



COMPARATIVE STUDY OF SOME MEDICINALLY IMPORTANT MEMBERS OF FAMILY MENISPERMACEAE FROM KERALA

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ABSTRACT: Menispermaceae family comprises 75 genera and 510 species are mostly climbers widespread in countries with tropical and subtropical climate. The family contains a number of plants which contain phytochemical constituents with important pharmacological activities. This makes them unparallel to any other angiosperm family. The alkaloids include many important discoveries in the field of medicine. The richness of alkaloids in this family makes them important in traditional medicine to treat a variety of ailments. Most of the members of this family confined in deep forests and unaccessed areas, they are rare and overexploited. To determine the adulterants of these plants correct identification of the species are needed, the morphological and anatomical characters enable the identification of a species and can be used in the quality control of ayurvedic medicinal drugs to avoid adulteration.

Keywords: Adulterant, anatomy, key, Menispermaceae, taxonomy.

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Family Menispermaceae comprises about 75 genera and 510 species and are mostly climbers

widespread in countries with tropical and subtropical climate (Watson and Dallwitz, 1992). About 32 genera of this family are found in India. Of these Kerala comprises of 11 genera and 19 species; this includes *Cyclea fissicalyx* Dunn., which is an endangered forest species of Kerala (Sasidharan, 2012) and *Coscinium fenestratum* Colebr., which has been assessed as Critically Endangered species in Kerala (Ravikumar and Ved, 2000).

The distinguishing characters of the family Menispermaceae are simple alternate leaves with basal and apical pulvinate petiole, dioecious, actinomorphic, trimeric, hypogynous, heterochlamydeous and antipetalous flower, apocarpous ovary and drupaceous fruit (Savolainen et al, 2000). The family contains a number of plants that are scientifically recognized as they contain phytochemical constituents with important pharmacological activities. The members of the family are rich in different alkaloids such as benzyltetrahydroisoquinoline and aporphine derivatives. About 1858 alkaloids have been described from 244 species of the family (Barbosa et al., 2000). This makes them unparallel to any other angiosperm family. These alkaloids include many important

discoveries in the field of medicine (Dewick, 2002). The richness of alkaloids in this family makes them important in traditional medicine to treat a variety of ailments.

Many members of this family like *Anamirta cocculus* (L.) Wight & Arn., *Cissampelos pariera* L., *Stephania japonica* (Thunb.) Miers., *Cocculus hirsutus* L. etc are used in folk medicine to treat many diseases (Jahan et al., 2010). *Coscinium fenestratum* Colebr., *Tinospora cordifolia* Miers. and *Cyclea peltata* (Lam.) Hook. F. & Thoms are widely used in ayurvedic preparations (Chopra et al., 1982).

Apart from various medicinal uses, some plants of Menispermaceae have toxic effects also. *Chondrodendron tomentosum* Ruiz & Pavon. found in Brazil, Peru, Colombia and Panama contain turbocurarine, which is a bisbenzylisoquinoline alkaloid is the principal active component in the arrow poison curare. *Anamirta cocculus* seeds, known as Indian fish berry or crow killer contain picrotoxin (cocculin) is the major reported toxic component and is composed of poisonous picrotoxinin and the bitter non-poisonous picrotin (Jothivel and Paul, 2008). The oral administration of aqueous extract of wet and dry root tuber of *Stephania cepharantha* Hayata. and *S. epigaea* H.S. root tubers in China showed acute toxicity (Chen et al., 1999). *S. sinica* Diels. showed hepatotoxicity (Haller et al., 2002).