Traditional herbal medicines from Shekhawati region of Rajasthan

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Received 19 April 2004; revised 1 November 2004

Shekhawati region of Rajasthan specially the hilly tracts of Lohargal, Mansadevi, Khetri, Babai, Sakambari, Singhana and Harshnath areas are endowed with rich vegetation and the local people nicely learnt to use the area’s vegetation resources including health care. These people successfully treat many difficult diseases using plant-based medicines. Recent survey for ethnomedicinal plants among the people of these localities recorded the use of 48 species of dicotyledonous and 2 species of monocotyledonous plants. Different types of uses of the recorded plants are presented and discussed in the article.

Keywords: Ethnobotany, Folk Medicine, Medicinal plants, Shekhawati region, Traditional Knowledge, Tribals

IPC Int. Cl.7: A61K35/78, A61P1/06, A61P1/10, A61P7/04, A61P7/12, A61P11/10, A61P11/14, A61P13/02, A61P15/02, A61P15/08, A61P15/10, A61P15/14, A61P17/02, A61P19/02, A61P25/20, A61P33/10, A61P30/02

Traditional medicines especially the folk herbal medicines have recently been receiving heightened interest the world over. Such age-old healthcare systems have been developed in different corners of the world where they were living in close interaction with the nature. Information from ethnic groups on indigenous traditional herbal medicines had always played a vital role in the discovery of novel chemotherapeutic agents from plants.

Modern healthcare in the tribal and rural area of Rajasthan is characterized by the deficiency of infrastructure, qualified personnel and of medicine. Access to and within the region is extremely difficult during certain periods of the year making it difficult to move to a distant place to avail the benefits of modern medicinal treatments. Given these extreme conditions the rural population has recourse almost solely to traditional herbal medicines.

Medicinal uses of different plants have been recorded in numerous literatures standing from the age of Vedas1-3. In Rajasthan also a lot of work has been done on ethnomedicinal plants used for various ailments by different tribal communities4-13. However, no such work has been done in the Shekhawati region of Rajasthan. The present paper records the plants of ethnomedicinal significance occurring in the Shekhawati region of Rajasthan which may be used in future as plant resources for modern system of medicine.

Study Area
Shekhawati region of Rajasthan is spread over the Jhunjhunu and Sikar districts surrounded by Haryana towards the East and the Jaipur, Nagour and Churu districts of Rajasthan on other sides and lies between 28.06° North latitude and 75.20° East longitude (Fig.1). Leaving a few hilly spot like Lohagal, Harshnath, Khetri, Babai, Manasamata and Shakambari, the region is largely semi-arid or arid. Nearly two-third of the region come under Rajasthan Bagar and rest (towards the North-East) under the Aravalli hills.

The traditional healers of Shekhawati region of Rajasthan are having a commendable knowledge of the medicinal values of plants those grow around them. This knowledge of Shekhawati rural people is now fast disappearing due to modernization and the tendency among younger generation to discard their traditional life style. There is an urgent need to study and document this precious knowledge for the posterity of human society. It is also loosing its popularity due to the scarcity or non-availability of such plants, which is caused by multifarious human activities coupled with natural calamities like droughts and over grazing. Thus, conservation and scientific verification of such rare lesser-known medicinal plants assume greater significance.

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Methodology

The traditional knowledge of plant-based remedies rests with the medicine men and they maintain it as closely guarded secret within the family. Generally, they do not keep any written document and pass it to the next generation through practice and discussion. The medicine men collect the plants needed for a particular application either directly from the vegetation or from the local shops. In view of such secretiveness of traditional medicine men and women, it was decided to interview a number of elderly people who have a great deal of practical know how of this subject.

Before actually launching into the field work, a rapport was established with the chief of a community and his guidance was sought to establish contact with the medicine men of the locality. Then, the field sites were visited accompanying the local medicine men. Generally, the herbalists do not want to give all information about a plant. Cross check of collected information from different people has been done to understand the utility of a plant in its totality. Experienced people including elders, healers, medicine men, birth attendants, woodcutters, shepherds and headmen provide important information on useful plants. Also, personal observation was made for verification of the data provided by the informants at different places. And, only the verified and reliable information have been incorporated.

