

PLANTS USED BY THE RURAL COMMUNITIES OF DISTRICT NALANDA BIHAR

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Abstract: Throughout the globe, the traditional knowledge system has gained prime importance in context with conservation, sustainable development, and search for new utilization patterns of plant resources. In this context, the ethnomedicinal plants and the traditional healthcare system prevalent amongst the aboriginal and the rural population of various societies contribute significant role. Considering the importance of herbal medicines, the paper pertains to the studies conducted in the rural areas of Nalanda district, Bihar. The study is based on extensive field surveys, plant collection, and the interviews with the local women and the senior inhabitants. In all, over 70 plants species belonging to 32 families have been enumerated, which are found to be of common use by the locales.

Keywords: Ethnomedicine, Traditional healthcare, Nalanda, Bihar.

Introduction

Ethnomedicinal studies contributed a heap of knowledge on various indigenous traditional medicine systems, which are still prevailing in various societies. In an estimate, about 60-80% of the total population is still dependent on traditional medicines for their healthcare. In India, ethnomedicinal investigations have been conducted from various rural and remote localities, where the inhabitants are still dependent on herbal medicines. In the recent past, attention has been paid on various aspects of ethno-medico-botany in Bihar, where some areas bear very rich 20-27 percent of district Nalanda, which occupies of 25°10' North latitude and 85°55' East longitude. The Nalanda district spread over the area of 2367 sq. km. The district includes more rural than 60% of the population. The main occupation is farming. These people still rely on the folk medicinal system available to them from the nearby surroundings, only in some specific cases they avail advance medical facility. The area is well known for a wide variety of deciduous and evergreen forests.

Methodology

Extensive field surveys and plant collection were made from various localities of the area and the information was recorded on various aspects of medicinal plants through questionnaire, consultation and interviews with the local women and senior citizens. In the survey conducted during standard methodology. The plant specimens were identified, processed and deposited in the herbarium, University Department of Botany, B.R.A.B.U. Muzaffarpur. The medicinal uses of plant species are given with vernaculars (local names), and family of the plant.

1. Plant name/ Local name - *Abutilon indicum* (Linn.) Sweet Kanghi

Family - Malvaceae

Uses - Leaf powder is used as diuretic. Leaf paste with milk and sugar crystal (mishri) is given to cure leucorrhoea.

2. Plant name/ Local name - *Acalypha indica* Linn. Banmircha

Family - Euphorbiaceae

Uses - Leaf paste with black pepper powder is made into tablets and each tablet is given thrice a day to cure cold and cough.

3. Plant name/ Local name - *Acacia catechu* (Linn.f.) Willd. *Katha*
 Family - Mimosaceae
 Uses - Root extract is orally taken twice a day in piles.
4. Plant name/ Local name - *Acacia nilotica* (Linn.) Willd. *ex Delile Babur*
 Family - Mimosaceae
 Uses - Fruit powder is orally given in infertility in man. Leaf powder is given thrice a day in cold and cough. Leaf paste is applied externally in piles.
5. Plant name/ Local name - *Achyranthes asper* Linn. *Chirchira*
 Family - Amaranthaceae
 Uses - Leaf paste is rubbed on scorpion bite. Whole plant is burnt with Datura fruit; ash is taken with honey to cure bronchitis and asthma.
6. Plant name/ Local name - *Aegle marmelos* (Linn.) Correa *Bel*
 Family - Rutaceae
 Uses - Leaf paste is used in conjunctivitis. Leaf decoction is given in fever. Fresh leaf juice with black pepper is given to infants to cure cough. Bark paste is applied externally on boils.
7. Plant name/ Local name - *Ageratum conyzoides* Linn. *Kalijiri*
 Family - Asteraceae
 Uses - Leaf paste is applied on leucoderma. Fresh leaf juice is dropped on cuts to stop bleeding.
8. Plant name/ Local name - *Albizia lebbbeck* (Linn.) Benth. *Sissa*
 Family - Mimosaceae
 Uses - Bark paste is applied on leucoderma.
9. Plant name/ Local name - *Anisomeles indica* (Linn.) Kuntze *Dastavar*
 Family - Lamiaceae
 Uses - Leaf paste is applied externally on wounds. Powder of leaf and stem with mishri is orally given in constipation.
10. Plant name/ Local name - *Argemone mexicana* Linn. *Katai*
 Family - Papaveraceae
 Uses - Seed paste is applied externally in body pain. Stem juice is given orally in cold and cough.
11. Plant name/ Local name - *Asparagus racemosus* Willd. *Satawar*
 Family - Liliaceae
 Uses - Root extract mixed with milk is taken as a tonic in weakness. Dried root powder is taken to increase lactation.
12. Plant name/ Local name - *Bauhinia purpurea* Linn. *Kachnar*
 Family - Fabaceae
 Uses - Leaves are fried with ghee (clarified butter), made into paste, and applied externally on boils.
13. Plant name/ Local name - *Blumea lacera* (Burm.f.) DC. *Kukrendu*
 Family - Asteraceae
 Uses - Leaf paste with black pepper powder is given in dogbite. Leaf juice is given to relieve piles. Seed powder is given in leucorrhoea.
14. Plant name/ Local name - *Boerhavia diffusa* Linn. *Porannama*
 Family - Nyctaginaceae
 Uses - Leaf paste with little quantity of goat milk is applied in bone fracture. Root paste with ghee and black pepper powder is given in nausea.

