Traditional uses of plants by tribals of Amarakantak region, Madhya Pradesh

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The paper reports the traditional medicinal uses of 20 plants belonging to 16 families, for 24 different diseases and use of one plant for medico-religious belief by four different tribes of Amarakantak region of Madhya Pradesh. The paper also has taken into account the perception of the local people about the effectiveness of the plants for specific diseases for which they are prescribed.

Keywords: Tribal Knowledge, Medicinal plants, Amarkantak, Madhya Pradesh, Ethnomedicine.


About 64% of the total global population remains dependent on traditional medicines for their health care system1, whereas about 85% of the rural population of India depends on wild varieties of plants for the treatment of various diseases they suffer from2. The household remedies practiced by the rural communities through trial and error method are not only accurate but also confirm to the Ayurvedic system. The major challenge today is to protect this traditional knowledge as no written document is available and the knowledge has survived only by word of mouth from generation to generation. Due to indiscriminate exploitation, destruction of forests and changing scenario of rural life style, the oral folklore of plants as well as the knowledge is in the process of degeneration. Therefore, it is important to study and document the available information urgently in detail for a wider application in future.

Amarakantak is situated at a height of about 100 m above msl on the Satpura plateau between 22° 41’ N latitude and 81° 46’ E longitude in the Shahdol district of Madhya Pradesh (Fig. 1). The area is the eastern most extremity of Maikal range and is about 104 km away from Shahdol. The area is inhabited by different tribes, out of which Baiga, Gond, Khariya and Panka are the most important groups. Each tribal group has its own

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culture and tradition and uses the forest products not only for their livelihood but also to cure diseases they suffer from. It is to be emphasized here that these groups constituted the nucleus of the present study.

The area experiences a monsoon climate. However due to deforestation, the climate of the area shows a large variation. Temperature of the area varies from 21° to 31° C; June remains the hottest month while December and January remain the coldest months in a year. The mean relative humidity varies from 50 to 85% and the mean annual rainfall for the district is 1300-1900 mm per year.

The economy of the area is based upon forestry and agriculture. The bulk of commodities used domestically for every day use is agricultural and forest products. The area has been categorised as Central Indian sub-tropical hill forest\(^5\) endowed with various wild plants as natural resources. The inhabitants are in constant association with forest for meeting their daily requirements. The area is one of the rich biodiversity centres of the State. Consequent upon the population explosion and increasing human interference, the natural vegetation of the area is under constant pressure. Literature review reveals that very little attention has been paid in the past\(^4,5\) to assess the floristic composition and no ethnobotanical study was undertaken. In the present work, an attempt has been made to explore the traditional means and methods of herbal treatment being practiced by the local tribals and to study the general pharmaceutical practices of the traditional herbal healers (Table 1).
Methodology

Floristic survey of the area was done along with the ethnobotanical studies of the tribes inhabited. Information regarding the medicinal uses of the plants, perception of the local people regarding use of the plants in common diseases, was collected through questionnaire and participatory rural appraisal (PRA) method. While applying PRA method, people were asked questions in groups and each individual was given equal opportunity to speak about his view. Public perception regarding use of plants for common diseases was classified as effective, moderate, less effective, depending on the response of the users to that disease. Later the data were crosschecked with the local herbal healer and a general conclusion was derived. The plants or mode of uses, which are either new to Ayurvedic literature or not reported before, are appended here alphabetically followed by a family name, local name, habit, occurrence and types of uses in the area.

Observations

Plants used singly:

1. *Achyranthes aspera* Linn. (Amaranthaceae), L.N. (Local name): Latjira

   Herbs, flowers in panicles, whitish pale green to red; common in wastelands.

   The whole plant is mixed with 6-7 grains of dried grapes and crushed to about 15-20 gm of powder. One teaspoon of the powder is taken orally twice a day to cure epilepsy.

2. *Alpinia calcarata* Rosc. (Zingiberaceae), L.N.: Kul-anjan

   Slender climbing herbs, leaves linear lanceolate, flowers in terminal panicles, white or yellow; occasionally cultivated.

   Small piece of the root is chewed for half an hour to cure sore throat.

3. *Boerhaavia diffusa* Linn. (Nyctaginaceae), L.N.: Punarnava

   Herbs, flowers in terminal panicles, pink; common on river banks and wastelands.

