

Ethno-medicinal wisdom of tribals of Aurangabad district (M.S.), India

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The present communication provides interesting unpublished traditional phytotherapy of seventy two indigenous medicinal plants used by rural and tribal population of Aurangabad district, Maharashtra, India to treat various human ailments. As the traditional herbal remedies are based on ancestral knowledge and empiric experiences, we have provided the tribal and folk phytotherapy and technology for preparation of drug so that at least a few plants can be considered for efficacy and analysis for further studies. Thus, this type of ethno-medicinal survey appears to be useful for the research on medicinal plants for the betterment of mankind.

Keywords: Aurangabad district, Ethno-medicinal wisdom, Medicinal plants, Phytotherapy, Tribals.

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Introduction

Aurangabad district a part of Deccan plateau is situated at the centre of Maharashtra state with an area of 10,106 square kilometer lying between 19° 18' and 20° 40' North latitudes and 74° 40' and 76° 40' East longitudes (Fig. 1). The district includes nine tehsils with a population of 19, 71,006. Roughly triangular in shape, the southern side corresponds to the river Godavari and the northern side to the northeast trending arm of the Ajanta ranges. The major part of the district is predominantly inhabited by rural population which is 62.5 per cent of total population. In the Kannad, Vaijapur, Sillod and Soygaon tehsils there are few tribal inhabitants like *Bhil*, *Pardhi*, *Laman*, *Vadar*, *Kaikadi*, *Pardhan*, *Andh*, *Vaidu* and others; 6.98 per cent of the total population live in small pockets¹. Tribals of the region use traditional herbal formulations to treat common ailments despite the availability of the modern pharmaceutical drugs in the nearby towns and cities. The district largely remained unexplored as regards its ethnobotanical studies except some sporadic reports on some edible and medicinal plants and their uses in floristic studies²⁻⁶. The literature review suggests that Aurangabad district although has received some

attention from floristic point of view, it has remained practically untouched ethnobotanically. Keeping this view in mind, survey on ethno-therapeutics of some medicinal plants used among rural and tribal populace of Aurangabad district was undertaken.



Fig. 1 — Location map of Aurangabad district showing study areas

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Materials and Methods

For gathering information regarding plant and plant parts used medicinally by the tribal and local people, several field trips were undertaken in the tribal areas of Aurangabad district, viz. Kannad, Vaijapur, Sillod and Soygaon during 2007-2009. The desired information was collected during field trips on the basis of interview with the tribals and local people by repeated enquiries, changing the pattern of questioning and by showing the collected plants to one tribal healer/rural people to another of a distinct locality and asking them for its use as medicine and vice-versa. Of about 193 people surveyed, 106 were rural and 87 were tribals. The mode of making the preparation and their application in each case was minutely recorded. Voucher specimens collected (Plate 1), processed as per routine herbarium methods, identification of collected plant material was made either in the field itself or in laboratory following the district and state floras⁷⁻¹¹, given accession numbers and deposited in the department of Botany, Pratap College, Amalner, Maharashtra, India.

Under the enumeration, the plant species are arranged in alphabetical order, along with family and local names in parenthesis, place of collection, voucher number and their ethnobotanical information. An asterix is marked where new use for the plant is reported.

Enumeration

1. *Abelmoschus manihot* (Linn.) Medic. (Malvaceae, *Ran bhendi*), Kondabari, VVB-805.

Ointment of roasted root in coconut oil is applied on burns to cure.

2. *Achyranthes aspera* Linn. (Amaranthaceae, *Aghada*), Tandulwadi, VVB-685.

Decoction of whole plant is given in painful delivery.

3. *Agave vera-cruz* Mill. (Agavaceae, *Kektad*), Dongargaon, VVB-478.

The powder of the dry leaves in water is given in dose of one teaspoonful a day in jaundice and liver complaints.

4. **Ailanthus excelsa* Roxb. (Simaroubaceae, *Ghodlimb, Maharukh*), Daskul, VVB-469.

Concoction of stem bark powder and *misri* is taken with water to get rid of jaundice.

5. **Ammannia baccifera* Linn. (Lythraceae, *Bharajambhula*), Shibghat, VVB-905.

