile (E).

Distribution: B-4.

Description: Floating ferns. Lamina oblong to obovate or orbicular, surface abaxially with sparse pale multicellular hairs, adaxially densely papillate. Sporocarp in long chains; microsporangia upto 53; megasporangia 2 or 3.

Selaginella ciliaris (Retz.) Spring

[Selaginellaceae]

Vernacular name(s): Pakhya Sanjibani (O);
Prickly mountain-moss (E).

Distribution: B-4.

Description: Terrestrial herbs with erect stem, 15 cm long, rooting at base only. Leaves heteromorphic throughout, ciliolate; median leaves 1.5 x 0.5 mm, lanceolate; lateral leaves 3 x 2 mm, ovate-lanceolate, obtuse; axillary leaves 2.8 x 1.8 mm, elliptic, acute. Strobili 8-10 x 3 mm, 2-sided; sporophylls dimorphic; macrospores 312.5 x 312.5 μ m, white, tetrahedral, rugose.



BRYOPHYTES

Barbula calycina Schwägr

[Pottiaceae]

Vernacular name(s): Romila (O);

Distribution: B-2, B-4.

Description: Stems to 1.5 cm. Leaves firm when wet, long-ovate to ligulate, 0.7-1.7(-2.5) mm, base often elliptic, widened not strongly sheathing, margins plane or weakly recurved to mid leaf, costa percurrent or ending 1-4 cells before the apex, abaxial costal surface doubly prorate often also with simple or 2-fid papillae, hydroids absent; distal laminal cells firm-walled, quadrate, 6-12 μm wide, papillose. Specialized asexual reproduction by gemmae borne on stalks in leaf axils. Perichaetial leaves obtuse to broadly acute, strongly sheathing and convolute. Seta 1-1.5 cm. Theca 0.5-1.7 mm. Spores 10-15 μm .



Marchantia polymorpha L.

[Marchantiaceae]

Vernacular name(s): Astirna (O);
Umbrella Liverwort (E);

Distribution: B-1, B-4.

Description: Thallus dichotomously branched thallus, that spans 2–8 cm long, 1-8 cm. across, and upto 1.5 mm in thickness; Individual lobes of the thallus 8-15 mm across, margins smooth, undulate, the tips of the lobes notched. Upper surface of the thallus bright green and glabrous, faintly indented into small linear-rectangular or rhombic sections; each section has a small white air chamber with a single barrel-shaped pore.

Riccia beyrichiana Hampe ex Lehm
[Rcciaceae]

Vernacular name(s): Bistruti (O); Purple Crystalwort (E).

Distribution: B-3, B-4.

Description: Persistent rosettes or mats upto 2.5 cm across. Branches are oblong to slightly curved, widest above the middle, upto 2.5 mm wide, usually shiny, greyish-green above, and frequently tinged reddish on the margins. Margins are swollen and rounded in section, and may have very short, colourless hairs near the tip. Old parts of the thallus become channelled and often bear capsules.



Trichostomum crispulum Bruch,
[Herbarium]

Vernacular name(s): Loma mukha (O).

Distribution: B-2.

Description: Stem rounded-pentagonal in section. Leaves naviculate, ovate to ovate-lanceolate or long-lanceolate, distal margins erect, entire, not bordered; apex blunt or rounded acute, seldom acute, cucullate; basal cells differentiated across leaf base as a U, commonly running up margins as a very narrow band of nonpapillose cells, not distinctly enlarged submarginally; distal laminal cells pluripapillose with low papillae; mucro conic, of 3-6 cells. Sexual condition dioicous.

* * *

MUSHROOMS

Agaricus bisporous (J.E.Lange) Emil. J. Imbact.

[Agaricaceae]

Vernacular name(s): Pala chhatu (O); Button mushroom, (E).

Distribution: B-2.

Description: Edible mushroom. Cap whitish-pale grey-brown, broad, flat scales. Gills narrow, crowded free, initially pink then red-brown, finally dark brown with whitish edge. Stem cylindrical, bear thick, narrow rings. Flesh white. No fragrance. Common in field and grassy area.



Agaricus compestris L.

[Agaricaceae]

Vernacular name(s): Gilled mushroom (E).

Distribution: B-4.

Description: Edible mushroom. Cap 3-7 cm wide, convex or nearly flat, white, smooth, glossy to fibrous. Gills free, deep pink, crowded, at bottom stage covered with a thin partial veil. Stem 2-6 cm long, 1-2.5 cm thick, tapering slightly to base with a quickly collapsing white ring. Flesh white, rarely discoloured. No fragrance, mild taste. Common in field and grassy area after rain.

Amanita multisquamosa Peck

[Amanitaceae]

Vernacular name(s): Small Funnel-veil Amanita (E).

Distribution: B-4.

Description: Non-edible mushroom. Cap small, aplanate and slightly depressed in centre, grey to dark grey, glabrous, occasionally covered with membranous volval remnant. Gills free, white, grey to brownish. Stem exannulate, sub-cylindrical, fistulose, white or dirty white. No distinctive odour or taste. Grows widely in semi-green forest.



Amylostereum laevigatum (Fr.) Boidin.

(Syn: *Thelephora laevigata* Fr.)

Vernacular name(s): Mandua ranga (O).

Distribution: B-4.

Description: Fruiting body: Irregular but mostly in plane manner coalesce to form big patches, upper (fertile) whitish surface very smooth. Flesh: white, soft and leathery. Microscopic feature: Spore printng white; Smooth amyloid basidiospores, hyaline-encrusted cystidia, spore elongated ellipsoidal to cylindrical, smooth, $2.5-6 \times 2-3$ m; hyaline or very nearly so; amyloid.



Bulgaria inquinans (Pers.) Fr

[Bulgariaceae]

Vernacular name(s): Black bulgar fungus (E).

Distribution: B-4.

Description: Fruiting body: cup- or top-shaped at first, becoming flattened or convex; 1-5 cm across; outer surface brown to black, finely to prominently hairy or scaly (often smoother and blacker with age); upper surface black, shiny, and smooth; flesh rubbery to gelatinous; stem absent or merely a pinched-off extension. microscopic features: Spores $9-17 \times 6-7 \mu$; elliptical to

somewhat lemon-shaped; smooth. Asci upto about 150μ long; 8-spored, with the top 4 spores dark brown and uniguttulate in KOH and the bottom 4 spores poorly developed, multiguttulate, and hyaline. Paraphyses filiform. Saprobiic on decaying sticks and logs.

Byssomerulius corium (Pers.) Parmasto

[Irpicaceae]

Vernacular name(s): Netted crust fungus (E).

Distribution: B-4.

Description: Fruiting body: Irregular but mostly resupinate, sometimes forming brackets, coalesce to form large patches or tiered brackets with lower (fertile) whitish surface covered in snaking net-like ridges or elongated warts. The pale upper surface, where visible, is faintly zoned and fibrous or finely downy, becoming finely hairy at the margin. Flesh: white, tough and leathery.