   About 5 gm of the root powder is taken orally twice a day for 7 days to cure hypotension.

4. *Casearia elliptica* Willd. (Flacourtiaaceae), L.N.: Majuphal

   Small trees with tomentose branches, flowers in clusters, greenish white; scattered in dry deciduous forests.

   Only one seed of the plant is ground to a paste and mixed with 100ml water. The preparation is kept over night and taken orally in empty stomach to cure early stages of peptic ulcer. One seed is chewed for half an hour to cure sore throat and mouth infection.

5. *Centella asiatica* (Linn.) Urban (Apiaceae), L.N.: Brahmi

   Trailing herbs, flowers in umbels; common on moist and shady localities.

   One teaspoon of the plant extract is ground to a paste with 2/3 grains of *Piper nigrum* (kalimirchi/pepper) and taken orally in empty stomach to cure syphilis.


   Evergreen trees, flowers on racemes, yellowish-red; cultivated.

   About 27–30 seed grains of *Couroupita*, 6 gm of *Jatamanshi* (available in the local market) and 10 gm of sugar
candy is mixed and pounded thoroughly. The powder is mixed with 50 ml of milk and 100 gm of ghee to make a paste. The paste is taken orally after menstrual cycle for 7 days. This is given with the belief that it would fulfill the wish to beget a male offspring.

7. **Dioscorea oppositifolia** Linn. (Dioscoreaceae), L.N.: Patjia
   Climbers with tuberous root, flowers on spikelets; common in mixed forests.

   The fruit paste is applied externally on the forehead to cure migraine and severe headache.

8. **Euryale ferox** Salisb. (Nymphaeaceae), L.N.: Tamakhana
   Floating aquatic herbs, leaves prickly, flowers dark violet; occasionally cultivated in the village ponds.

   About 2 gm of seed powder is mixed with one glass of water and kept over night. The preparation is taken in the early morning in empty stomach to cure spermatorrhoea and bed wetting. During the treatment eating of hot drinks, spicy hot foods, and sour things are prohibited.

9. **Evolvulus alsinoides** Linn. (Connvolvulaceae), L.N.: Sankhpuspi
   Spreading herbs, flowers light blue on filiform peduncles; common in moist areas.

   Paste prepared from the whole plant is applied externally to cure scabies, itches and other skin ailments. The paste is also occasionally used as a face bleaching agent. About 10 gm of plant paste is mixed with 100 gm of curd prepared from cow’s milk. The preparation is given orally once a day for one month to cure epilepsy and also as a nervine tonic.

10. **Hedychium coronarium** J. Koenig (Zingiberaceae), L.N.: Gulbakavali
    Tuberous herbs, flowers on terminal spikes, white; common in moist and shady areas.

    About 50 gm of fresh flower is pounded and filtered through a fine cloth to take out 10 ml extract. Two drops of the solution are applied externally to cure conjunctivitis.

11. **Kigelia pinnata** (Jacq.) DC. (Bignoniaceae), L.N.: Balamkhira
    Trees, flowers in lax panicles, red; scattered in village outskirts.

    Half teaspoon of the fruit extract is mixed with half glass of water (ca 50 ml) and taken orally for stomach disorders. Fruits with seed are made into paste and out of this, small tablets of 5 gm each are prepared. Two tablets daily are taken orally twice a day to cure kidney stone and internal piles.

12. **Mesua ferrea** Linn. (Clusiaceae), L.N.: Nag keshar
    Small trees, flowers solitary, white; scattered in the mixed forest.

    About 5 gm of fruit powder is mixed with one tablespoon of curd and made into a paste. The mixture is administered orally twice a day to cure internal and external piles. More doses are taken when the bleeding is heavy. It checks bleeding effectively and alleviates the pain.

13. **Phyllanthus emblica** Linn. (Euphorbiaceae), L.N.: Amla
    Deciduous trees, flowers in axillary clusters, greenish yellow; common in mixed forests.

    Half spoon of fruit powder is mixed with ½ spoon of honey and full glass (100 ml) of un-boiled (fresh) cow milk.
The preparation is taken orally in empty stomach twice a day to cure leucorrhoea. During the treatment period eating of brinjal and tamarind is prohibited.

14. **Plumbago zeylanica** Linn. (Plumbaginaceae), L.N.: Chitrak

Straggling shrubs, flowers in dense spikes, white; common on village outskirts.

