



## RESEARCH ARTICLE

### ETHNOBOTANICAL STUDY RELATED TO FEVER IN ALIGARH DISTRICT (U.P.), INDIA

\*Yogendra Singh

Department of Botany, Divya Nand Vidyamandir Mahavidyalaya, Sandila, Hardoi

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#### ABSTRACT

Plants have been used as traditional medicine for several thousand years in the treatment of various diseases for human healthcare. Although, the different authors and workers have documented the uses of various medicinal plants from the different areas of India. Yet, the information on the ethnomedicinal plants medicine have been lacking from many interior areas of Aligarh district. The paper presents ethnomedicinal remedies for the treatment of fever. The paper highlights some less known ethnomedicinal practices related to 38 plant species in Aligarh district, U.P., India. The valuable information of these medicinal plants in traditional human healthcare practices; provide the new clues for new areas of research. Ethnobotanical studies were carried out to collect the ethnomedicinal informations from local people, vaidhya etc.

#### INTRODUCTION

In the tropical countries, the knowledge of medicinal plants among the people is based on the hundreds of the years of observations and identifications and experiments. In India, the medicinal plants have been used in different kinds of disease for human healthcare. The present study on some ethnomedicinal plant species is based on the collection of valuable information provided by the informers. The present study is related to the traditional practice pertaining to the various treatment of fever. The fever is caused by various factors like biotic factors and climatic factors. During the ethnobotanical studies, author has documented some valuable and interesting ethnomedicinal informations of plant species, which is being presented here.

#### MATERIALS AND METHODS

Several field visits are conducted to different localities and rural areas of Aligarh district during the survey. While noting information, every care is taken to record the local name of plants, their parts, mode of drug preparation and their uses. The modes of drug preparation of the different plant species are different for the treatment of fever. Plant species are collected and identified by using relevant flora (Duthie, 1903-1929). The ethnomedicinal uses of the plants reported by

practitioners and others are compared with available Scientific Literatures (Amiri and Joharchi, 2012; Datta *et al.*, 2014; Islam, 2000; Katewa *et al.*, 2001; Kaur, 2015; Kumar and Chauhan, 2005; Leishangthem and Sharma, 2014; Lone *et al.*, 2014; Saini, 1996).

#### RESULTS AND DISCUSSION

From communications and interviews with the local people, hakim, vaidh, experience old men, 38 ethnomedicinal plant species were collected from the interior area of Aligarh district, Which were used as traditional phyto-remedy for the curing the various types of fever. 38 medicinal plant species belonging to 25 families and 37 genera were enumerated in the present paper. Out of 25 families, Apocynaceae, Asteraceae and Lamiaceae were mostly used in the treatment of fever. The aboveground plant parts (73 percents) and underground plant parts (27 percent) are used for curing in diverse form of fever. Leaf was used in the majority of case (13 species), followed by stem (7), root (7), seed (5) whole (5) and fruit (2). The species have been described with alphabetical order of the botanical names followed by family name in bracket, local name and mode of administration. The study thus underlines the potentials of the ethnobotanical research and the need for the documentation of traditional ecological knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind.

\*Corresponding author: Yogendra Singh,

Department of Botany, Divya Nand Vidyamandir Mahavidyalaya, Sandila, Hardoi

1. *Achyranthes aspera* L. (Amaranthaceae), "Chirchita".: One teaspoonful of root powder is given to the patient thrice a day for 3–4 days for treatment of fever.