Microscopic feature: Spore printng white; spore elongated ellipsoidal to cylindrical, smooth, $4.5-7.5 \times 2.3-3\frac{1}{4}$ m; hyaline or very nearly so; inamyloid.



Chaetoderma luna (Romell ex D.P. Rogers & H.S. Jacks.) Parmasto

Vernacular name(s): Sweta charma (O).

Distribution: B-4.

Description: Basidiocarps white to cream-colored, up to 2 mm thick, developing in small patches, these often becoming confluent; hymenium pilose under a 10x lens; hyphal system monomitic; subicular hyphae thin to slightly thick-walled, nodose-septate, 2-4 μm in diam; cystidia abundant, narrowly clavate, unevenly thick-walled, up to 160 μm ; basidia narrowly clavate, 2-4 sterigmate, with a basal clamp, 4.5-7 x upto 140 μm ; basidiospores cylindrical, slightly allantoid, hyaline, smooth, negative in Melzer's reagent, 4-5 x 13-15.5 μm . associated with a brown rot.



Clavaria aurea Schaeff.

[Clavariaceae]

Vernacular name(s): Mudgara chhatu (O); Club mushroom (E).

Distribution: B-4.

Description: Edible mushroom among tribal people. Fruiting body 3-10 cm high, upto 1 cm wide, cylindrical, unbranched; vermiform, orange-yellow, glabrous, tip acute-acuminate, cuty wavy. Flesh thin, orange. No distinctive odour, taste bitter. Found on sandy and loamy area, or at the side of tree trunk.

Crinipellis scabella (Alb. & Schwein.) Murrill

[Marasmiaceae]

(**Syn:** *Agaricus scabellus* Alb. & Schwein.)

Vernacular name(s): Loma chakri (O);

Distribution: B-4.

Description: Pileus: rounded, pubescent, brownish at centre, small tinge of ashy lines arises from margin to the upper side of the cap, maroon arrow shaped structure covered the upper surface, 5-10 cm in diameter. Stipe: 2-8 cm long, 1-1.5 cm thick, equal, scabrous, puberulus, brown, packed. Flesh: very thick, fragile. Taste & Odour: No distinctive odour and taste. Found in grassland, on decaying wood or ground on tropical moist deciduous forest.



Dacryopinax spathularia Schweien & G.W. Martin

[Dacrymycetaceae]

(Syn: *Merulius spathularia* Schwein.)

Vernacular name(s): Peetakarni (O); Edible Jelly fungus (E).

Distribution: B-4.

Description: Non-edible mushroom. Cap orange, very small coral like projections without any specific projections, slimy, hygrophanous. Stem 2-5 cm long, 1.5-2.7 mm thick, equal, smooth when young. Flesh fragile, very thin. No distinctive odour or taste. Found on rotting wood.



Deconia coprophila (Bull.) P. Karst.

[Strophariaceae]

(Syn: *Agaricus coprophilus* Bull.)

Vernacular name(s): Gobaria chhatu (O); dung loving psilocybe (E).

Distribution: B-4.

Description: Pileus: upto 3.5 cm across; convex at first, becoming broadly convex; reddish brown to orangish brown, fading to yellowish brown or yellowish. Gills: broadly attached to the stem; distant; short-gills infrequent; pale to medium brown. Stipe: 1–3 cm long; 2–4 mm thick, equal, dry, finely hairy or fuzzy, whitish, discoloring

brownish; without a ring. Flesh: brownish, unchanging when sliced. Odor and Taste Spore Print: dark purplish brown. Microscopic features: spores 13–18 × 7–10 μm, elongated-subhexagonal, smooth, with a large pore, thick-walled. Basidia 4-sterigmate. Cheilocystidia 35–45 μm, fusiform-lageniform, smooth, thin-walled, hyaline in KOH, abundant. Pleurocystidia not found.

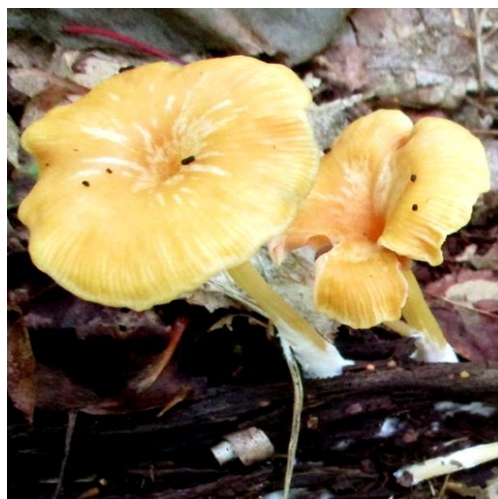
Entoloma unicolor (Perk) Hesler

[Entolomataceae]

Vernacular name(s): Pink Gilled mushroom (E).

Distribution: B-4.

Description: Cap 8-10 cm in diameter, light yellow, rolled margin, umbonate at young, bell shaped at maturity, free. Stem 8-10 cm long, 0.5-1.5 cm wide, cylindrical, creamy white. Gills closed concolourous with cap, ovate-rounded, yellowish brown. Unpleasant in taste and odour. Edibility not known. Found on soil or garden grass surface.





Ganoderma lucidum (Curtis) P. Carst.

[Ganodermataceae]

(Syn: *Boletus lucidus* Curtis)

Vernacular name(s): Banspalli (O);
Lingzhi /Reishi mushroom (E).

Distribution: B-4.

Description: Cap: 2-30 cm; at first irregularly knobby or elongated, but by maturity more or less fan-shaped; with a shiny, red to reddish brown when mature; when young often with zones of bright yellow and white toward the margin. Pore surface: whitish, becoming dingy brownish

in age, usually bruising brown, with 4-7 tiny Stipe, sometimes absent, but more commonly present; 3-14 cm long; up to 3 cm thick; twisted; equal or irregular. Flesh: brownish, fairly soft when young, but soon tough. spore print: brown. Chemical reactions: KOH black or blackish on all surfaces. Microscopic features: Spores 9-12 x 5.5-8 μ ; more or less elliptical, sometimes with a truncated end; appearing smooth at lower magnifications; under oil immersion appearing double-walled, with a row of "pillars" between the walls. Setae and cystidia absent. Hyphal system dimitic.

Lactarius alnicola A. H. Smith

[Russulaceae]

Vernacular name(s): Dudhia chhatu(O);
Golden milk cup (E).

Distribution: B-4.

Description: Pileus: 6-13 mm broad, convex, becoming shallowly infundibuliform; margin inrolled when young, sometimes slightly pubescent, surface viscid, flesh, thick, white, firm; odour indistinct, taste very peppery. Lamellae: gills decurrent, crowded, narrow, white becoming yellow-buff, bruising yellowish. stipe: 2-5 cm tall, 1.5-2.5 cm thick, with darker yellow-brown spots veil absent. spores: 7-10 x 6-8 μ m, elliptical with reticulate, amyloid ornamentation; spore print white to pale yellow. found on lower base of *Mangifera indica* tree.



Marasmius rotula (Scop.) Fr.