About 10 gm of the sun dried root powder is mixed with the boiled water to make a paste. The paste is applied externally (lep) on the affected area to cure leucoderma, leprosy and other skin diseases. Care should be taken to remove the lep after 5-7 minutes, as otherwise there is a chance of external injuries.

15. **Pongamia pinnata** (Linn.) Pierre (Fabaceae), L.N.: Karanja

Trees, flowers on peduncled axillary racemes, white; common in mixed forests.

Seed oil is applied externally in the affected area to cure rheumatic arthritis and skin ailments.

16. **Pueraria tuberosa** (Roxb. ex Willd.) DC. (Fabaceae), L.N.: Bidarikand

Woody climbers, tuberous; flowers on terminal panicles of leafless branches, bluish; common in mixed forests.

About 15 gm of sun dried tender shoot powder is mixed with cow’s milk and taken orally in empty stomach twice a day as aphrodisiac.

17. **Rauvolfia serpentina** (L.) Benth. ex Kurz (Apocynaceae), L.N.: Sarpgandha

Herbs, flowers on corymbose cymes, white or pinkish; rarely found in the mixed and sal forests.

About 10 gm of root powder is taken orally twice a day for 7 days to cure hypertension.

18. **Sterculia villosa** Roxb. ex Smith (Sterculiaceae), L.N.: Uddarkand

Trees, flowers unisexual, yellow with pinkish stripes; scattered on rocky areas.

One teaspoon of root paste is taken orally in empty stomach in early morning as an aphrodisiac. This also cures erectile problem.

**Plants used in combinations:**

1. **Sterculia villosa** Roxb. ex Smith (Sterculiaceae), L.N.: Uddarkand

About 50 gm root of *Sterculia villosa* Roxb., equal quantity of fruits of *Peucedanum nagpurense* Prain (Tej raj), *Peucedanum dhana* Buch.-Ham. ex C. B. Clarke (Bhoj raj), *Glossogyne bidens* (Retz.) Alston (Kam raj), *Cynoglossum lanceolatum* (Bala raj) are mixed thoroughly and ground to a powder. One teaspoon of the powder is taken orally with milk in the day time as an aphrodisiac.

2. **Terminalia chebula** Retz. (Combretaceae), L.N.: Harra

Trees, flowers in terminal panicles, creamy white; common in mixed forests.

Equal quantity of fruits of *Terminalia chebula* Retz., *Terminalia bellirica* Roxb. (Bahera) and *Phyllanthus emblica* Linn. (Amla) is ground to a powder. One teaspoon of the powder is mixed with half teaspoon of honey and taken orally twice a day to cure asthma, bronchitis and other respiratory ailments.

3. **Datura innoxia** Mill. (Solanaceae), L.N.: Dhatura
### Table 1—People’s perception regarding the effectiveness of the medicinal plants used in the traditional therapy

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the plant</th>
<th>Used for the diseases in traditional therapy</th>
<th>Perception of the local tribal (Baiga, Gond, Khariya, Panka)</th>
<th>Perception of the local herbal healer</th>
<th>Observation and remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Achyranthes aspera</td>
<td>Epilepsy</td>
<td>E, M, E, NK</td>
<td>Not known</td>
<td>Plant mainly used for toothache and migraine by herbal healer</td>
</tr>
<tr>
<td>2.</td>
<td>Alpinia calcarata</td>
<td>Sore throat</td>
<td>E, M, E, M</td>
<td>Not known</td>
<td>Leaves used as mouth freshener</td>
</tr>
<tr>
<td>3.</td>
<td>Boerhaavia diffusa</td>
<td>Hypotension</td>
<td>M, E, LE, M</td>
<td>Not known</td>
<td>Root paste used to cure madness by herbal healer</td>
</tr>
<tr>
<td>4.</td>
<td>Casearia elliptica</td>
<td>Peptic ulcer, mouth and throat sore</td>
<td>E, E, E, E</td>
<td>Known</td>
<td>Rarely used by herbal healer</td>
</tr>
<tr>
<td>5.</td>
<td>Centella asiatica</td>
<td>Syphilis</td>
<td>E, E, NK, NK</td>
<td>Not known</td>
<td>Leaves used for cooling effect by herbal healer</td>
</tr>
<tr>
<td>6.</td>
<td>Couroupita guianensis</td>
<td>Medico religious</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Datura innoxia</td>
<td>Rheumatism, arthritis and paralysis</td>
<td>E, E, E, E</td>
<td>Not known</td>
<td>Leaves and seeds are used for asthma by herbal healer</td>
</tr>
<tr>
<td>8.</td>
<td>Dioscorea oppositifolia</td>
<td>Migraine &amp; headache</td>
<td>E, E, M, M</td>
<td>Known</td>
<td>Tubers used as abortifacient</td>
</tr>
<tr>
<td>9.</td>
<td>Euryale ferox</td>
<td>Spermatorrhoea</td>
<td>M, E, M, E</td>
<td>Known</td>
<td>Roasted seeds edible</td>
</tr>
<tr>
<td>10.</td>
<td>Evolvulus alsinoides</td>
<td>Skin ailments and mental tonic</td>
<td>E, E, E, E</td>
<td>Not known</td>
<td>Plant decoction used as mental tonic</td>
</tr>
</tbody>
</table>