During the ethnomedicinal survey of study area, some interesting herbal medicines have come to light which are not mentioned in ethnomedicinal herbal literature. The collected plants were identified up to species level at the Herbarium of Forest Research Institute, Dehradun. All the collected specimens were deposited in the Herbarium of Laboratory of Ethnobotany and Agrostology, Department of Botany, College of Science, M L Sukhadia University, Udaipur, Rajasthan for authentication of information and further reference. All the recorded plants have been presented in the paper along with their scientific and local names, locality, useful parts, use and mode of administration.

Enumeration

After careful screening 50 species of angiospermic plants have been recognized as important ethnomedicinal plants from the Shekhawati region of Rajasthan. These plants (Fig. 2-8) are enumerated below along with relevant necessary information.
1. *Abrus precatorius* Linn. (Fabaceae)  
Local name: *Chirmi*  
Flowering and fruiting: August to November  
Uses: Small quantity of seed powder is used as abortifacient and sedative. Powder of one seed is given orally to persons suffering from urine obstruction.

2. *Adhatoda zeylanica* Medic. (Acanthaceae)  
Local name: *Ardusa*  
Flowering and fruiting: October to March  
Uses: Leaf extract is given in cough, cold, headache and bodyache.

3. *Aerva lanata* (L.) Juss. ex Schult. (Amaranthaceae)  
Local name: *Kali-Bui*  
Flowering and fruiting: August to March  
Uses: Root extract is given to the patients of liver congestion and jaundice. Decoction of whole plant is given to cure pneumonia and typhoid.

4. *Alhagi maurorum* Medic. (Fabaceae)  
Local name: *Jawasa*  
Flowering and fruiting: April to July  
Uses: Crushed flowers along with sugar are taken orally to cure bleeding piles. Plant decoction is used as diuretic and laxative.

5. *Amaranthus caudatus* L. (Amaranthaceae)  
Local name: *Chaulie*  
Flowering and fruiting: August to September  
Uses: The leaves are cooked as a medicated vegetable to cure constipation and loss of appetite.

6. *Ammannia baccifera* L. (Lythraceae)  
Local name: *Jal Bhangro*  
Flowering and fruiting: August to January  
Uses: Decoction of whole plant is taken twice a day in fever. Paste of leaves and inflorescence is applied over skin to check itching.

7. *Asparagus racemosus* Willd. (Asparagaceae)  
Local name: *Satawari*  
Flowering and fruiting: November to January  
Uses: Root powder is used orally in colic, dysentery, acidity, tuberculosis, seminal weakness, leucorrhoea, burning micturition, anorexia and peptic ulcers. Tubers are boiled in mustard oil till they are completely charred. This oil is consumed in winters by the patients of rheumatoid arthritis.

8. *Asphodelus tenuifolius* Cav. (Liliaceae)  
Local name: *Piazi*  
Flowering and fruiting: December to March  
Uses: Leaf decoction is given in toxemia and kidney stone. Leaf paste is applied on swellings.

9. *Barleria prionitis* Linn. (Acanthaceae)  
Local name: *Bajiradanti*  
Flowering and fruiting: August to November  
Uses: Plant decoction is used in toothache and pyorrhoea. Leaf extract is used to prevent pus formation in the ears.

10. *Bergia suffruticosa* (Del.) Fenzl. (Elatinaceae)  
Local name: *Ankh-Phorni Ki- Bel*  
Flowering and fruiting: October to April  
Uses: Rural people apply the plant paste on broken bones for early recovery. They also rub the plant juice on sores.

11. *Boerhavia procumbens* Banks ex Roxb. (Nyctaginaceae)  
Local name: *Santhi*  
Flowering and fruiting: July to October  
Uses: Root decoction is used as an eye tonic. Root paste is applied on swellings and also on scorpion sting.

12. *Calligonum polygonoides* Linn. (Polygonaceae)  
Local name: *Phog*  
Flowering and fruiting: March to June  
Uses: Plant extract is used in typhoid. Plant decoction is given to the animals in urinary problems.

13. *Cassia tora* Linn. (Caesalpinaceae)  
Local name: *Phunwad*  
Flowering and fruiting: August to November  
Uses: Leaf decoction is given to the children having fever while teething. Poultice of leaves is tied on boils, gut, sciatica and area of joint pain.