[Marasmiaceae]

(Syn: *Agaricus rotula* Scop.)

Vernacular name(s): Chakrika (O);
Pin wheel mushroom (E).

Distribution: B-1.

Description: Cap: 5-20 mm; broadly convex; soon developing a navel-like central depression; pleated; brownish in the depression, white elsewhere. Gills: attached to a tiny "collar", white to yellowish white; distant. Stipe: 1.5-8 cm long; 1-2 mm thick, equal, dry, shiny, wiry, pale at first but soon dark brown to black. Flesh: thin. Odour and Taste: Not distinctive. Chemical reactions: KOH on cap surface negative. Spore print: White or whitish. Microscopic features: spores $6.5-10 \times 3-5 \mu$, smooth, more or less elliptical, or subfusiform, in amyloid. Pleurocystidia absent. Cheilocystidia clavate to subglobose, inamyloid, with short warts and projections. Pileipellis hymeniform, with broom cells that feature short projections. Saprobic on sticks and woody debris in hardwood of *Phoenix sylvestris*.



Protostropharia semiglobata (Batsch)

Redhead, Moncalvo & Vilgays

[Strophariaceae]

(Syn: *Psilocybe semiglobata* (Batsch) Noordel.)

Vernacular name(s): Kreesaja (O);

Distribution: B-4.

Description: Pileus: obtuse to hemispherical in shape, reaching a diameter of 1–4 cm, surface smooth, sticky, and initially has a light yellow color that fades in maturity to dull yellow or whitish. Gills: adnately attached to stipe, with a slight decurrent tooth initially grayish, but become purplish brown to dark purple as the spores mature. The edges of the gills are white and fringed. Stipe: 3–12 cm long by 0.2–0.5 cm thick, with a bulbous base. Odour & taste: Flesh has no distinctive odour, and a taste that is mild to slightly bitter. Microscopic feature: spore print: dark purple, spores: thick-walled, ellipsoidal, smooth, and have a small apical germ pore; measure $16.1-19.0$ by $8.8-11.0 \mu$, basidia: 4 spored, club-shaped, hyaline and measure $33-40$ by $13-14.6 \mu$.

Psilocybe cubensis (Earle) Singer

[Hymenogastraceae]

(Syn: *Stropharia cubensis* Earle)

Vernacular name(s): Krusanadi(O); Magic mushroom (E).

Distribution: B-1.

Description: Pileus: 2–8 cm conic to convex, becoming broadly convex to plane in age, may retain a slight umbo, margin even, reddish-cinnamon brown when young becoming golden brown in age. Flesh whitish, bruising blue in age or where injured. Gills: adnate to adnexed to attachment, close, at first pallid to gray, becoming dark purplish to blackish in age. Spore print: dark purple brown. Stipe: 4–15 cm (2–6 in) long, 0.5–1.5 cm (0.2–0.6 in) thick, white to yellowish in age, hollow or somewhat stuffed. Odour: farinaceous. Microscopic features: spores 11.5–17 x 8–11 μm , subellipsoid, basidia 4-spored but sometimes 2- or 3-, pleurocystidia and cheilocystidia present.



Terana caerulea (Lam.) Kuntze

[Phanerochaetaceae]

[Syn: *Pulcherricium caeruleum* (Lam.) Parmasto]

Vernacular name(s): Shyamaruchi (O); cobalt crust fungus or velvet blue (E).

Distribution: B-4.

Description: Fruiting body: 2–6 mm thick, dark blue with a paler margin, with a velvety or waxy texture when moist, but crusty and brittle when dry. Spore print: white, spores are ellipsoidal, smooth, thin-walled, hyaline or pale blue, with dimensions of 7–12 by 4–

7 μm . Basidia: 4 spored, club-shaped, hyaline or blue, with dimensions of 40–60 by 5–7 μm

Termitomyces eurrhizus (Berk. & Broome)
R.Heim

[Lyophyllaceae]

(Syn: *Agaricus microcarpus* Berk. & Broome)

Vernacular name(s): Bali chhatu (O).

Distribution: B-4.

Description: Pileus: (4.9)6.4–11.6(14.4) cm diam., at first conico-campanulate becoming appanate, and then upturned with black, broadly conical umbo and thin, silky-striate, irregular, crenulate and incised margin; at first greyish brown, fading to vinaceous brown, context of pileus white, thick and fleshy. Lamellae: whitish cream, free to adnexed, broad, moderately crowded, regular; short gills of 2–3 lengths. Stipe (6.6)8.5–15.2(16.8) × (0.7)0.8–1.6(1.7) cm, central, cylindrical and slightly swollen or bulbous base creamish white, fibrillose, solid and smooth. Annulus: absent. Basidiospores (5.9).



Termitomyces heimii Natarajan

[Lyophyllaceae]

Vernacular name(s): Balibalia chhatu (O).

Distribution: B-4.

Description Pileus: (9.9)11.7–14.5(16.2) cm diam., at first subglobose to subumbonate with incurved margin, becoming convex to plano-convex with broad, at first white with greyish umbo becoming whitish with greyish brown umbo, smooth, silky, fibrillose and viscid or slimy when moist, otherwise dry; context of pileus white, thick and fleshy. Lamellae: at first white, becoming pale-pink with age, free, broad, crowded, regular; short gills of 3–4 lengths. Stipe: (9.7)11.8–19.9(21.8) × (2.6)2.7–3.7(3.8) cm central, cylindrical, long and fairly thick whitish, stuffed and smooth. Annulus white, thick and persistent. Basidiospores (5.3)5.5–6.8(7.2) × (4.0)4.2–4.6(4.7) μm, broadly ellipsoidal, smooth and hyaline with pinkish tinge.

Termitomyces microcarpus (Berk. & Broome) R. Heim

[Lyophyllaceae]

Vernacular name(s): Hunka chhatu (O); Termite mushroom(E).

Distribution: B-4.

Description: Medium-sized fleshy agaric with whitish cap, a whitish gills and small to long central stipe without pseudorhiza. Pileus: (2.0)2.4–4.4(5.1) cm diam., at first campanulate becoming expanded or convex with a small, acute, papillate umbo and irregularly lobed margin; at first whitish fading to whitish grey. Context of pileus smoky white, moderately thick and fleshy. Lamellae: white, free to adnexed, broad, sparsely crowded, regular; short gills of 2–3 lengths. Stipe: (2.7)2.8–5.7(7.6) × (0.15)0.2–0.35(0.4) cm, central, cylindrical, slender, whitish, fibrillose, smooth and solid. Annulus absent. Basidiospores (5.9)6.0–6.6(6.8) × (3.4)3.7–3.9(4.2) μm, broadly ellipsoidal, hyaline and smooth.



Xylaria longipes Nitschke

[Xylariaceae]

[Syn: *Xylosphaera longipes* (Nitschke) Dennis]

Vernacular name(s): Kasthika (O).

Distribution: B-4.