2. *Adina cordifolia* Hook.f. (Rubiaceae), "Hald": Extract (one teaspoonful) of stem bark is given thrice a day for three days for malarial fever.
3. *Ageratum conyzoides* L. (Asteraceae), "Sarhand": A paste prepared from the leaves of plant is applied externally in ague (a type of fever).
4. *Alstonia scholaris* L. (Apocynaceae), "Chitwan": Fresh barks is made into pea sized tablets. Three tablets are given daily for three days to cure malarial fever. Tincture and decoction of bark of plant are given in several cases of malarial fever for getting the relief.
5. *Amaranthus spinosus* L. (Amaranthaceae), "Kantachouli": Leaves are boiled and squeezed. Then these leaves mixed with sendha namak (rock salt), black pepper (*Piper nigrum*, Piperaceae) and bark powder of Pipal (*Ficus religiosa*, Moraceae) are given to the patient to get relief.
6. *Aniosomeles indica* L. (Lamiaceae), "Gobara or Kala bhangra": Steam of warmed decoction of plant is inhaled to get relief in fever.
7. *Azadirachta indica* A. Juss. (Meliaceae), "Neem": Bark decoction is given orally twice a day for seven days to cure malarial fever.
8. *Bacopa monnieri* L. (Scrophuliaceae), "Vermin": Plant juice mixed with powder of black pepper (*Piper nigrum*, Piperaceae) is given twice a day for three days in malarial fever.
9. *Barleria prionitis* L. (Acanthaceae), "Katsareya": Juice of plant leaves mixed with a little amount of honey or mishri is given to the patient in case of fever caused due to catarrhal affection.
10. *Carica papaya* L. (Fabaceae), "Papeeta": Old leaves and ripe fruits are boiled along with Aam leaves (*Mangifera indica*, Anacardiaceae). One tea cup full decoction are given in the morning and the evening for three days for the treatment of malaria fever.
11. *Cassia tora* L. (Caesalpiniaceae), "Panwar": Decoction of the seeds is given thrice a day for three days to cure malaria fever.
12. *Cleome viscosa* L. (Capparidaceae), "Hulhul": Some leaves of *Cleome viscosa* (hulhul) is massaged and bandaged on the both arms by the clean clothes in the case of intermittent fever. When fever is felt to come by the patient, some fresh and washed leaves are also given to the patient orally at that time for prevent the fever again.
13. *Coriandrum sativum* L. (Apiaceae), "Dhania": Equal amount (12 grams) of each seeds of Dhania and mishri (crystallized sugar) is soaked in water for 3 – 4 hours. After grinding and filtering, the extract is given to the children suffering from fever due to diarrhea. After increasing 1 – 2 degree temperature, fever temperature is decreased due to sweat. The decoction prepared from the mixer of Dhania and Sounf (*Foeniculum vulgare*, Apiaceae) is given to the patient. Fever is decreased due to sweet. Equal amount of Dhania leaves and Parwal leaves (*Trichosanthes dioica*, Cucurbitaceae) is boiled in 400 ml fresh water till the volume of decoction reduces to 100 ml. After filtration, the filtrate is given to the patient in the case of fever.
14. *Croton tiglium* Linn. (Euphorbiaceae), "Jamalgota": Seeds are soaked in water overnight then peel off them to get the endosperms. Cotton cloth containing these endosperms is boiled in 16 times more cow milk for 4 hours. After that cloth is removed from the milk. 4 grams of boiled endosperm mixed with 4 grams geru is grind in little amount of leaf juice *Aloe vera*. 2 grams is given with pure water to improve in fever.
15. *Cyperus rotundus* L. (Cyperaceae), "Motha": Decoction prepared from whole plant of Motha, young leaves of Neem (*Azadirachta indica*, Meliaceae), Black pepper (*Piper nigrum*, Piperaceae) and leaves of Tulsi (*Ocimum sanctum*, Lamiaceae) is given thrice a day for three days for malarial fever.
16. *Echinops echinatus* Roxb. (Asteraceae), "Oontkatela": Leaf decoction is being used orally in acute fever.
17. *Euphorbia hirta* L. (Euphorbiaceae), "Dudhi": 36 grams aboveground plant part and equal amount (12 grams) of each black pepper (*Piper nigrum*, Piperaceae) & pippali (*Piper longum*, Piperaceae) is ground in water and made it into black pepper sized pills. One pill is given along with a little amount of honey to the patient twice a day. 60 grams Dudhi plant and equal amount (24 grams) of each Black pepper (*Piper nigrum*, Piperaceae), endosperm of Karanz (*Pongamia pinnata*, Fabaceae), leaves of Tulsi (*Ocimum sanctum*, Lamiaceae) & powder of Kutki or karu (*Picrorhiza kurroa*, Plantaginaceae) are ground in dudhi juice and made it black pepper like pills. One pill is given two hours before fever. Again one pill is given after one hour.
18. *Evolvulus alsinoides* L. (Convolvulaceae), "Syamakranta": Root decoction of admixing with leaf juice of *Ocimum sanctum* is administered in fever attended with diarrhoea or indigestion.
19. *Ficus recemosa* L. (Moraceae), "Gular": Plant latex of is kept on the umbilicus for the treatment of fever. The latex is also given internally during the treatment.
20. *Heliotropium indicum* L. (Boraginaceae), "Hatishura": Leaves are boiled. These leaves are given in the cases of fever. The dose should be given about one half gram to 3 grams.
21. *Holoptelea integrifolia* (Roxb.) Planch. (Ulmaceae), "Papri": Bark is bandaged on both arms by clean cloth in case of intermittent fever for three days.
22. *Mangifera indica* L. (Anacardiaceae), "Aam": Dried bark of Aam and dried leaves of Amroud (*Psidium guajava*, Myrtaceae) are boiled in 500 ml water till the volume of decoction reduces to 150-200 ml. the decoction is given to the patient for 3 day in case of malarial fever.
23. *Melia azadarach* L. (Meliaceae), "Bukain": Leaf extract 5–10 ml of Bukain is administered orally twice a day for 7 days in fever.
24. *Mentha longifolia* L. (Lamiaceae), "Podina": Leaf decoction (75–100 ml) is being used in fever for reducing the temperature of body.
25. *Momordica charantia* L. (Cucurbitaceae), "Karela": Curry prepared by unripe fruits is given to patient to provide the relief.
26. *Nerium indicum* Mill. (Apocynaceae), "Kaner": Root sap (60 mg) is given to prevent the intermittent fever, but more quantity taken is shown poisonous effect on body.
27. *Ocimum basilicum* L. (Lamiaceae), "Kali Tulsi": Leaf juice of plant mixed with Adarak (*Zingiber officinale*, Zingiberaceae) and black peppers (*Piper nigrum*, Piperaceae) is given in the cold stage of intermittent fever.