14. *Chenopodium album* Linn. (Chenopodiaceae)  
Local name: *Chilva*  
Flowering and fruiting: December to May  
Uses: Leaves cooked as vegetable is given in urinary troubles and colic. Leaf extract is administered orally for treating piles, cough and worms.

15. *Citrullus colocynthis* (L.) Schard. (Cucurbitaceae)  
Local name: *Gar-tumba*  
Flowering and fruiting: August to November  
Uses: Fruits are cut into two pieces and dried in sun. Dried fruit powder mixed with salt is administered orally for treating constipation. Roasted fruits are given to the animals to correct the digestive disorders.
16 *Cleome gynandra* Linn. (Cleomaceae)  
Local name: *Karalia*  
Flowering and fruiting: July to December  
Uses: Green leaves are tied on the area affected by skin diseases. Leaf extract is used to cure earache.

17 *Cleome viscosa* Linn. (Cleomaceae)  
Local name: *Singali*  
Flowering and fruiting: July to October  
Uses: Seed powder is taken orally to cure bleeding piles.

18 *Cocculus hirsutus* (L.) Diels (Menispermaceae)  
Local name: *Bajar-bel*  
Flowering and fruiting: Throughout the year  
Uses: Root powder along with milk or honey is given for 20-30 days in chronic rheumatism and venereal disease. Leaves decoction mixed with sugar is taken in the morning for a week to cure leucorrhoea.

19 *Cocculus pendulus* (Forst.) Diels (Menispermaceae)  
Local name: *Pilwani*  
Flowering and fruiting: October to December  
Uses: Leaf and root extract is used in skin disease.

20 *Corbichonia decumbens* (Forssk.) Jacq. ex Exell (Molluginaceae)  
Local name: *Pathar-chatti*  
Flowering and fruiting: August to October  
Uses: Crushed leaves are taken orally in kidney stone problems. The plant is used as a tonic and also used in gonorrhoea.

21 *Dicoma tomentosa* Cass. (Asteraceae)  
Local name: *Choloharna-charo*  
Flowering and fruiting: September to December  
Uses: Roots and branches are used as a tooth bush to cure acute pyorrhoea. Plant decoction is given orally in febrile attacks to the ladies after delivery.

22 *Euphorbia hirta* Linn. (Euphorbiaceae)  
Local name: *Dudhi*  
Flowering and fruiting: August to April  
Uses: Latex is used in warts and skin diseases (leucodermal spots). Root paste mixed with honey is given to nursing mothers for initiation or to increase lactation. Leaf decoction is given in asthma, cough, bronchitis, eczema, colic and spermatorrhoea.

23 *Euphorbia merifolia* Linn. (Euphorbiaceae)  
Local name: *Danda-thor*  
Flowering and fruiting: February to March  
Uses: Luke warm latex and common salt is taken with water for curing whooping coughs, dropsy, colic, jaundice, enlargement of liver, asthma and leprosy.

24 *Glinus lotoides* Linn. (Molluginaceae)  
Local name: *Gandhi-buti*  
Flowering and fruiting: February to April  
Uses: *Gujars* of hilly tract of Shekhawati region administer fresh plant juice orally to the children to cure weakness and indigestion. Plant paste is applied on the boils and wounds for early healing.

25 *Impatiens balsamina* Linn. (Balsaminaceae)  
Local name: *Timadia*  
Flowering and fruiting: August to November  
Uses: Leaf extract is applied on boils, wound and swelling.

26 *Lawsonia inermis* Linn. (Lythraceae)  
Local name: *Mehdi*  
Flowering and fruiting: March to June  
Uses: Leaf extract mixed with sugar is given in jaundice. Seeds are used in the treatment of fever and burning micturition.

27 *Leucas urticaefolia* (Vahl) R. Br. (Lamiaceae)  
Local name: *Darkan*  
Flowering and fruiting: July to September and February to March  
Uses: Infusion of flowers is given in cold and cough. Leaf decoction is used to cure fever. Roasted leaves are bandaged on swelling part.

28 *Martynia annua* Linn. (Martyniaceae)  
Local name: *Bichhu kanto*  
Flowering and fruiting: August to September  
Uses: Leaf paste is applied on swelling, boils and for treating rheumatism.