The ashes of leaves with oil is applied to herpetic eruptions.

6. *Argemone mexicana* Linn. (Papaveraceae, *Pivladhotra, Bilayati*), Bibkheda, VVB-498.

One teaspoonful of seeds infusion is given with one cup of preboiled lukewarm water, for treatment of asthma.

7. *Asparagus racemosus* Willd. var. *javanicus* Baker (Liliaceae, *Shatawari*), Hilalpur, VVB-540.

For galactagogue and seminal weakness, two teaspoonful crushed root with sugar is taken once a day for 15 days. Root decoction is given to the women suffering from leucorrhoea.

8. *Bacopa monnieri* (Linn.) Penn. (Scrophulariaceae, *Neer-brahmi*), Gudma, VVB-362.

The pounded leaves (5 g) with powder of 2-3 fruits of black pepper are given as a single dose in bone fractures while hot or cold bandages of the same are applied locally.

9. *Balanites aegyptiaca* (Linn.) Delile (Balanitaceae, *Hingan-bet*), Dhangarwadi, VVB-504.

Tablets prepared from seed powder and jaggery (1:2) taken empty stomach for a week in case of heart diseases.

10. **Baliospermum montanum* (Willd.) Muell-Arg. (Euphorbiaceae, *Danti*), Chambharwadi, VVB-407.

Root decoction is recommended to treat dropsy, jaundice and inflammation of piles. Oil obtained from seed or poultice of crushed seeds is applied externally to cure rheumatism and facial paraplegia.

11. *Bauhinia variegata* Linn. (Caesalpiniaceae, *Aapta, Kanchan, Kachnar*), Bajathan, VVB-110.

Decoction of the root bark is given with little honey to reduce obesity. Stem bark decoction is given in menorrhagia and other gynaecological problems.

12. *Biophytum sensitivum* (Linn.) DC. (Oxalidaceae, *Jharera, Ladjiri, Lajalu*), Chiwali, VVB-204.

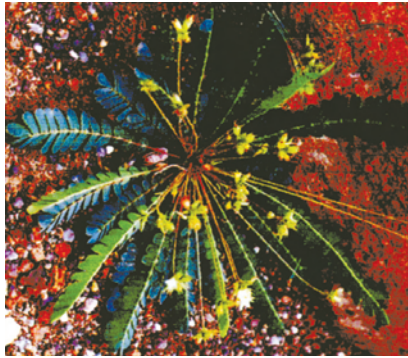
The slightly roasted leaves are applied over bruises, boils, wounds and insect bites.

13. **Buchanania lanzan* Spreng. (Anacardiaceae, *Charoli*), Vasadi, VVB-974.

Two teaspoonful extract of fresh leaves and stem bark in equal proportion, mixed in a cup of milk given internally once a day for a week to cure temporary male sterility and also to purify blood.

14. *Caesalpinia bonduc* (Linn.) Roxb. (Caesalpiniaceae, *Gajga, Sagrgota*), Chiwali, VVB-282.

One inch of root to be chewed as an antidote in snakebite. Powder of dry root in water is given in



Biophytum sensitivum



Caesalpinia bonduc



Cardiospermum halicacabum



Enicostema hyssopifolium



Helicteris isora



Jatropha curcas



Madhuca indica (flowers)



Phyllanthus fraternus



Solanum surattense

dysmenorrhea and amenorrhoea. Powdered seeds mixed with pepper powder in equal parts given orally in the treatment of malaria.

15. *Canna indica* Linn. (Cannaceae, *Kardali*), Tunki, 918.

For earache, the seed juice is used as an ear drop.

16. *Cardiospermum halicacabum* Linn. (Sapindaceae, *Kapalphodi*, *Kapalphuti*), Salegaon, VVB-114.

Juice of leaves is used as ear drop for earache.

17. *Carissa congesta* Wt. (Apocynaceae, *Karawanda*), Andhari, VVB-220.

Paste of root applied on forehead in headache. Decoction of root is given for strengthening and giving tone to the stomach.

18. *Cassia auriculata* Linn. (Caesalpiniaceae, *Tarwad*, *Chamar-aawali*), Andhari, VVB-997.

