

**PHYTOCHEMICAL ANALYSIS OF SOME THERAPEUTIC MEDICINAL FLOWERS**

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***Corresponding author e-mail:** parvathi.adapa@gmail.com**ABSTRACT**

The aim of this study was to analyse the phytochemical constituents of the flowers that have tremendous therapeutic potential which could be explored to provide affordable medicines to masses. In this paper, an attempt was made to survey the phytochemicals of the flowers of ten taxa namely *Cassia auriculata*, L., *Catharanthus roseus*, (L.) Don., *Hibiscus rosa sinensis*, L., *Lawsonia inermis*, L., *Michelia champaca*, L., *Mangifera indica*, L., *Mimusops elengi*, L., *Moringa oleifera*, Lamk., *Nelumbo nucifera*, Gaertn. and *Rosa indica*, L. belonging to ten different angiospermic families to know their therapeutically important secondary metabolites. The scope of the floral remedies to cure various human diseases has been discussed.

Keywords: Phytochemical analysis, Medicinal flowers, Therapeutic values**INTRODUCTION**

India is a mega diversity country endowed with a rich medicinal flora. Man has been using vegetal material for medicinal purposes since hoary past. Human societies have developed certain systems of herbal medicines namely Ayurveda, Siddha, Unani etc., which are mainly associated with medicinal plants.^[1] India is the largest producer of medicinal herbs of the world. In India, herbs have been used in health care to relieve pain, discomfort, heart diseases, wounds and refreshment of the mind.^[2] The herbal drugs are also used as a household remedy for common ailments by all section of people either directly as folk remedies or in different indigenous systems of medicines or indirectly in pharmaceutical preparations of modern medicine.^[3] Mostly people prefer the whole herbs, leaves, stems and roots in the medicinal practices. But 'Flowers' also have many medicinal values that cure various ailments. India is known as 'Emporium of flowers' where the flowers are mainly involved in medicine during this 21st century. The flower medicine was introduced by Dr. Edward Bach, called father of flower medicine. He was a bacteriologist and consultant of homeopath in London. Not satisfied with homeopathic practice, he

turned to flower medicines. Flower medicine treats the "Negative Feelings" like anger, fear, guilt, inferiority complex, lack of confidence, envy, jealousy etc., by flooding the consciousness with positive attitudes are taken as basis for the selection of medicine.^[4] The Siddha system of medicine also has remedies through flowers. According to the National Institute of Siddha, Chennai, henna (*Lawsonia inermis*) flowers, if kept under the pillow, the cooling effect cures insomnia and used as cardio tonic.^[5] In folk medicine, henna has been used as an astringent, anti-hemorrhagic, sedative and also as therapeutic against amoebiasis, head ache, jaundice and leprosy. While, jasmine (*Jasminum sambac*) flower is useful in skin diseases and eye irritation. Rose (*Rosa indica*) cures constipation, hematuria and tuberculosis. Decoction of shoe flower (*Hibiscus rosa-sinensis*) is used for urinary disorders and menorrhagia. Decoction of neem (*Azadirachta indica*) flower acts as a stimulant and tonic in curing gastric ulcer and kills intestinal worms. *Cassia auriculata* flower is used in the treatment of skin diseases and checking body odour. The dried flowers are used as external scrub for body odours. This flower is also useful in treating diabetes. Crown flower (*Calotropis gigantea*) is used to treat

bronchial asthma. The flowers of *Clitoria ternatea* is used as purgative and diuretic. The flowers of *Catharanthus roseus* are used as chromium supplementation for certain kinds of leukemia and circulatory disorders.^[6,7] Hence, there is a need for search of medicinal flowers to treat various ailments. As there is no much focus on scientific investigation of flowers, the present study on analysis of phytochemicals of ten different medicinal flowers was taken up.