29 *Mimosa hamata* Willd. (Mimosaceae)  
Local name: *Alai*  
Flowering and fruiting: December to March  
Uses: 5 gm seed powder boiled in buffalo milk is given as a tonic in general weakness and also sexual weakness in males. Fresh leaf extract is applied to check bleeding from the wound and ulcer.

30 *Mollugo cerviana* (L.) Seringe (Molluginaceae)  
Local name: *Chirio ghas*  
Flowering and fruiting: August to October  
Uses: The plant is cooked as vegetable and given to the ladies after childbirth to clean the uterus.

31 *Mucuna pruriens* (L.) DC (Fabaceae)  
Local name: *Kirmich*  
Flowering and fruiting: September to January
Uses: Seed powder is mixed with honey and given orally to cure asthma. Root decoction is given orally in disease of nervous system such as facial paralysis.

32 *Ocimum americanum* L. (Lamiaceae)
Local name: *Bapchi*
Flowering and fruiting: October to January
Uses: Seed powder is used in treatment of skin disease as leucoderma and leprosy. The seeds are soaked in buttermilk and taken orally to cool the body.

33 *Pedalium murex* Linn. (Pedaliaceae)
Local name: *Dakhni-gokhru*
Flowering and fruiting: August to December
Uses: Whole plant extract is used as a tonic for health and vigour. Decoction of fruits is used for continuance of urine and other complaints of urinary system. *Laddus* (a type of sweetmeat) prepared from the seeds are given to patients suffering from joint pain & lumbago and also given for better health.

34 *Physalis minima* Linn. (Solanaceae)
Local name: *Chirpotan*
Flowering and fruiting: August to October
Uses: Ripe fruits are given in dropsy, constipation and enlargement of the spleen. Fruits are also used in colic complaints.

35 *Polygonum plebeium* R. Br. (Polygonaceae)
Local name: *Lalbuti*
Flowering and fruiting: October to March
Uses: Plant decoction is given in colic complaints. Plant ash with oil is applied on eczema.

36 *Portulaca oleracea* L. (Portulacaceae)
Local name: *Lunkia*
Flowering and fruiting: February to April and September to October
Uses: The plant is refrigerant and effective in scurvy and liver diseases. The *Meena* tribe rubs the plant sap on the body during scorching heat of summers for relief in blisters and boils.

37 *Sarcostemma viminale* (L.) R. Br. (Asclepiadaceae)
Local name: *Khir-khimp*
Flowering and fruiting: August to November
Uses: Plant extract is given in digestive disorders. Plant paste is applied on fractured bone.

38 *Sida ovata* Forssk. (Malvaceae)
Local name: *Kharanti*
Flowering and fruiting: October to January; rarely March to April

Uses: Elderly persons suffering from lumbago eat powdered seeds mixed with jaggery in winter.

39 *Solanum surattense* Burm. f. (Solanaceae)
Local name: *Pasarghatali*
Flowering and fruiting: November to March
Uses: Fresh leaf extract is applied on ringworm and other skin diseases. Powder of ripe fruits is given orally in piles. Fresh leaf extract is poured into the ear to remove the insect.

40 *Sonchus asper* (L.) Hill (Asteraceae)
Local name: *Kalijibi*
Flowering and fruiting: August to October
Uses: Plant extract is applied externally on old wounds, boils and swellings. Paste of plant is applied on breasts to increase lactation.

41 *Sonchus oleraceus* L. (Asteraceae)
Local name: *Ankhali*
Flowering and fruiting: September to October
Uses: Plant extract mixed with sugar is taken orally to cure liver disease, particularly enlarged liver and cirrhosis.

42 *Sphaeranthus indicus* L. (Asteraceae)
Local name: *Mundi*
Flowering and fruiting: January to March
Uses: Shade dried plant at flowering stage is powdered and taken orally with *Deshi ghee* and honey for 38 days to develop sexual power. Root powder mixed in hot *Sesamum indicum* (*Til*) oil is massaged on the male sex organ for perfect erection.

43 *Tecomella undulata* (Sm.) Seem. (Bignoniaceae)
Local name: *Rohida*
Flowering and fruiting: January to May
Uses: Root powder mixed with sugar is given to ladies in Leucorrhoea. Bark paste is applied to cure eczema and eruptions.