Description: Fruiting body: 2-8 cm tall; tough; shaped more or less like a club; grayish to brownish when young, becoming black with maturity; surface: becoming cracked and scaly with maturity; stem often proportionally long, but also frequently short or nearly absent. Microscopic features:

Spores 13-15 × 5-7 μ, smooth, fusiform, with spiraling germ slits that run the length of the spore.

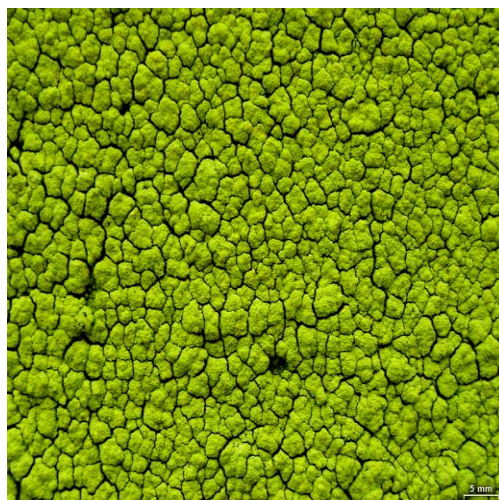
LICHENS

Chrysothrix chlorina (Ach.) J. R. Laundon
[Chrysothricaceae]

Vernacular name(s): Swarnarenu (O);
Gold dust lichen (E).

Distribution: B-4.

Description: Thallus: crustose, Surface: thick, continuous to strongly areolate, bright yellow, ecorticate, loosely attached and easily separated from rock, lacking well-defined lobes, forming extensive, irregularly spreading patches, to ca. 1.0 mm thick, \pm densely compact in central parts, consisting of yellow granules which become paler toward base; rhizohyphae not evident to well developed. Photobiont: chlorococcoid, spherical, to 18 μm across; very frequent on bark of *Mangifera indica*.



Cryptothecia scripta G. Thor

[Arthoniaceae]

Vernacular name(s): Guptadharika (O);
wreath lichen (E).

Distribution: B-4.

Description: Thallus: Crustose; Surface. 3–8 cm wide, adnate, smooth, dull greenish grey to yellowish grey, with soft scattered paler sometimes slightly raised areas forming lines or branched patterns, to 0.3 mm thick isidia: absent; globose granules spread over the thallus, to 0.1 mm diam. Prothallus distinct, byssoid, of mainly radiating hyphae, whitish or with a brownish tinge. Photobiont cells solitary or a few cells aggregated, 8–17 \times 5–12 μm . Medulla: distinct, white. Ascigerous parts common, in slightly raised areas, white with darker dots indicating individual asci. Asci: weakly aggregated, 1-spored, sometimes covered by blackish amorphous tissue enclosed by whitish hyphae. Ascospores: ovoid, 54–73 \times 19–27 μm . Pycnidia: rare, solitary, immersed to slightly elevated. Conidia bacilliform, 5–7 \times c. 1 μm . Found on the bark of *Mangifera indica*

***Graphis scripta* (L.) Ach.**

[Graphidaceae]

Vernacular name(s): Lekhashree(O).

Distribution: B-1, B-2, B-4.

Description: Crustose, continuous to slightly rugose surface: cream-coloured white or pale gray or grayish green, dull. Apothecia: raised from the thallus, lirellate lirellae: oblong, \pm flexuous and branched, $1-3 \times 0.2-0.4$ mm ; disc: narrow to wide and open, dark gray to brown with whitish pruina margin: well developed, covering the lateral part of the ascocarps; excipular lips: black, entire, sometimes narrow exciple: poorly developed and not carbonized at the base, carbonized laterally, epihymenium: brown, 5-10 μ m thick hymenium: not inspersed, 90-100 μ m tall; paraphyses: 1.5-2 μ m thick, dense, tips distinctly brown or yellowish brown; subhymenium: hyaline, 10-20 μ m thick asci: clavate, 80-90 x 15-20 μ m, 8-spored ascospores: hyaline, transversely 7-10-septate, some spores terminally with one transverse septum, 25-45 x 7-9 μ m, I+ blue-violet Pycnidia: immersed conidia: bacilliform, 2-5 x 1 μ m. Found on smooth bark of *Plumeria rubra* and *Mangifera indica*.



* * *

SOME PLANTS AND THEIR MEDICINAL USES

Abelmoshus manihot (L.) Medic. (MALVACEAE)

Local name: Bana bhendi

Ethnic uses: A paste of the Leaf is used to treat wounds and cuts, with new paste being applied every 2 - 3 days for about 3 weeks.

Abelmoschus moschatus Medic. (MALVACEAE)

Local name: Kasturi Bhendi

Ethnic uses: The leaves and roots are made into paste and applied on the forehead early in the morning once in a day for 3 days to cure headache caused due to fever.

Abutilon indicum (L.) Sweet (MALVACEAE)

Local name: Pedipedika

Ethnic uses: About 5-10 ml of the leaf juice is prescribed for post delivery complications especially to get rid of left over placenta parts and also reduce the pain.

Acalypha indica L. (EUPHORBIACEAE)

Local name: Indra marisha

Ethnic uses: 10 ml of the leaf juice is taken twice daily for 5 days against bronchitis.

Achyranthes aspera L. (AMARANTHACEAE)

Local name: Apamaranga

Ethnic uses: About 20-30 ml decoction of the whole herb with 8-10 ml of honey is given for labour pains and to hasten delivery.

Aegle marmelos (L.) Corr. (RUTACEAE)

Local name: Bela

Ethnic uses: Leaf juice (10 ml) mixed with black pepper powder (5 nos.) is taken daily after lunch for 5 days against dyspepsia.

Root paste (5 g, once a day at night for 15 days) is taken with water against liver disorder.

Ripe fruits are eaten to increase appetite.

Unripe fruits are cut into pieces, sun dried and powdered. About half teaspoonful of this powder mixed with 2 spoonful of honey thrice a day for 3 days is prescribed for blood dysentery.

Tender leaf juice (10 ml) mixed with 2-3 drops of honey is given twice daily (evening and morning) on empty stomach to reduce blood sugar within 3-4 weeks.

About 500 g of ripened fruit pulp is prescribed twice daily till the cure of internal injury by fire.

Aerva lanata (L.) Juss ex Schultes (AMARANTHACEAE)

Local name: Paunsia

Ethnic uses: Root paste (5g) or decoction of the whole plant (10-15 ml) is given two times a day for 10 days against dysuria.

Aeschynomene aspera L. (FABACEAE)

Vernacular name(s): Keshee Sola

Ethnic uses: Roots along with those of 'chitaparū' (*Plumbago zeylanica*) are made into a paste and applied to cure leucoderma.

Aeschynomene indica L. (FABACEAE)

Local name: Deshee Sola

Ethnic uses: Stem bark and leaves are made into paste along with the root decoction of *Andrographis paniculata* is taken orally against snake bite.

Ageratum conyzoides L. (ASTERACEAE)

Local name: Pokasunga

Ethnic uses: Plant paste mixed with turmeric paste (in a proportion 1:1) is applied to cure eczema.