Young leaves crushed in curd and taken internally for two days to keep body cool. Crushed flowers with goat's milk administered orally in case of excessive white discharge.

19. *Cassia fistula* Linn. (Caesalpiniaceae, *Bahava*, *Kervalo*, *Amaltas*), Vaijapur, VVB- 853.

One cup of root bark infusion is given at morning and evening for 5 to 7 days in jaundice. Powdered stem bark and leaves (1:1) mixed with coconut oil to make paste and applied topically over the affected parts to treat skin diseases.

20. *Cassia tora* Linn. (Caesalpiniaceae, *Tarwat*, *Tarota*), Shibghat, VVB-879.

Decoction of roots is given orally in gonorrhoea.

21. *Celosia argentea* Linn. (Amaranthaceae, *Kurdu*), Dhangarwadi, VVB-946.

The flowers and seeds are crushed with water and used (2-3 teaspoon thrice daily) in cough. Decoction of roots is said to be effective in kidney stone and other urinary troubles.

22. **Clerodendrum phlomidis* (Linn.) Jacq. (Verbenaceae, *Arni*), Bhildara, VVB-09

Root powder is used as massage for the relief of soreness and pain of gums and teeth. One table spoon powder of leaves mixed with two tablespoon of ghee and jaggery given twice a day for a week in the treatment of jaundice.

23. *Clitoria ternatea* Linn. (Fabaceae, *Gokarna*), Tandulwadi, VVB-304.

The mixture of the juice of the leaves and ginger is applied on various parts of body to check fever.

24. *Cordia dichotoma* Forst. f. (Boraginaceae, *Bhokar*), Adgaon, VVB-91.

Decoction of leaves used in gonorrhoea, gynec disorders and for giving tone and vitality to the body. Healthy matured twig is used as toothbrush, takes care of tooth ache and gum complaints.

25. **Crinum asiaticum* Linn. (Amaryllidaceae, *Rankanda*), Dongargaon, VVB-648.

Juice of leaves dropped in ear in earache. Powdered root is given as alexipharmic and in loss of memory.

26. *Datura metel* Linn. (Solanaceae, *Kala-dhatura*, *Kala dhotra*), Hasta, VVB-42.

The leaves are powdered and mixed with coconut oil and applied externally for sore skin.

27. **Dendrophthoe falcata* Ettings. (Loranthaceae, *Menda*, *Bandgul*), Narsinpur, VVB-212.

Schizophrenia is treated with a mixture of powder of stem and few grains of rice grains in ghee for a longer period.

28. *Diospyros melanoxylon* Roxb. (Ebenaceae, *Temru*, *Tendu*, *Teburni*), Dhangarwadi, VVB-135.

The fruits are powdered and taken 3 times a day for a week in stomach disorders. The cleaned, dried and powdered root bark is given in the dose of one tablespoon twice a day with milk in seminal debility and oligospermia.

29. **Dolichandrone falcata* (Wall. ex DC.) Seem. (Bignoniaceae, *Medh-shingi*), Andhari, VVB-354.

Leaves are used in steam-bath to relieve muscular pains and back-ache. Powder as well as infusion of root bark is given internally in acute rheumatism.

30. *Echinops echinatus* Roxb. (Asteraceae, *Utanti*, *Upkata*, *Utkatari*), Adhur, VVB-106.

Root powder is taken orally after parturition as a tonic and restoration of vagina and uterus. The decoction of whole plant is given internally as abortifacient.

31. **Eleusine aegyptiaca* (Linn.) Desf. (Poaceae, *Mahar nachani*), Dahegaon, VVB-229.

Decoction of whole herb used internally in contraction of the voluntary muscles.

32. *Enicostema hyssopifolium* (Willd.) Verd. (Gentianaceae, *Nai*, *Nayata*, *Mamijwa*), Gaurpimpri, VVB-876.

Fresh juice obtained from whole plant taken internally for curing piles, diabetes. Poulitice of whole plant is applied locally on piles. For blood purification, one glass extract of fresh leaves is taken internally every day for 15 days.