15. Plant name/ Local name - *Bombax ceiba* Linn. *Semal*

Family - Bombacaceae

Uses - Bark decoction is given in dysentery. Root powder with mishri is given in constipation.

16. Plant name/ Local name - *Butea monosperma* (Lam.) Kuntze *Palash*

Family - Fabaceae

Uses - Root paste is applied in burns. Gum is applied on mouth blisters.

17. Plant name/ Local name - *Caesalpinia decapetala* (Roth) Alston *Kanja*

Family - Caesalpiniaceae

Uses - Leaf powder with mishri is given in fever. Leaf paste is applied on boils.

18. Plant name/ Local name - *Calotropis procera* (Aiton) Dryander *Akka*

Family - Asclepiadaceae

Uses - Dried flower powder is given with honey to cure bronchitis and asthma.

19. Plant name/ Local name - *Cannabis sativa* Linn. *Bhang*

Family - Cannabinaceae

Uses - Leaf powder with Carum sp (ajwain) is given to relieve dysentery. Leaf paste with little quantity of milk is applied in piles. Fresh leaf paste is also applied on wounds.

20. Plant name/ Local name - *Carrisa congesta* (Wight) Bedd. *Karonda*

Family - Apocynaceae

Uses - Powder of fruit and black pepper is taken with honey to cure bronchitis and asthma.

21. Plant name/ Local name - *Cassia fistula* Linn.. *Amaltas*

Family - Caesalpiniaceae

Uses - Leaf decoction is given in urinary disorders. Seed powder with common salt is in constipation.

22. Plant name/ Local name - *C. tora* Linn. *Pamar*

Family - Caesalpiniaceae

Uses - Leaf paste is applied in leprosy.

23. Plant name/ Local name - *Chenopodium ambrosioides* Linn. *Viks*

Family - Chenopodiaceae

Uses - Leaf powder with mishri is taken in cholera. Leaf paste is rubbed on scorpion bite and honeybee bite.

24. Plant name/ Local name - *Clerodendrum viscosum* Vent. *Bhatar*

Family - Verbenaceae

Uses - Piece of stem is used as a tooth stick in toothache. Leaf decoction is given to the lady suffering from fever after child birth.

25. Plant name/ Local name - *Cleome iscosa* Linn., *Hurhura*

Family - Capparaceae

Uses - Leaf powder with black pepper powder is given in fever. Leaf paste with black pepper powder is given thrice a day in piles.

26. Plant name/ Local name - *Coccinia indica* Wight & Arn. *Ban parimal*

Family - Cucurbitaceae

Uses - Fruit powder is given in leucoderma.

27. Plant name/ Local name - *Cocculus hirsutus* (Linn.) Diels *janjamuni*

Family - Menispermaceae

Uses - Leaf juice with mishri is taken in leucorrhoea.

