

CHAPTER 10

Datura metel L.: A potential medicinal plant

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ABSTRACT

Datura metel L. is used as phyto-medicine to treat traditionally a wide range of health complications. The plant contains several different neurologically active phyto-chemicals which affects human health. It was found that the extract of leaf, seed and fruit was used for hypoglycemic activity and managing the serum protein level in albino rats. Melatonin and serotonin are present in the flower and developing fruits of *D. metel*. Melatonin and serotonin are present in the highest level in the least developed flower buds with decreasing concentration and can be used as sedative. This chapter describes the diversity, traditional uses, and presence of wide range of bioactive chemical compounds present in various parts, taxonomic characteristics, and traditional uses of different parts in different countries, antimicrobial activity and herbicidal activities. This chapter will definitely help the researcher to know the phyto-chemical constituents, botanical enumeration, traditional uses, antimicrobial activity and herbicidal activity of *D. metel*.

Keywords: *Datura metel*, hypoglycemic activity, phyto-chemicals, melatonin, serotonin

10.1 INTRODUCTION

Plant contains some components that show toxic activities against pathogens. These components are extracted from the various parts of the plants or from the whole plant for application on the insect pest affected crops and these components are called botanical pesticides or botanicals. Thousands of constituents are present in the plants and are the valuable source against micro-organisms. Ethno botanical study of plant has taken major role in modern day medicine. Usefulness of this medicine cannot be overemphasized without standardized for comparable and reproducible results. Plant based drugs are proved to be efficient against different micro organisms and screening of the extract from different parts are done to identify the antimicrobial properties and production of plant based drugs (Gurjar *et*