33. *Eranthemum roseum* (Vahl.) R. Br. (Acanthaceae, *Helkarav*), Tunki, VVB-343.

Infusion of root is taken internally to treat stomachache.

34. *Euphorbia hirta* Linn. (Euphorbiaceae, *Dudhani, Dudhanali*), Deskul, VVB-759.

The crushed leaves are applied on affected parts to stop bleeding.

35. *Ficus racemosa* Linn. (Moraceae, *Umber*), Adgaon, VVB-386.

Decoction of bark is given to lactating mother to increase the secretion of milk. It gives tone and vitality to the body. Decoction of the ripe fruits is given to take care of menorrhagia, nose bleeding. The sap of the root is used in the treatment of diabetes.

36. **Gossypium herbaceum* Linn. var. *acerifolium* (Guill. & Perr.) Cheval. (Malvaceae, *Kapas, Kapus, Dev kapus*), Talawada, VVB-126.

Infusion of the root is used at morning and evening for a week in the treatment of jaundice.

37. *Gymnema sylvestre* R.Br. (Asclepiadaceae, *Gudmar*), Vaijapur, VVB-518.

The leaf juice is taken internally as well as applied externally, it is said to be useful to cure wounds and boils.

38. *Helicteres isora* Linn. (Sterculiaceae, *Murud Sheng*), Kolwadi, VVB-658.

Decoction of root is applied on cuts and wounds.

39. *Hemidesmus indicus* (Linn.) R. Br. (Periplocaceae, *Anant mul, Sariva, Upalsari*), Kautgaon, VVB-02.

Powder and decoction of root is given orally to cure inflammation of urinary passages, rheumatism and leucorrhoea. Decoction of root is administered to take care of loss of appetite, fever. Root powder given orally with milk and sugar in morning empty stomach for laziness, weakness and body pains.

40. **Heteropogon contortus* (Linn.) P. Beauv. ex Roem & Schult. (Poaceae, *Kusali gawat*), Dhangarwadi, VVB-131.

Decoction of inflorescence is given in asthma as bronchodilator.

41. *Hibiscus cannabinus* Linn. (Malvaceae, *Ambadi*), Kanadgaon (Kannad), VVB-939.

Juice of flower mixed with a small quantity of sugar and 3 or 4 crushed black pepper seeds are given orally for biliousness with acidity.

42. **Hymenodictyon obovatum* Wall. (Rubiaceae, *Modal*), Kawitkheda, VVB-620.

Fresh stem bark juice is given to the patient of night blindness.

43. **Jatropha curcas* Linn. (Euphorbiaceae, *Mogali-errand*), Adhur, VVB-391.

Juice of tender leaves with cow milk is given internally to treat jaundice. The leaf juice mixed with oil is used to treat local inflammation of nerves.

44. **Justicia gendarussa* Burm. f. (Acanthaceae, *Baad*), Amba, VVB-792.

The juice of the fresh leaves is dropped into the ear for earache, and into corresponding nostril on the side of the head affected with hemicrania.

45. *Lagerstroemia parviflora* Roxb. (Lythraceae, *Lendi*), Kanadgaon (Warul), VVB-231.

Decoction of the bark and leaves is given for diabetes; the same is also used to promote the flow of urine. The infusion of bark powder given internally as antipyretic, reduce fever as lowering body temperature.

46. **Leonotis nepetaefolia* (Linn.) R. Br. (Lamiaceae, *Deepmal, Matisul*), Danegaon, VVB-21.

When the breasts swell and milk does not pass through the nipples, the crushed root is rubbed on the breast.

47. *Leucas cephalotes* (Roth) Spreng. (Lamiaceae, *Tamba, Tumba*), Lalwan, VVB-148.

Flower juice (10 ml) is given daily early in the morning to prevent frequent abortion.

48. *Ludwigia perennis* Linn. (Onagraceae, *Pan Lavang*), Dewpur, VVB-241.

Pulp obtained from crushed plant, steeped in butter milk is given in dysentery. The root decoction is taken twice a day for one week in intermittent fever.

49. *Madhuca indica* J. F. Gmel. (Sapotaceae, *Moha, Mahu, Mahuva*), Andhari, VVB-344.

