Indian J. Applied & Pure Bio. Vol. 38(3), 1293-1296 (2023). **ISSN: 0970-2091**
A Web of Science Journal

Diversity and Ethnomedicinally important plants of the Family Euphorbiaceae in Girls College campus Khandwa (M.P.)

Kumud Dubey

Department of Botany, MLC Govt. Girls P. G. College,
Khandwa-450001 (India)

Abstract

In last few decades there has been an increasing interest in plants and their traditional uses. In present scenario it is useful for community health care and for conservation of cultural traditions and biodiversity. Many ornamental and medicinal plants of family Euphorbiaceac are present in the campus. In present study an attempt is made to evaluate the significance of plants of this family. Plants like *Euphorbia heterophylla* (wild *Poinsettia*) was found to grow as wild plant in abundant in the campus.

Key word *:* Medicinal plants, *Euphorbiaceae, Euphorbia, Acalypha, Jatropha.*

In environment plants occupy an important place as directly and indirectly they are source of our lives. With their ecological and economical importance, plants with medicinal values serves a lot for mankind. It is estimated that around 70,000 plant species have been used for medicinal purposes. The herbs provide the starting material for the synthesis of conventional drugs. Different parts of several medicinal plants to care different diseases has been used from ancient times in all over world.

Euphorbiaceac is a large family which is characterized by the presence of latex. Plants belonging to family are Mesophytic or Xerophytic in habitat . The family shows a great range of characterstics in vegetative and floral structures[3]. Mostly the members are Shrub or herbs, several species are Cactus like in habit and with thick fleshy stem where spines are also noted. The family is distinctive in having unisexual flowers with a superior usually 3- carpellate ovary. The stamens number from one to ten. In some species cyathium inflorescence is noted, characterized by a small cup like involucre consisting of fused together bracts and peripheral nectary glands , surrounding a ring of male flowers each a single stamen and in the middle of the cyathium stands a female flower a single pistil with branched stigmas. The whole arrangement resembles a single flower. Acalphoideae, Crotonoideae, Euphorbiodeae, Phyllanthoideae and Oldfieldioideae are sub families according to the most recent molecular research. The present study is made to evaluate the ethnopharmacological potential of plants of family Euphorbiaceae in the college campus which will be helpful to explore the use of latex extracts.

Table-1. Showing various species of the family Euphorbiaceae encountered in Girls College campus, Khandwa

S. no.	Botanical name	Category
1.	*Acalypha hispida* Burm f.	Cultivated
2.	*Acalypha indica* L.	Wild
3.	*Chrozophora tinctoria* (L.) A. Juss.	Wild
4.	*Croton bonplandianus* Baill	Wild
5.	*Euphorbia cyathophora* Murray	Wild
6.	*Euphorbia heterophylla* L.	Wild
7.	*Euphorbia hirta* L.	Wild
8.	*Euphorbia hypercifolia* L.	Wild
9.	*Euphorbia micraphylla* Lam.	Wild
10.	*Euphrbia milii* Des Moul	Cultivated
11.	*Euphorbia neriifolia* L.	Cultivated/ Wild
12.	*Euphorbia prostrata* Aiton	Wild
13.	*Euphorbia tirucalli* L.	Cultivated
14.	*Jatropha gossypiifolia* L.	Cultivated/ Wild
15.	*Jatropha integrrima* Jacq.	Cultivated
16.	*Jatropha podagrica* Hook	Cultivated
17.	*Pedilanthus tithymaloides* L.	Cultivated
18.	*Phyllanthus emblica* L.	Cultivated
19.	*Phyllanthus niruri* L.	Wild
20.	*Ricinus communis* L.	Cultivated/ Wild

The work was performed in the college campus in Khandwa (M.P.). Khandwa is district headquarter situated at 21.8314°N and 76.3498°E. The name of the institute is honoured after the famous poet freedom fighter Pt. Makhan Lal Chaturvedi. The building is combination of old heritage and newly constructed parts. The area is with rocky and black soils. For this study plants of the family were analyzed, phenological study was made. The plants were identified with the help of relevant literature. Various species of the family Euphorbiaceae encountered during the present investigation are shown in table-1.