44 *Tephrosia purpurea* (L.) Pers. (Fabaceae)
Local name: *Dhamaso*
Flowering and fruiting: August to December
Uses: Plant decoction is used as anthelmintic for children, as blood purifier and cure *Dhamasia* (cough with black phlegm), a common disease in rural areas. Root powder along with black pepper is taken orally to cure dyspepsia, enlarged liver, impotency and snakebite.

45 *TriantHEMA triquetra* Rottl. (Aizoaceae)
Local name: *Lutanki*
Flowering and fruiting: July to December
Uses: Plant paste is applied on swelling caused due to rheumatism.
46 *Vitex negundo* L. (Verbenaceae)
Local name: *Sambhalu*
Flowering and fruiting: August to March
Uses: One-teaspoon root powder along with milk is given daily to ladies suffering from menstrual disorders and to restore fertility. Roasted seeds powdered, mixed with wheat flour in 1:10 ratio and made into *Laddoos* are given to ladies once a day before childbirth for easy delivery.

47 *Waltheria americana* L. (Sterculiaceae)
Local name: *Surli*
Flowering and fruiting: August to October
Uses: Root extract is as an effective medicine for leucorrhoea and spermatorrhoea.

48 *Withania somnifera* (L.) Dunal. (Solanaceae)
Local name: *Padalsi*
Flowering and fruiting: Throughout the year
Uses: Root decoction is mixed with milk and given orally to cure sterility in men. Decoction of powdered root is given to the ladies in leucorrhoea and frequent miscarriage. Root paste mixed with cow urine is used in skin diseases.

49 *Xanthium indicum* Koen. ex Roxb. (Asteraceae)
Local name: *Bichhu-butti*
Flowering and fruiting: October to December
Uses: Fruit oil is applied on eczema and scabies. Seed powder mixed with lemon juice and water is given orally to start urination.

50 *Zaleya govindia* (Buch. Ham. ex G. Don) Nair (Aizoaceae)
Local name: *Gudalio-Satto, Santhi*
Flowering and fruiting: July to November
Uses: Fresh root decoction is taken orally by men against syphilis and swellings of sex organs. Ladies take root extract to regularize menstruation.

Results and Discussion

In the present report, emphasis was laid only on less known medicinal uses of plants with different mode of application. Of many plants were recorded only 50 plant species have been selected. Proper scientific evaluation of these plants might lead to the discovery of some interesting and fruitful information.

Out of the reported 50 species of ethnomedicinal plants, 14 species have the property of curing skin diseases and related ailments followed by 12 plants for sexual diseases and related problems. Other plants of ethnomedicinal importance occurring in the Shekhawati region have the property for curing wide range of diseases and disorders related to respiratory system, digestive system, diabetes, liver ailments, urinary troubles, animal bites, parasite related problems, rheumatism, diseases of eye, ear and teeth etc. (Table 1). Some plants are of common use for different kind of ailments. The survey indicates that the flora of Shekhawati region is rich in medicinal plants and covers a wide spectrum of human ailments. The area is an important area of plant wealth for healthcare in Rajasthan.

There are many areas in the Shekhawati region, which have many commercially exploitable medicinal plant species and if managed properly those can be a sustainable source of income for the local people. However, uncontrolled, illegal and over exploitation of commercially important species like *Asparagus racemosus* Willd, *Adhatoda zeylanica* Medic., *Citrullus colocynthis* (L.) Schard., *Pedalium murex* Linn., *Sida ovata* Forssk., *Solanum surattense* Burm. f., *Withania somnifera* (L.) Dunal, etc. have been reported by the inhabitants.

During the survey occurrence of some rare plants like *Calligonum polygonoides*, Linn. *Sarcostemma viminalis* (L.) R. Br., *Tecomella undulata* (Sm.) Seem. etc. at a few spots was also recorded. However, the local people reported their wide occurrence in the area at several locations quite some times ago. The existence of these species is now under threat due to over exploitation. Immediate steps are to be taken for their conservation and sustainable utilization.

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<td>Cardiovascular and circulatory diseases</td>
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<td>ENT problems and dental care</td>
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Acknowledgement

The authors are thankful to the DST New Delhi, for providing financial assistance and to the authorities of Forest Research Institute Dehradun, for extending permission to consult the herbarium for plant identification.

References