Decoction of bark given internally and milky latex is applied locally to get relief from rheumatic pains. Powder of dried flowers is mixed with alcohol and two spoonful of the mixture is given twice a day against indigestion as well as to cure oral ulcers.

50. *Merremia tridentata* (Linn.) Hallier f. (Convolvulaceae, *Undir kani*), Jamdi Jagir, VVB-29.

Root decoction taken internally to get rid of rheumatism.

51. *Morinda citrifolia* Linn. (Rubiaceae, *Aal, Bartondi*), Khirdi (Kannad), VVB-92.

Infusion of bark is given in morning for a week in jaundice.

52. *Moringa oleifera* Lamk. (Moringaceae, *Shevga*), Shibghat, VVB-82.

Decoction of root is administered orally for rheumatic fever and chronic rheumatism while root paste mixed with common salt applied on inflamed joints.

53. *Ocimum sanctum* Linn. (Lamiaceae, *Tulas, Tulsi*), Galle Bargaon, VVB-488.

The decoction of the seeds is given in cases of chronic constipation and menstrual complaints (leucorrhoea and other related problems).

54. *Oroxylum indicum* (Linn.) Benth. ex Kurz (Bignoniaceae, *Tetu, Tiutun*), Kolwali, VVB-180.

The decoction of fruits is given for heart diseases, throat, piles and to check cough in bronchitis.

55. *Oxalis corniculata* Linn. (Oxalidaceae, *Ambuti, Ambushi*), Adhur, VVB-640.

Infusion of herb is given to reduce fever and also applied over the forehead in bilious headache. A fine paste of whole plant with little black pepper powder is applied to boils, abscesses, wounds and weeping eczema.

56. **Pergularia daemia* (Forsk.) Chiov. (Asclepiadaceae, *Utaran, Mendhadhudi*), Ghatshendra, VVB-508.

Leaf juice with lemon or ginger is applied to painful joints. The fresh leaves made in to a pulp and used as a stimulating poultice in carbuncle.

57. *Phyllanthus fraternus* Webster syn. *P. niruri* Hook. f. non Linn. (Euphorbiaceae, *Bhui-awli, Hivarkheda* (Gautala), VVB-943.

Juice of whole plant is given one teaspoon per day for a week in jaundice. Seeds and leaves in the form of decoction given internally in diabetes.

58. **Polycarpaea corymbosa* (Linn.) Lamk. (Caryophyllaceae, *Pandhari fulli, Ujalifulli*), Koradgaon, VVB-312.

Two teaspoonfuls of powder prepared from whole plant is given orally with honey thrice a day till recovery to treat jaundice.

59. *Rungia repens* (Linn.) Nees (Acanthaceae, *Ghatipitpapada*), Shahjatpur, VVB-172.

The leaves mixed with castor oil applied to the scalp in cases of *Tinea capitis*. Whole plant dried and pulverized is given in doses of one tablespoon daily in jaundice.

60. **Salvadora persica* Linn. var. *wightiana* (Planch. ex Thw.) Verdc. (Salvadoraceae, *Pilu, Khakan*), Adgaon, VVB-94.

Leaf paste is applied externally in scabies and leucoderma.

61. *Sansevieria zeylanica* (Linn.) Willd. (Dracaenaceae, *Nagtan*), Makarmatpur, VVB-51.

The decoction of root is used as a tonic and expectorant to promote removal of mucous secretion from the bronchial tubes.

62. *Santalum album* Linn. (Santalaceae, *Chadan*), Ghatshendra, VVB-611.

The heart wood is powdered and used externally as an antiseptic. In chronic bronchitis, the extract of the wood is used internally in a dose of 1-2 cups daily.

63. *Semecarpus anacardium* Linn. (Anacardiaceae, *Bibba, Bhilav*), Vaijapur, VVB-295.

Lukewarm leaf paste with common salt is applied over swollen joints.

64. **Setaria italica* (Linn.) P. Beauv. (Poaceae, *Rala*), Akhatwada, VVB-468.