28. Plant name/ Local name - *Dalbergia sissoo* Roxb. *Sisham*
Family - Fabaceae
Uses - Leaf powder with mishri is taken in leucorrhoea.
29. Plant name/ Local name - *Datura stramonium* Linn. *Datura*
Family - Solanaceae
Uses - Fruit is brunt and ash is given orally with honey in bronchitis and asthma.
30. Plant name/ Local name - *Desmodium gangeticum* (Linn.) DC. *Sarivan*
Family - Fabaceae
Uses - Leaf paste is applied in piles. Leaf decoction is given in cold and cough.
31. Plant name/ Local name - *Dioscorea bulbifera* Linn. *Siyasingar*
Family - Dioscoreaceae
Uses - Powder of root and black pepper is given in cold and cough. Root paste is given in rheumatism.
32. Plant name/ Local name - *Eclipta prostrata* (Linn.) Linn. *Bhangra*
Family - Asteraceae
Uses - Leaf paste with black pepper powder is given as a blood purifier and in cutaneous diseases. Leaf paste is applied on piles.
33. Plant name/ Local name - *Eucalyptus citriodora* Hook. *Liptis*
Family - Myrtaceae
Uses - Leaf decoction added with powder of black pepper is given in fever.
34. Plant name/ Local name - *Euphorbia dracunculoides* Lam. *Tutli*
Family - Euphorbiaceae
Uses - Leaf paste with ghee and powder of black pepper is given in snakebite. Leaf powder is given in epilepsy.
35. Plant name/ Local name - *E. hirta* Linn. *Badi dudhi*
Family - Euphorbiaceae
Uses - Leaf paste with ghee is applied on boils. Leaf juice is given to check vomiting and nausea.
36. Plant name/ Local name - *E. thymifolia* Linn. *Choti dudhi*
Family - Euphorbiaceae
Uses - Plant extract is given in dysentery. Plant decoction in milk and is given in rheumatism.
37. Plant name/ Local name - *Ficus palmata* Forsk. *Anjeer*
Family - Moraceae
Uses - Fruit paste mixed with cow's urine is applied in leucoderma.
38. Plant name/ Local name - *Gomphrina celosioides* Marti. *Pustpavini*
Family - Amaranthaceae
Uses - Leaf juice is given in epilepsy.
39. Plant name/ Local name - *Gossypium arboreum* Linn. *Kapas*
Family - Malvaceae
Uses - Root powder is given in menstrual problems; seed powder is given to increase lactation. Leaf juice is poured drop by drop to relieve ear pain. Leaf powder is given in suppressed urination.
40. Plant name/ Local name - *Ipomoea fistulosa* Marti. ex Choisy *Beshram*
Family - Convolvulaceae
Uses - Powder of dried leaves and black pepper is given in dog bite.

41. Plant name/ Local name - *Jatropha curcus Linn. Jangli arand*
Family - Euphorbiaceae
Uses - Fruit powder is given in constipation Tender leaf paste mixed with curd is given in jaundice and other liver troubles.
42. Plant name/ Local name - *Kalanchoe pinnata (Lam.) Persoon Ajuba*
Family - Crassulaceae
Uses - Ghee smeared on leaves is fried and applied on boils.
43. Plant name/ Local name - *Linum usitatissimum Linn. Alsi*
Family - Linaceae
Uses - Seed powder is given to cure infertility in males.
44. Plant name/ Local name - *Madhuca longifolia (Koenig) Mac Bride Mahuaa*
Family - Sapotaceae
Uses - Dried fruit powder is given to relieve dysentery. Fried flowers with milk are given as blood purifier and in cutaneous diseases.
45. Plant name/ Local name - *Mallotus philipensis (Lam.) Muell-Arg. Kambila/ Rohini*
Family - Euphorbiaceae
Uses - Leaf powder is given in cough. Leaf paste is applied on wounds.
46. Plant name/ Local name - *Melia azedarach Linn. Bakain*
Family - Meliaceae
Uses - Leaf decoction is given to cure cold and cough. Fruit decoction is given with mishri to relieve piles.
47. Plant name/ Local name - *Momordica dioica Roxb. ex Willd. Jangli karela*
Family - Cucurbitaceae
Uses - Leaf paste is applied in body swellings.
48. Plant name/ Local name - *Morus alba Linn. Sehtoot*
Family - Moraceae
Uses - Leaf powder is given in cholera.
49. Plant name/ Local name - *Murraya koenigii (Linn.) Spreng. Meethi neem*
Family - Rutaceae
Uses - Powder of leaves and black pepper is given in hemiplegia. Leaf paste is applied on burns.
50. Plant name/ Local name - *Nyctanthes arbortristis Linn. Harsingar*
Family - Nyctaginaceae
Uses - Leaf paste with black pepper powder made into tablets is given in rheumatism.
51. Plant name/ Local name - *Ocimum gratissimum Linn. Ban tulsi*
Family - Lamiaceae
Uses - Leaf paste is given in epilepsy. Leaf juice is poured drop by drop in rhinitis.
52. Plant name/ Local name - *Oxalis corniculata Linn. Choka*
Family - Oxalidaceae
Uses - Leaf powder with black pepper powder is given in epilepsy.
53. Plant name/ Local name - *Phyla nodiflora (Linn.) Greene Katri*
Family - Verbenaceae
Uses - Leaf paste with black pepper powder made into tablets is given in hemiplegia.