Allmania nodiflora (L.) R.Br. ex Wight (AMARANTHACEAE)

Local name: Khagapadi

Ethnic uses: Leaf decoction (10 ml) mixed with water (200 ml) is taken frequently against dysuria.

Alternanthera philoxeroides (C. Martius) Grisebach (AMARANTHACEAE)

Local name: Agra meenakshi, Bada madaranga

Ethnic uses: A paste made of the leaves mixed with equal amounts of *Bidens pilosa*, *Galinsoga parviflora* and the rhizome of *Zingiber officinale* is used against chronic fever.

Alternanthera sessilis (L.) R.Br. ex DC. (AMARANTHACEAE)

Local name: Abrunti meenakshi, Desi madaranga saga

Ethnic uses: Decoction (100 ml) of the whole plant, with one cup of milk once a day for 15 days is prescribed to feeding mother against galactorrhoea. The patient is also advised to take the leaf of this plant along with the leaf of 'Kanta leutia' (*Amaranthus spinosus*) as vegetable in her daily diet.

Amaranthus spinosus L. (AMARANTHACEAE)

Local name: Khada

Ethnic uses: Fresh roots are chewed by nursing mothers to increase lactation.

Andrographis paniculata (Burm.f.) Wall. ex Nees (ACANTHACEAE)

Local name: Bhuin nimba, Chireita

Ethnic uses: About 5 g of leaf paste is given twice a day for three days against acidity and gastric troubles.

***Annona squamosa* L. (ANNONACEAE)**

Local name: Atta

Ethnic uses: The bark paste (5 g) is taken thrice a day for two days against diarrhoea. The unripe fruit is dried and powdered. This powder is sprinkled over wounds to drive away the flies.

The seed paste is used as an antiseptic skin ointment especially for cows, goats and pigs.

Leaf paste mixed with water is applied on whole body of cattle to keep away ectoparasites.

***Artocarpus heterophyllus* Lam. (MORACEAE)**

Local name: Panasa

Ethnic uses: One tea spoonful (10 ml) of the root juice is administered thrice a day for 2 days against diarrhoea.

The young leaves are ground, the paste so obtained is applied on scabies.

The latex of the plant is applied locally twice a day for 3 days on mumps.

***Azadirachta indica* A. Juss. (MELIACEAE)**

Local name: Nimba

Ethnic uses: The crushed leaves applied over the body 1 hour before bath is believed to cure all types of skin diseases.

Leaf paste mixed with cow ghee (fat obtained from the milk) is applied to suppurate boils.

Leaf powder mixed with a pinch of common salt and mustard oil (in a proportion 2: 1: 2) and is made into a paste. This paste is applied against tooth decay and any other tooth disease.

The bark with equal amount of 'haladi' (*Curcuma longa*) pounded and applied to all over the body thrice in a year (at an interval of 4 months) to prevent from being attacked by scabies and ringworm.

Seven tender leaves of the plant is prescribed daily to the person suffering from diabetes.

Fruit paste (50-75 g depending on the size and age of the cattle) is given to cattle for internal heat.

***Blumea lacera* (Burm.f.) DC. (ASTERACEAE)**

Vernacular name(s): Gandha Kukuradri (O); Kakronda (E); Jangli muli (H); Kukursunga (Beng).

Ethnic uses: Leaf paste is prepared with cold water and given once in a week against bed-wetting.

***Boerhavia diffusa* L. (NYCTAGINACEAE)**

Local name: Rakta Puruni

Ethnic uses: The decoction (10 ml) of the whole plant with 4-5 drops of honey is given to cure dysuria during pregnancy. The patient is also advised to eat the leaves and tender branch tips as vegetables.

Brassica juncea (L.) Czern. & Coss.

Local name: Rai-sorisa, Sorisha

Ethnic uses: The oil is mixed with common salt is rubbed on teeth against enamel loss. About half tea-spoon of powdered seeds, mixed with half tea-spoon of lime-juice is given daily for 5 days to lessen the sugar content in blood.

Celosia argentea L. (AMARANTHACEAE)

Local name: Rajat Iswarjata

Ethnic uses: Plant paste (50 g) is given to cow and fried leaves (10 g) to women after delivery against the body ache.

Cleome viscosa L. (CAPPARACEAE)

Local name: Peeta anasorisa (O)

Ethnic uses: Seed paste (5 g) is given twice daily for 2 days against diarrhoea.

Commelina benghalensis L. (COMMELINACEAE)

Local name: Kanisiri

Ethnic uses: The juice of the plant (10 ml) is taken daily for 2 days against dysentery.

Commiphora wightii (Arn.) Bhandari (BURSERACEAE)

Local name: Guggula

Ethnic uses: Local people use the twig of Guggul as a toothbrush because of its medicinal value.

The gums resins soaked with hot water and gaggled to cure pyorrhoea. It is also effective against painful menstruation and given in the treatment of leucorrhoea.

Crateva magna (Lour.) DC.

Local name: Bada Baruna

Ethnic uses: Two flower buds pounded with a pinch of salt is taken before meal for 2 weeks against indigestion.

Bark paste mixed with goat milk is used as a facial cream.

Croton bonplandianum Baill. (EUPHORBIACEAE)

Local name: Bana lanka

Ethnic uses: The juice of the plant is applied on the fresh cut wounds to check bleeding immediately and also for quick healing.

Desmodium triflorum (L.) DC. (FABACEAE)

Local name: Kuradia ghasa

Ethnic uses: Leaves are cooked and consumed as a vegetable by nursing mothers to enhance breast milk.

Eclipta prostrata (L.) L. (ASTERACEAE)

Local name: Bhrungaraj

Ethnic uses: Powder of the dried root (3-5 g) is given with honey during loss of memory due to mental stress or mental disorder.

Emilia sonchifolia (L.) DC. (ASTERACEAE)

Local name: Shashashruti

Ethnic uses: Decoction of the root (10 ml) is given twice daily for 5 days against fever coupled with running nose.

Eryngium foetidum L. (APIACEAE)

Local name: Bana dhania

Ethnic uses: Leaf paste mixed with coconut oil and applied on gray hair for blackening.

Euphorbia hirta L. (EUPHORBIACEAE)

Local name: Chita kutei

Ethnic uses: The whole plant paste is taken with water (50 ml) twice a day for 15 days to enhance lactation.

Evolvulus alsinoides (L.) L. (CONVOLVULACEAE)

Local name: Shyamapruthika

Ethnic uses: Decoction (20 ml) of leaves mixed with honey (10 ml) is administered once in a day (after food) for 15 days to cure epilepsy and loss of memory.

Evolvulus nummularius (L.) L. (CONVOLVULACEAE)

Local name: Sweta pruthika, Bichhamalia (O); Round leaf bindweed (E).

Ethnic uses: The decoction of the root (5 ml) is given twice daily for 3 days against intermittent fever.

Glinus oppositifolius (L.) A. DC. (MOLLUGINACEAE)

Local name: Pitagahama

Ethnic uses: Plant juice (5 ml) mixed with castor oil (2 ml) dropped into the ear against earache.