Decoction of whole plant is given internally in the treatment of rheumatism. The decoction of plant is also useful to lower down the pains of parturition.

65. *Solanum surattense* Burn. f. (Solanaceae, *Bhuiringani*), Birola, VVB-589.

The leaves are powdered and applied to open wound. The same is also given internally as an anthelmintic.

66. *Terminalia arjuna* (Roxb.) Wight & Arn. (Combretaceae, *Arjun-sadada*), Chorvaghla, VVB-375.

The bark is allowed to macerate with water and the decoction is taken internally to cure dysentery and abdominal pains. Decoction of the bark is given in painful or difficult urination. Decoction of the bark given internally in bone fracture while the poultice prepared from the pulverized bark with little salt applied externally in the same.

67. *Terminalia bellirica* (Gaertn.) Roxb. (Combretaceae, *Behda*), Kanadgaon (Kannad), VVB-558.

Decoction of fruits is given in piles, dyspepsia (epigastric discomfort), bilious headache and diarrhoea.

68. *Tridax procumbens* Linn. (Asteraceae, *Ek-dandi*), Jawali (Bk.), VVB-160.

Fresh leaves are crushed and a cup of extract is taken once a day for kidney stones. The infusion of the leaves is used for gargles as well as taken internally to bring out the thick phlegm from the bronchial tube.

69. *Typha angustata* Bory et Chaub. (Typhaceae, *Pan Kanis*), Ghatshendra, VVB-61.

The decoction of the rhizome is given in dysuria (painful or difficult urination).

70. **Verbascum chinense* (Linn.) Santapau (Scrophulariaceae, *Kutaki*), Mhaski, VVB- 533.

Infusion of leaves is used internally in the treatment of gout. Local application of lukewarm leaf poultice reduces swelling of joints.

71. *Withania somnifera* (Linn.) Dunal (Solanaceae, *Askand*), Galle Bargaon, VVB-228.

Decoction of root is given internally as well as applied externally in the case of tumours and tuberculosis glands. The root and leaf decoction is used in ulcers, coughs, dropsy and as aphrodisiac.

72. *Ziziphus mauritiana* Lamk. (Rhamnaceae, *Bor, Ber*), Nagapuro, VVB-381.

Infusion of leaves is given orally to control diabetes. Decoction of roots is used as gargle for dental caries. Root powder with sugar is given two tablespoon daily for backache and wound in stomach.

Discussion

This paper reveals utilization of 72 species of flowering plants belonging to 69 genera comprising of 46 families. Of these, 40 families are of dicotyledons class and 6 belong to class monocotyledons. Among the 72 species, 37 species (51.38%) exhibit herbaceous, 16 (22.22%) woody and 19 shrubby (26.38%) nature.

Ethnobotanical information gathered during survey has been verified with available literature in different regions of India on medicinal plants¹²⁻²⁵. It was found that some common medicinal plants like *Ammannia baccifera*, *Ailanthus excelsa*, *Baliospermum montanum*, *Clerodendrum phlomidis*, *Crinum asiaticum*, *Dolichandrone falcata*, *Heteropogon contortus*, *Hymenodictyon obovatum*, *Jatropha curcas*, *Pergularia daemia*, *Polycarpaea corymbosa*, *Salvadora persica*, *Setaria italica*, *Verbascum chinense*, etc. having new uses which are not reported earlier. It provides deeper insight into the indigenous method of application and effectiveness of the plant derivatives in treating different ailments like diarrhoea, dysentery, intestinal worms, piles, fever, malaria, jaundice, diuretic, dyspepsia, diabetes, paralysis, cough, bronchitis, asthma, headache, toothache, wounds and sores, boils, dermatological problems, snake-bite, mental disorders, abortion, dysmenorrhea, scanty lactation, some gynaecological ailments, etc. Authors hope that these botanicals might provide a rich potential for future phytotherapy.

Although root, bark, stem, leaves and whole plant is used but leaf and root are the commonest parts used in the treatment. Many of the preparations are used internally or applied externally in the form of infusion, decoction, paste or powder.

Conclusion

A thorough investigation may provide remedies for different human diseases and also raw material for undertaking further scientific research to confirm the reported uses.

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