

CHAPTER 1

Plants used as a traditional biopesticide

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Abstract

Application of chemical pesticides leads to the development of resistance in insects, destruction of beneficial microorganisms and increase in residual problem which can be a threat to human health and environment. So, development of eco-friendly plant based pesticide needs to be done for the pest management. Keeping this in view, an attempt has been made to enumerate the plants used traditionally as a biopesticide through field survey using Passport Data Form in different landscapes of Odisha state, India. Results revealed that 11 plant species is recorded belong to 11 genus and 5 families. These plants are used to treat seed, seedlings and crops in different regions of Odisha, India.

Keywords: Biopesticides, Eco-friendly, Pest managements, Plants

1.1. INTRODUCTION

In developed and developing countries, agriculture plays an important role not only fulfilling the food requirements but also improving the economy of the country. To get more product, farmers use chemical pesticides which may have bad impacts on environment (Kandpal 2014). Biopesticides are the naturally occurring compounds or agents that obtain from the animals, plants and micro-organisms. Biopesticides are eco-friendly and host specific (Kumar *et al.*, 2021). Basing on the nature and origin, biopesticides are various type such as botanical, growth promoters, predators and pheromones (Semeniue *et al.*, 2017). Due to some antimicrobial agents and bioactive compounds, plants and microorganisms are the major source of biopesticides (Nefzi *et al.*, 2016). Different plant families have different types of bioactive compounds (Lengai and Muthorni 2018). Mainly, biopesticides are of three types. Firstly, microbial pesticides which is important for plant disease managements. It contains a microorganism which can control a various kind of pests. They can be used to control mosquitoes and black flies (Kalra and Khanuja 2007). Secondly, plant incorporated protectants which is a substance derived from the genetic