Gomphrena celosioides Mart. (AMARANTHACEAE)

Vernacular name(s): Golaheeraka

Ethnic uses: Root is chewed daily before sleep at night for pyorrhoea and gum troubles.

Grangea maderaspatana (L.) Poir. (ASTERACEAE)

Local name: Agnikumari

Ethnic uses: About 1 cm long root is chewed after meal for 15 days against dyspepsia.

Hedyotis corymbosa (L.) Lam. (RUBIACEAE)

Local name: Gharapodia

Ethnic uses: 10 g of young plant (s) mixed with 10 g of tuberous roots of 'mutha' (*Cyperus rotundus*) dried, powdered and boiled in 100 ml of water; 20 ml of this infusion given against diarrhoea.

Heliotropium indicum L. (BORAGINACEAE)

Local name: Hatisundha

Ethnic uses: Leaf paste made by squashing (2-3 lowest) is eaten daily once for 10 days against epilepsy.

Hibiscus rosa-sinensis L. (MALVACEAE)

Local name: Mandara

Ethnic uses: The flower paste is massaged on the head to check graying of the hair.

10 g each of the flower of this plant and the root of 'Bicchuati' (*Urtica dioica*) are boiled in coconut oil (250 ml) for 10 minutes. 10 ml of that oil is massaged (after cooling) on head every day for one month to check hair fall.

10 g of flower paste is administered twice a day for one month against menorrhagia.

Infusion of petals (5-10 ml) is given in diabetes to lessen sugar content in blood.

Hybanthus enneaspermus (L.) F.v. Muell. (VIOLACEAE)

Local name: Madana mastaka

Ethnic uses: The root-paste (10 g) with 3 black peppers is administered on empty stomach once daily for 21 days against diabetes and also given to children against bowel complaints.

Hygrophila auriculata (Schum.) Heine (ACANTHACEAE)

Local name: Koilikhia

Ethnic uses: Seeds (3-5 g) paste in milk is given once in a day for 7 days against gonorrhoea.

Hyptis suaveolans (L.) Poit. (LAMIACEAE)

Local name: Bana tulsi

Ethnic uses: The leaf juice is applied to cure scabies.

Impatiens balsamina L. (BALSAMINACEAE)

Local name: Haragaura

Ethnic uses: Poultice of the leaf applied externally on the wounds for the speedy healing.

Indoneesiella echioides (L.) Sreemadh. (ACANTHACEAE)

Local name: Nrulekha

Ethnic uses: Leaf paste mixed with coconut oil and applied on gray hair for blackening.

Leucas aspera (Willd.) Link (LAMIACEAE)

Local name: Loma Gayasa

Ethnic uses: The leaves (10 g) is fried in mustard oil and taken daily against gastric trouble.

Ludwigia perennis L. (ONAGRACEAE)

Vernacular name(s): Kshudra Bila Labanga

Ethnic uses: A mixture of the dried leaves along with those of *Azadirachta indica* are roasted together in a closed container and it is used against piles.

Mangifera indica L. (ANACARDIACEAE)

Local name: Amba

Ethnic uses: Embryo paste (5 g) is taken twice a day for 4 days to cure diarrhoea.

The bark paste (10 g) is taken twice a day for 5 days against blood dysentery.

Basal part of seven leaf petioles are made into a paste and given with a glass of water for 3 days to check increased urination and stomach disorders.

Mecardonia procumbens (Mill.) Small (SCROPHULARIACEAE)

Local name: Pinjala phula

Ethnic uses: Fresh leaves are bruised and butter milk is mixed and applied on the body to cure itches in children.

Mesua ferrea L. (CLUSSIACEAE)

Local name: Nageswara

Ethnic uses: Leaf paste is massaged on head against hemicrania.

Flowers are dried and powdered. About 30 g of the powder is boiled in about 100 ml of cow ghee (fat obtained from the milk) for about 30 minutes till it becomes an ointment. This is applied locally with a finger twice daily for 7 days against internal piles.

Flower buds made into a paste with butter and administered (10 g) two times a day for 5 days to rectify the eye sight defect due to diabetes.

Michelia champaca L. (MAGNOLIACEAE)

Local name: Champa

Ethnic uses: The flowers and fruits are ground and the paste thus obtained is mixed with 'sesamum' (*Sesamum indicum*) oil. The stock oil is prescribed for massaging on head twice a day for 2 weeks against mental disorder.

The perfumery oil prepared by boiling 10-12 flowers of champa in a glass (about 100 ml) of 'niger' oil (*Guizotia abyssinica*) is used for better hair growth.

Mimosa pudica L. (MIMOSACEAE)

Local name: Lajakuli

Ethnic uses: Leaf paste (10 g) is taken with cow milk (250 ml) twice a day for 15 days against bleeding piles.

Mollugo pentaphylla L. (MOLLUGINACEAE)

Local name: Pita saga

Ethnic uses: Leaf paste is applied over the freshly cut wounds to check bleeding.

Nelumbo nucifera Gaertn. (NELUMBONACEAE)

Local name: Padma

Ethnic uses: 10 g of flower paste is given with 10 g of jaggery twice a day for 2 day against fever. Ketakipatana-691

Root paste is applied on fresh cut to stop bleeding.

The paste of the petal is applied for suppression of boil.

The root paste is applied externally to cure ringworm.

About 10 g of seeds fried in ghee and mixed with 2 g of jaggery eaten once daily for 30 days before sunrise to check impotency.

Perianths are soaked in water in an earthen put overnight and the eyes are cleaned with this water during conjunctivitis.

Nymphaea nouchali Burm.f. (NYMPHAEACEAE)

Local name: Nila-kain (O);

Ethnic uses: Leaf juice (1-2 drop) is dropped into the ear against ear ache.

Seed powder (5 g) is taken twice daily for 5 days against the stomach disorder.

Nymphaea pubescens Willd. (NYMPHAEACEAE)

Local name: Nalikain, Dhalakain

Ethnic uses: 5 g of the stamen powder is taken with warm water (50 ml), thrice daily for two days against flatulence.

5 g each of the stamen of the flower of this plant, root of 'Talmuli' (*Curculigo orchioides*) and root of 'Satabari' (*Asparagus recemosus*) are ground with 10 black peppers. The paste thus obtained is taken with warm water for 3 days against severe dysmenorrhoea.

10 g of the stamen paste mixed with 30 g of 'Haldi' (*Curcuma longa*) paste is massaged on the body before bath against itching.

5 g of the stamen powder is taken with warm water (50 ml), thrice daily for two days against flatulence. Chandradeipur-675

Ocimum basilicum L. (LAMIACEAE)

Local name: Subashi, Kapur Kanti, Landa-baguli, Durlabha

Ethnic uses: The leaf paste is applied to cure ringworms.

Ocimum canum Sims (LAMIACEAE)

Local name: Ganga tulasi, Bana tulsi

Ethnic uses: Leaf juice is given to people suffering from cold and cough. The crushed root with country liquor is believed to reduce the chest pain.