54. Plant name/ Local name - *Polygonum barbatum* Linn. *Kabra buti*
Family - Polygonaceae
Uses - Leaf decoction is given in fever.
55. Plant name/ Local name - *Polygonum plebium* R.Br. *Machechi*
Family - Polygonaceae
Uses - Leaf powder with mishri is given in menstrual disorders.
56. Plant name/ Local name - *Punica granatum* Linn. *Aanar*
Family - Punicaceae
Uses - Bark paste is applied in leprosy.
57. Plant name/ Local name - *Rauvolfia serpentina* (Linn.) Benth. ex Kurz. *Serpgandha*
Family - Apocynaceae
Uses - Leaf paste is given in snakebite and spider bite.
58. Plant name/ Local name - *Ricinus communis* Linn. *Arand*
Family - Euphorbiaceae
Uses - Small quantity of fruit powder is given in constipation. Tender leaf paste mixed with curd is given in jaundice.
59. Plant name/ Local name - *Ruellia tuberosa* Linn. *Indrajeet*
Family - Acanthaceae
Uses - Leaf decoction with black pepper powder is given in cold and cough.
60. Plant name/ Local name - *Sida acuta* Burm. f. *Mahabala*
Family - Solanaceae
Uses - Leaf powder with mishri is given as a brain coolant.
61. Plant name/ Local name - *Solanum nigrum* Linn. *Makoi*
Family - Solanaceae
Uses - Leaf powder is given in body swellings and general inflammation.
62. Plant name/ Local name - *S.anguivi* Lam. *Ban bhata*
Family - Solanaceae
Uses - Leaf decoction is given in fever.
63. Plant name/ Local name - *S. surrattense* Burm.f... *Kateri*
Family - Solanaceae
Uses - Fruit powder is given in constipation. Flowers with honey are given in cold and cough.
64. Plant name/ Local name - *Toona hexandra* (Wallich ex Roxb.) M. Roemer *Tun*
Family - Meliaceae
Uses - Fruit powder with mishri is given in leucorrhoea.
65. Plant name/ Local name - *Tribulus terrestris* Linn. *Gokhru*
Family - Oxalidaceae
Uses - Fruit powder is given in urinary complaints. Leaf paste is applied on piles.
66. Plant name/ Local name - *Vernonia cinerea* (Linn.) Less. *Sehdevi*
Family - Asteraceae
Uses - Leaf paste is applied in headache. Plant juice is given in fever.

67. Plant name/ Local name - *Vetiveria zizanioides* (Linn.) Nash Khas

Family - Poaceae

Uses - Leaf juice and mishri is given with cow's milk to cure mental disorders. Root powder is used as a brain coolant.

68. Plant name/ Local name - *Vitex nigundo* Linn. Nirgundi

Family - Verbenaceae

Uses - Leaf juice is given as antihelmintic. Leaf paste is applied in swellings.

69. Plant name/ Local name - *Withania somnifera* (Linn.) Dunal Ashwagandha

Family - Solanaceae

Uses - Paste of leaves mixed with Boerhavia leaves is applied in body pain and inflammation.

70. Plant name/ Local name - *Ziziphus mauritiana* Lam. Ber

Family - Rhamnaceae

Uses - Leaf paste is applied on burns. Seed powder is given in conjunctivitis.

Result and discussion

The survey indicated that the folk medicines are quite prevalent in the rural communities of the district. The information includes the medicinal value of 70 plant species belonging to 32 families, which was collected from the some folk population. The common diseases for which instant traditional remedies have been practiced include boils, cut and wounds, epilepsy, fever, leucorrhoea, leucoderma, leprosy, piles, poisonous bites, rheumatism, cold and cough etc. Normally the drugs are used in crude forms and the most common preparations are extract, infusion, decoction, paste, powder etc. Dosage pattern varies with the drug preparation, age of the patient, severity of the diseases, and personal judgment of the practitioner. Although all the parts are in use to various remedies, however, use of leaves is very frequent as compared to other parts. In general, along with plant parts black pepper, mishri (sugar crystals), and honey are commonly added in most of the preparations, indicating their synergetic affects. Addition of honey is quite common in respiratory troubles, where as use of black pepper and mishri is believed to add flavour, palatability and promote effectiveness of the drug. Usage patterns of plant species in context with various remedial measures are more or less variant or similar to the reported ones. However, in the study, uses of *Abutilon indicum*, *Blumea lacera*, *Dalbergia sissoo*, *Toona hexandra* (in leucorrhoea), *Acacia catechu*, *Desmodium gangeticum*, *Eclipta prostrata* (in piles), *Aegle marmelos* (in conjunctivitis), *Albizia lebbeck*, *Coccinia indica* (in leucoderma), *Asparagus racemosus* (as galactagogue), *Blumea*, *Blumea lacera*, *Ipomoea fistulosa* (in dog bite), *Carrisa carandus* (in bronchitis), *Cassia tora*, *Euphorbia dracunculoides* (in leprosy), *Murraya koenigii*, *Phyla nodiflora*, *Vetiveria zizanioides* (in hemiplegia), *Ocimum gratissimum*, *Oxalis corniculata* (in epilepsy), and *Linum usitatissimum* (in male fertility) are little known and interesting. Such utilization pattern requires further phytotherapeutical investigations to support bioprospecting of these herbal drugs.

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