28. *Ocimum sanctum* L. (Lamiaceae), "Tulsi": Three teaspoonfuls of leaf juice of plant mixed with three black peppers (*Piper nigrum*, Piperaceae) and little black salt (rock salt) is given thrice a day in fever. It is very effective against malarial fever.
29. *Oxalis corniculata* L. (oxilidaceae), "Khati mithi": Syrup prepared from mixing of 12 grams leaf extract with a little amount of sugar according test is given to the patient to getting the relief in fever. It also provides strength to liver and improves the inflammation of urinary bladder.
30. *Plumbago zeylanica* L. (Plumbaginaceae), "Chitak": Roots decoction of plant is given along with milk in the case of fever twice a day.
31. *Rauvolfia serpentina* (L.) Benth. (Apocynaceae), "Sarpghand": The mixer prepared from grinding the roots of plant with little Adarak (*Zingiber officinalis*, Zingiberaceae) and sandha salt (rock salt) is given to the patient. The dose 30 – 40 grams should be given. One teaspoonful root powder of plant is useful to give in case of fever thrice a day for three days.
32. *Saccharum spontaneum* L. (Poaceae), "Ganna": Juice of stem is given orally for getting relief in temperature, pain and nausea to the patient.
33. *Sesamum indicum* L. (Pedaliaceae), "Til": Powder of 20 –25 seeds mixed with ghee is given the people to avoid the typhoid fever.
34. *Sisymbrium irio* L. (Solanaceae), "Khumb kalan": Seed powder is given along with milk to typhoid patient twice a day for two weeks.
35. *Tinospora cordifolia* (Willd.) Miers. (Menispermaceae), "Giloy": The equal bark powder (500 gram) of Giloy (*Tinospora cordifolia*, Menispermaceae) & Neem (*Azadirachita indica*, Meliaceae) and equal amount (60 grams) of Pitt papra (*Fumeria indica*, Fumeriaceae), Dhania (*Coriandrum sativum*, Apiaceae), Soundh or dry Adarak (*Zingiber officinalis*, Zingiberaceae) & endosperm of Karanz (*Pongamia pinnata*, Fabaceae) is mixed and soaked in water overnight. The six bottles of extract is obtained in the early morning till 6 O'clock. 25 ml extract along with honey or mishri is given to fever patient in the morning daily.
36. *Vernonia cinerea* L. (Asteraceae), "Phulni": Root decoction of *Vernonia cinerea* is given mixing with lime juice to provide relief in malarial fever.
37. *Vinca rosea* L. (Apocynaceae), "Sadawahar": Root decoction of plant prepared with paste of long pepper (*Piper longum*, Piperaceae) is given in case of fever.
38. *Xanthium strumarium* L. (Asteraceae), "Chota gokhuru": Whole plant decoction taken is very effective in case of longstanding malarial fever.

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