The seeds (25-50) are soaked in water overnight and filtered in a fresh cotton cloth. This water is dropped in the eyes 3-4 times a day for 2 days against conjunctivitis.

Ocimum sanctum L. (LAMIACEAE)

Local name: Tulasi

Ethnic uses: Leaf juice mixed with honey (10 ml) is taken to treat colds and fevers.

The leaf paste mixed with a pinch of common salt is used as ointment for eczema.

The decoction of the leaves (10 ml) is given twice a day for three days against shivering fever. About 8-10 fresh leaves are chewed and allowed juice to spread on affected parts in the mouth; this relieves irritation in mouth and helps in the drying of pustules.

Leaf paste is warmed a little and applied to the aching tooth for the immediate relief. Leaf-juice is applied externally on the forehead to get relief from hemicrania due to gynaecic problem. Decoction of roots or leaves or both is given daily at evening for one month during excessive urination caused due to diabetes. The leaf juice (2-3 drops) is dropped in the ear to cure ear infection.

Sun-dried leaves in powder form are used for brushing teeth. It can also be used as a tooth paste (after mixing with mustard oil) to treat pyrrhoea and other dental disorder.

Oxalis corniculata L. (OXALIDACEAE)

Local name: Ambiliti, Kumari

Ethnic uses: Leaf juice mixed with juice of 'onion' (*Allium cepa*) in the proportion of 1:1 applied on warts.

Peperomia pellucida (L.) Kunth (PIPERACEAE)

Local name: Ghusuripana

Ethnic uses: Leaf-paste (20g) mixed with castor oil (20 ml) is given to cattle against constipation. The doses is according to the size and age of the animal.

Peristrophe paniculata (Forssk.) Brummit (ACANTHACEAE)

Local name: Sroopatika

Ethnic uses: The fresh juice (10 ml) of leaves is used for treatment of epilepsy and nervous debility.

Phyla nodiflora (L.) Greene (VERBENACEAE)

Local name: Jalapippali

Ethnic uses: Plant decoction (one teaspoon, two times daily for two days) is taken against diarrhoea.

Phyllanthus emblica L. (EUPHORBIACEAE)

Local name: Aenla

Ethnic uses: The juice of the fruit is massaged against the burning sensation of the hands and feet.

The juice of the ripe fruit (one) is taken every day for 15 days against leucorrhoea.

The juice of the fruit (50 ml) mixed with sugarcane juice (150 ml) is taken repeatedly against dysuria when the urine is red in colour.

The juice of the fruit and ginger's juice each (5 ml) is taken twice daily for 10 days against bronchitis.

Paste prepared from equal quantity of boiled fruits of this plant and the fruits of 'Bahada' (*Terminalia bellirica*) is given with 50 ml cow's milk twice daily one hour before food against diabetes. Young or unripe fruits are pounded with country liquor and the paste is given against blood dysentery.

A paste made from fruits of this tree and seeds of 'groundnut' (*Arachis hypogea*) along with lemon juice and petals of rose is applied as a lotion against dry skin. Fruit-rind is sun-dried, powdered and mixed with sesame oil (1:2) to be used as a hair growth promoter and as a hair stainer.

Phyllanthus fraternus Webster (EUPHORBIACEAE)

Local name: Badi aenla

Ethnic uses: A paste prepared with milk is applied on the forehead to check headache.

Phyllanthus virgatus Forst.f. (EUPHORBIACEAE)

Local name: Bhumi aonla

Ethnic uses: 5-10 g of leaves are made into juice and taken orally early in the morning for fifteen days to cure jaundice and diabetes.

Portulaca oleracea L. (PORTULACACEAE)

Local name: Bada khetatandula

Ethnic uses: The leaves (10 g) are fried with cow ghee (fat obtained from the milk) and given to the mother from the third month of pregnancy till delivery to prevent abortion.

Psidium guajava L. (MYRTACEAE)

Local name: Pijuli, Chaulia

Ethnic uses: Young leaf paste (10 g) is given twice or thrice daily for 2 days against diarrhoea.

A few leaves are chewed and spit after 5 minutes; this helps in healing pustules in mouth.

Juice (about 10 ml) of vegetative as well as reproductive buds given daily, once in the evening for at least one month to reduce blood sugar (diabetes).

Quisqualis indica L.

Local name: Madhumalati

Ethnic uses: Seed paste (7 nos) mixed with 5 black pepper (*Piper nigrum*) is given 2 times a day for 3 days or till the cure against diarrhoea.

Scoparia dulcis L. (SCROPHULARIACEAE)

Local name: Vana Jasthimadhu

Ethnic uses: The leaf juice mixed with honey (each 5 ml) is taken twice daily for 5 days against fevers.

Sida acuta Burm.f. (MALVACEAE)

Local name: Bajramuli

Ethnic uses: 5 g of the root paste is taken thrice a day for 10 days against the burning sensation of the body.

Solanum virginianum L. (SOLANACEAE)

Local name: Ankranti, Beji begun, Bejari

Ethnic uses: Fruit decoction used for gargling for 5 days once in a day against diseases of gums and teeth.

Syzygium cumuni (L.) Skeel (MYRTACEAE)

Local name: Jammu koli

Ethnic uses: Bark juice is given with the goat milk (each 10 ml) twice a day against diarrhoea.

Alcoholic extract of the seed is taken, one tea spoonful twice a day after meal to reduce the blood sugar in diabetes.

About 20 ml of the bark juice mixed with equal amount of leaf juice of 'basanga' (*Justicia adhatoda*) is given thrice daily till cure against diarrhoea or dysentery.

10 g each of the leaves of this plant and 'Madhunasin' (*Gymnema sylvestre*) are boiled in 500 ml of water till it reduces to about 50 ml. The filtered extract is then given along with 5 g of jaggery daily for two months against diabetes.

Terminalia bellirica (Gaertn.) Roxb. (COMBRETACEAE)

Local name: Bahada

Ethnic uses: Fruit juice is taken with honey (each 10 ml) twice a day for 2 days to check diarrhoea.

The fruit juice mixed with the sesamum oil is applied regularly for 1-2 months to check greying of hair.

Terminalia chebula Retz. (COMBRETACEAE)

Local name: Harida

Ethnic uses: Fruit paste (5 g) is taken thrice a day for 2 days against diarrhoea.

Fruit powder is used as a tooth powder against tooth ache.

Its fruit, the fruit of 'Bahada' (*Terminalia bellirica*) and the fruit of 'Aenla' (*Phyllanthus emblica*) are soaked in 250 ml of water at night. On the next morning the water is drunk to get rid of 'tridosha' i. e. 'Vata', 'Pitta' and 'Kapha'.

The unripe fruits are ground and the paste is applied on wounds caused by the bear's attacks.

Tinospora cordifolia (Willd.) Hook.f. & Thoms. (MENISPERMACEAE)

Local name: Guluchi lata

Ethnic uses: Stem powder (10 g) of this plant and 2-3 g of 'black pepper' powder (*Piper nigrum*) are prescribed for 7 days to cure urinary tract infection.

