

Chapter 21

Ethnopharmacological Properties of Family Asteraceae

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ABSTRACT

From ancient time, plants have been utilized as a great source of medicinal products for several types of diseases and disorders. Traditional knowledge is an important source for the development of new drugs. Several studies revealed that traditional knowledge of medicinal plants is being practised among several tribes throughout the world. Many researchers have been evaluated the authenticity of this information. Family Asteraceae got an important place among this medicinal heritage. This is one of the widely distributed families and large numbers of plants have been utilized in various skin-related problems. This chapter highlights the ethnopharmacological properties of this family.

INTRODUCTION

Therapeutic plants are widely significant as these are the source of essential raw materials to various pharmaceutical industries. As per World Health Organization (WHO) more than 21000 plants species are utilized throughout the world for medical reasons. Out of these, around 2000 plants have been utilized in Indian Systems of Medicine (ISM). In India around 650 - 700 species are utilized in about 4000 herbal and aromatic industries. There is no doubt that plants utilized in medication have been an incredible incentive for the medication advancement in the present ordinary restorative framework. Depending on the ethnobotanical data, the potential natural formulations of plants have been explored as per their customary use. In this scenario family Asteraceae got an important place among these medicinal heritages. This is known to be largest family of the flowering plants comprising 1600-1700 genera and more than 24000 species (Funk et. al., 2005). In India this family is represented by 167 genera and

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900 species. Almost every life structure is represented by family Asteraceae including annual, biennial or perennial herbs, under shrubs, bushes, some of the trees, a few scramblers and aquatics. Some are succulent, while others are prickly and some have smooth sap. Numerous species are adapted to endure the cool, dry winter season by underground stockpiling organs and creating annual stems in spring. The name Asteraceae is derived from the term Aster implies composite and alludes to the trademark inflorescence contains heads of flowers made out of some little flowers called florets and encompassed by bracts (Moreira-Munoz, 2007). Members of the family are cosmopolitan however, most common in the temperate areas even in tropical mountains.

TAXONOMY

Cassini in (1819) created the underlying order of the family gathering genera into different tribes. Several taxonomists have refined this innate idea in the manner that this is still a principal class over the genus level utilized for the classification of sunflowers (Panero & Funk, 2008). Carlquist (1976) and Wagenitz (1976) gathered these tribes into different subfamilies in Asteraceae systematics that started with characterizing the ideas of subfamilies Cichorioideae and Asteroideae. The morphological attributes used to outline these two groups are for the most part in light of discontinuities in the morphology of corolla, anther and style. As indicated by Bremer (1994), the Asteroideae are portrayed (with certain exemptions) by having true ray florets, disk corollas with short projections, caveate pollen, stigmatic surfaces of style branches isolated into two marginal lines sometimes intersecting at apices. Classification of the Asteraceae has been changed rapidly due to the incorporation of the results from the molecular phylogenetic studies. More precisely through the identification of the monophyletic groups which were traditionally included in Cichorioideae. Studies carried out by Jansen & Palmer (1987) and Bremer (1994) three different subfamilies were identified which includes Asteroideae, Barnadesioideae, and Cichorioideae with 17 tribes. Thorne & Reveal (2007) perceived the equivalent subfamily bunches utilizing the prior name Carduoideae for the Cichorioideae. They extended number of tribes up to 25, perceiving the three new tribes which were distinguished by molecular investigation. Tribal groupings of Panero and Funk (2002) were accepted by Kubitzki, Kadereit & Jeffrey (2007). At last they perceived 24 tribes and gathered them into five subfamilies. They perceived a monophyletic Barnadesioideae, a monophyletic Asteroideae and splits the grade of clades between these two groups into three polyphyletic subfamilies namely Mutisioideae, Carduoideae and Cichorioideae. Due to increase in the molecular studies, there is an increase in certainty and resolution in the phylogenetic analysis which leads to the identification of more major family lineages. In this scenario, genera *Corymbium*, *Gymnarrhena*, and *Hecastocleis* were discovered. Subfamily Asteroideae ruled the classification of the Asteraceae that contains over 70% of the species of the family. Molecular studies revealed three major lineage in the Asteroideae found by Kim & Jansen (1995) and Panero & Funk (2008) which have been recently perceived at the super tribe level as Asterodae, Helianthodae, and Senecionodae (Robinson, 2004; 2005).

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