The genus *Euphorbia* is the third major genus of the flowering plants. More than 5% species of *Euphorbia* are used in traditional medicines, mainly as emetic and purgative agents to treat digestive and respiratory disorders, skin and inflammatory conditions, migrane, intestinal parasites, gonorrhea, in wart cures, as antithelminthic and antiscorbutic.

These properties are due to the presence of phytochemicals in the form of secondary metabolites as terpenoids, flavonoids, polyphenols, ellagitannins, macrocyclic Jatrophane diterpenes and glycosides[2,4].

The species of *Euphorbia, Jatropha* and *Ricinus* have many medicinal uses which are applied in inflammation, eye swelling, antimicrobial, antioxidant, antiplasmodial, antidiabetes, anthelmintic, in breathing disorders, fever, vomiting, purgative, in skin diseases, antipyretic etc. Oil from seeds of *Ricinus* is very well known laxative. *Acalypha indica* leaves' juice is used in ulcers, rheumatism, bronchitis and in pneumonia. *Croton bonplandianum* leaves juice is used to cure cough, seed paste is used for skin care and latex is used in wounds. Whole plant paste of *Euphorbia hirta* is used for malarial fever .*Jatropha gossypifolia* roots are used in leprosy. *Ricinus communis* leaves extract is used as anti inflammatory, analgesic and as cardiac tonic. *Phyllanthus niruri* (*Bhui Amala*)

Photograph 1: Various wild and cultivated plants of family Euphorbiaceae in the campus.

Photo plate :- 1, *Acalypha indica* 2. *Euphorbia neriifolia* 3. *Euphorbia tirucalli* 4. *Euphorbia prostrata* 5. *Euphorbia microphylla* 6. *Euphorbia hypericifolia* 7. *Euphorbia hirta* 8. *Euphorbia heterophylla* 9. *Euphorbia cyathophora* 10. *Pedilanthus tithymaloides* 11. *Chrozophora tinctoria.*

Photograph-2: Abundant wild *Poinsettia* in campus.

is well known liver tonic. *Phyllanthus emblica* (Amla) fruits are rich source of vitamin C. Fruits are also useful in diabetes, cough, asthma, bronchitis and in dysentery.

Many antibacterial and antiviral chemical agents are noted in many members of the family. They are diterpenes, ceramides, tannins, alkaloids, flavonoids, glycosides, coumarins, steroids, saponins, triterpenes, phenols, peptides and many essential oils[6,7].

Two important factors make the plants of the family unique and they are worldwide distribution of the members to all sorts of habitats to which they must adapt, inducing a large variety of chemicals for defence or survival[1,5]. It is also noted that specific medicinal properties may be due to stress factors. Stress factors like temperature, salinity, drought etc. bring about synthesis of secondary substances. A total of twenty species of the family were collected from the campus. This study will be helpful for future research in phytochemistry, ethnomedicinal, pharmaceutical and taxonomical studies. Awareness in people is essential for health care use of these plants and for conservation of biodiversity.

References :

1. Bijakar S. *et al*., (2014) *Int. J. of phyto-medicines. 6*(2): pp 144-156.
2. Bohare Salehi *et al*., (2019) *Biomolecules 9* (8) : 337.
3. Hazrat Ali *et al*. (2020) *Bioscience Research J. of innovative Scientific information and Services Network 17*(3) : 1792-1797.
4. Johari S. *et al*., (2020) *World Journal of pharmaceutical Research. 9*(14) : 1477-1485.
5. Mwine J. T. *et al*., (2011) *Journal of Medicinal Plant Research. 5* (5) : 652-662.
6. Rizk Abdel F.M. (2008) *Botanical journal of Linnean Society. 94*(1-2) : 293-326.
7. Sinhababu A *et al.*, (2016), *Research and Reviews: Journal of Botany, 5*(2): 36-39.