10 ml stem juice with 2 drops of honey is given twice a day for 15 days to cure long standing

slow fever.

The leaf juice is taken with honey (each 5 ml) in early morning for one month to get rid of obesity.

5 ml of the plant juice is given with fresh turmeric (*Curcuma longa*) at night for 3 days to the children suffering from thread worm infection.

15-20 ml stem juice with 2 drops of honey is given twice a day for 15 days to the children for the cure of epilepsy and hysteria. A decoction of the stem of this plant with grapes and sugarcane juice is useful in mental retardation and general weakness of children.

Tribulus terrestris L. (ZYGOPHYLLACEAE)

Local name: Gokhura

Ethnic uses: Infusion (15 ml) of matured fruits is prescribed early in the morning in empty stomach to rectify the dysuria and other urinary troubles.

Tridax procumbens L. (ASTERACEAE)

Local name: Bisalya Karani

Ethnic uses: Leaf paste (2 g) is taken thrice daily for 4 days to check diarrhoea.

Xanthium indicum Koenig (ASTERACEAE)

Local name: Bana-gokhara

Ethnic uses: Root paste is applied externally to cure long standing wounds.

Ziziphus mauritiana Lam. (RHAMNACEAE)

Local name: Barakoli

Ethnic uses: Dried leaves are burnt and smoke inhaled for cough and colds.

Concluding Remarks:

From the exhaustive account of the floristic composition of the Centurion University campus at Jatni, Bhubaneswar presented in this Book it has become explicit that there is a remarkably rich green coverage of the campus owing to the luxuriant growth of a wide range of tree species, shrubs, soft-stemmed twidders, woody climbers (lianas), herbs, epiphytes, hydrophytes, saprophytes, parasites and symbiotic forms. The vegetation of the campus broadly conforms to tropical moist deciduous forest type. Since long, plant species have been regarded as efficient adsorbers of dust and air pollutants and some of them are shown to be good metabolizers. A large number of broad and small leaved tree species, growing naturally or planted in the University campus are known for their tolerance to common air pollutants such as sulphur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO) and hydrocarbons (HC) etc. They include following species.

1. *Ailanthus excelsa* Roxb. (Simaroubaceae)
2. *Albizia lebbek* (L.) Benth. (Mimosaceae)
3. *Alstonia scholaris* (L.) R.Br. (Apocynaceae)
4. *Artocarpus heterophyllus* Lam. (Moraceae)
5. *Azadirachta indica* A. Juss. (Meliaceae)
6. *Cassia fistula* L. (Caesalpiniaceae)
7. *Couroupita guianensis* Aubl. (Lecythidaceae)
8. *Gmelina arborea* Roxb. (Verbenaceae)
9. *Mimusops elengi* L. (Sapotaceae)
10. *Neolamarckia cadamba* (Roxb.) Bosser (Rubiaceae)
11. *Phyllanthus emblica* L. (Euphorbiaceae)
12. *Pterospermum acerifolium* (L.) Willd. (Sterculiaceae)
13. *Simarouba glauca* DC. (Simaroubaceae)
14. *Spathodea campanulata* P. Beauv. (Bignoniaceae)
15. *Terminalia arjuna* (Roxb.) Wight & Arn. (Combretaceae)
16. *Terminalia bellerica* (Gaertn.) Roxb. (Combretaceae)
17. *Terminalia catappa* L. (Combretaceae)
18. *Terminalia chebula* Retz. (Combretaceae)
19. *Mangifera indica* L. (Anacardiaceae)
20. *Bauhinia variegata* L. (Caesalpiniaceae)

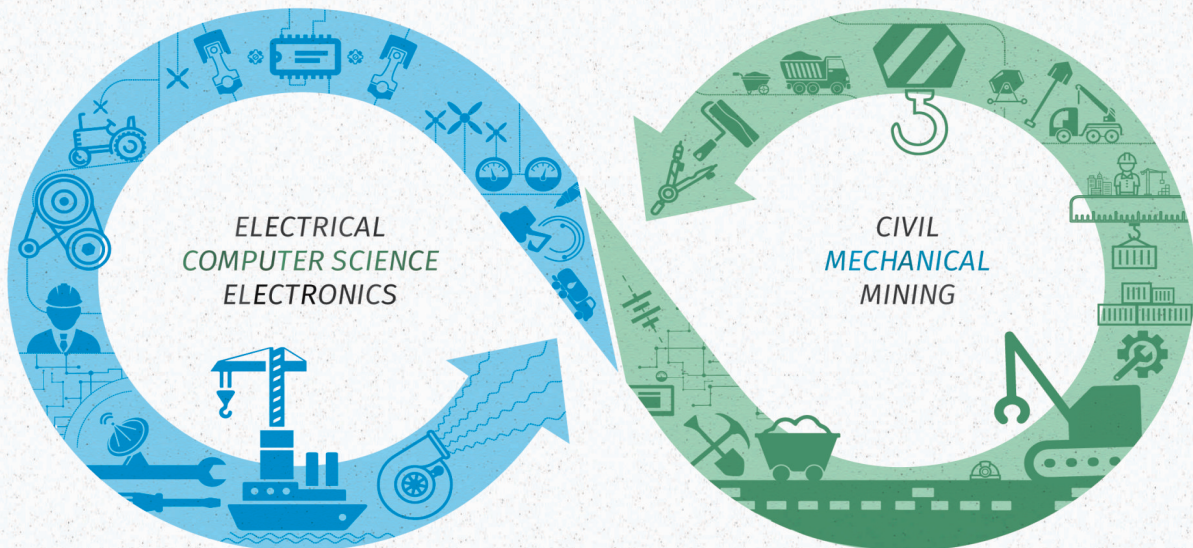
Expectedly, these and several other species documented in this inventory have acted as effective providers of O₂ by sequestration of atmospheric CO₂ and, thus, a lifeline for the students, teachers as well as non-teaching staff working for the Centurion University, particularly the residents of the campus. They are viewed to have formed an efficient green belt thereby playing a key role to help capture the fugitive dust, obnoxious gases in vehicular exhaust and attenuate the noise in addition to improving the aesthetics of the campus. Development of green belt and other forms of greenery also prevent soil erosion and washing away of top soils besides augmenting to stabilize the functional ecosystem, thereby rendering the climate more conducive so as to be able to support and sustain the campus vegetation on

a long-term basis. In addition, the present study has also revealed and substantiated the fact that the University has been able to maintain the desirable ecological niche to confer protection of as many as 9 different RET (rare/endangered/threatened) category plant species thereby providing them *in situ* conservation support over the past 11 years since the very inception of the University.

The present scientific document is the first of its kind to embody an exhaustive account of the floristic composition of the Centurion University campus at Jatni, Bhubaneswar. Such an inventory on plant diversity is expected to serve as an authentic record to become an integral component of the greenery status of the University as well as a referral scientific literature for the students, teachers and researchers in future.

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