*(Contd)*
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the plant</th>
<th>Used for the diseases in traditional therapy</th>
<th>Perception of the local tribal</th>
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<th>Observation and remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Hedychium coronarium</td>
<td>Conjunctivitis</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>12.</td>
<td>Kigelia pinnata</td>
<td>Stomach disorders, Kidney stone and piles</td>
<td>M</td>
<td>NK</td>
<td>E</td>
</tr>
<tr>
<td>13.</td>
<td>Mesua ferrea</td>
<td>Piles</td>
<td>M</td>
<td>NK</td>
<td>E</td>
</tr>
<tr>
<td>14.</td>
<td>Phyllanthus emblica</td>
<td>Leucorrhoea</td>
<td>E</td>
<td>E</td>
<td>M</td>
</tr>
<tr>
<td>15.</td>
<td>Plumbago zeylanica</td>
<td>Leucoderma, leprosy</td>
<td>M</td>
<td>E</td>
<td>M</td>
</tr>
<tr>
<td>16.</td>
<td>Pongamia pinnata</td>
<td>Rheumatic arthritis Skin ailments</td>
<td>M</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NK</td>
<td>M</td>
<td>NK</td>
</tr>
<tr>
<td>17.</td>
<td>Pueraria tuberosa</td>
<td>Aphrodisiac</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>18.</td>
<td>Rauvolfia serpentina</td>
<td>Hypertension</td>
<td>M</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>19.</td>
<td>Sterculia villosa</td>
<td>Aphrodisiac</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>20.</td>
<td>Terminalia chebula</td>
<td>Asthma &amp; Bronchitis</td>
<td>M</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>

Abbreviations: E: Effective; LE: Less effective; M: Moderate; NK: Not known.
Undershubs, flowers axillary, solitary, white; common in wastelands.

About half kilogram of the plant (with leaf, root and fruit), about half kilogram of *Allium sativum* Linn. (Lahesun) and half kilogram of fruits and leaves of *Ricinus communis* Linn. (Rand) are boiled in about 15 liters of *Brassica campestris* Hook. f. & Thoms. (Sarson) oil till it is reduced to half the quantity. Then one liter of kerosene is added to it to make a solution. The preparation is applied externally after cooling on the affected areas and massaged for 2-3 times a day or more for 15 days to cure rheumatic arthritis, paralysis, inflammations and joint pains.

Discussion

The present study describes medicinal uses of 20 taxa for 24 different diseases. The PRA study regarding the perception of local people about effectiveness of plants shows that 5 plants are very effective and used by all the 4 tribes of the area commonly, while 11 plants are used effectively by two tribes only. Use of 12 plants is known to herbal healers, while use of 7 plants is known only to the tribals but unknown to herbal healers (Table 1). It is interesting to know that, the same plant is used for different diseases in traditional therapy and Ayurvedic system. The multiple uses of a species show the inter-relationship between them and the tribals and the need for conservation of this traditional knowledge. Therefore, it is suggested that possible steps be initiated to workout the detailed ethno-botanical study of the area, so that many more interesting facts would come to light.

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References

3. Champion H G & Seth S K, A revised survey of the forest types of India, (Govt. of India Press, New Delhi), 1968, 1-404.