MATERIALS AND METHODS

The materials for the present study were collected from different places of Thanjavur, Tiruchirappalli, Sivagangai and Theni Districts of Tamil Nadu and are presented in table-1. The flowers were cleaned and shade dried. The powdered flowers were extracted with 80% ethanol. The extracts were filtered using Watt man filter paper. Phytochemical tests of ethanol extracts of each flower was carried out for alkaloids, flavonoids, HCN, indoles, phenols, saponins, steroids and tannins.^[8,9]

RESULTS AND DISCUSSION

The results of the phytochemical screening were presented in table-2. The phytochemical screening revealed the presence of therapeutically important secondary metabolites like alkaloids, flavonoids, phenols, indoles, saponins, steroids and tannins. Alkaloids and flavonoids are the potential phytochemicals which boost the immune system and are of anti inflammatory in nature and particularly useful in maintenance of healthy circulations. The present study showed the presence of alkaloids, flavonoids and phenols uniformly in all the flowers. Whereas, the flowers of *Hibiscus rosa-sinensis* and *Rosa indica* showed the absence of alkaloids. Tannins and related polyphenols have been

implicated to various pharmatherapeutic effects. In particular, the tannin containing remedies are used as anthelmintics, antioxidants, antimicrobials, antiviral and for cancer treatment.^[10, 11,12,13] The present study showed the presence of tannins in all the flowers except *Hibiscus rosa-sinensis* and *Mangifera indica*. These could be used as antioxidant, antimicrobial and antiviral agents in the near future. Indoles are present only in *Cassia auriculata*. Saponins are used in hormonal activity. In the present study, saponins were observed in *Catharanthus roseus* and *Rosa indica*. Absence of HCN was noted uniformly in all the flowers.

CONCLUSION

The results of the present study confirmed the folkloric usage of the ten medicinally important flowers. It is suggested that the flower extracts possess certain compounds with bioactive principles that can be used as active agents in new drugs for treating diseases. As floral medicines provide effective cure for various ailments they can be utilized both externally and internally in the form of herbal formulations like capsules, pills, decoctions, infusions, herbal oils, syrups, poultice, plasters, douches, tinctures etc. The abundance of floral wealth of our country can be explored to provide health care medicines at affordable cost. Further studies on medicinal flowers may bring potential benefits to the developing countries.

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Table 1: Selected list of medicinal flowers

Local name	Binomial	Family	Place of collection
Avarai	<i>Cassia auriculata</i> , Linn.	Caesalpiaceae	Sivagangai
Nithya kalyalni	<i>Catharanthus roseus</i> , (L.) Don.	Apocynaceae	Cumbum
Semparuthi	<i>Hibiscus rosa-sinensis</i> , Linn.	Malvaceae	Kadambangudi
Maruthani	<i>Lawsonia inermis</i> , Linn.	Lythraceae	Kadambangudi
Senbagam	<i>Michelia champaca</i> , Linn.	Magnoliaceae	Tiruchirappalli
Mambhalam	<i>Mangifera indica</i> , Linn.	Anacardiaceae	College campus
Mahilam	<i>Mimusops elengi</i> , Linn.	Sapotaceae	Tiruchirappalli
Murungai	<i>Moringa oleifera</i> , Lamk.	Moringaceae	Ariyamangalam
Thamarai	<i>Nelumbo nucifera</i> , Gaertn.	Nymphaeaceae	Srirangam
Rose	<i>Rosa indica</i> , Linn.	Rosaceae	Tiruchirappalli

TABLE 2: QUALITATIVE PHYTOCHEMICAL ANALYSIS OF MEDICINAL FLOWERS

Name of the plant	Alkaloids Test	Flavonoids Test	HCN test	Hot water test	Indoles test	Molish test	Phenols test	Saponins test	Steroids test	Tannins test
<i>Cassia auriculata</i>	+	+	-	-	+	+	+	-	-	+
<i>Catharanthus roseus</i>	+	+	-	-	-	+	+	+	-	+
<i>Hibiscus rosa-sinensis</i>	-	+	-	-	-	+	+	-	-	-
<i>Lawsonia inermis</i>	+	+	-	-	-	+	+	-	-	+
<i>Mangifera indica</i>	+	+	-	-	-	+	+	-	-	-
<i>Michelia champaca</i>	+	+	*	*	-	+	+	*	-	+
<i>Mimusops elengi</i>	+	+	*	*	-	+	+	*	-	+
<i>Moringa oleifera</i>	+	+	-	-	-	+	+	-	-	+
<i>Nelumbo nucifera</i>	+	+	*	*	-	+	+	*	+	+
<i>Rosa indica</i>	-	+	-	-	-	+	+	+	+	+

+ Positive; - Negative; * Not performed

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