

Additions to the traditional folk herbal medicines from Shekhawati region of Rajasthan

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During the exhaustive ethnomedicinal survey of the Shekhawati region of Rajasthan, information on 40 more traditional herbs have been collected. Mode of administration, plant part(s) used and dosages given is also noted. The source of information is based on the personal interviews with local physicians practicing Indigenous System of Medicine, shepherds, *Sadhus* or holy men and experienced, aged tribesmen and women. Out of 40 herbs, 12 have the property of curing gastrointestinal related ailments, whereas 11 have the property of curing respiratory tract infection and related ailments.

Key words: Ethnomedicine, Indigenous knowledge, Medicinal plants, Rajasthan, Shekhawati region, *Meena*, *Sansi*, *Nut*, *Gadulia lohar* and *Gurjar* tribes

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Modern healthcare system in the tribal and rural area of Rajasthan lack sufficient infrastructure of qualified personnel and of medicine. Owing to roads and seasonal extremities certain areas are inaccessible in monsoon. Under the circumstances the rural population has to rely solely upon traditional herbal medicines. The traditional healers of Rajasthan are having a commendable knowledge of the medicinal virtues of plants that grow around them. The traditional knowledge is fast being depleted due to modernization and the diminishing interest of younger generation. There is an urgent need to document this precious knowledge for posterity. The traditional uses of herbal remedies has further declined due to scarcity caused by human activity, natural calamities like droughts and overgrazing by domestic animals, threatening the plant diversity. Therefore, the conservation and avowal of rare and lesser-known medicinal plants assume greater significance.

In Rajasthan, much work on ethnomedicinal aspects of plants has been reported¹⁻¹¹. However, data on Shekhawati region of Rajasthan has been lacking. The paper presents an addition of 40 plant species occurring in the Shekhawati region of Rajasthan. The

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 on other sides. Leaving a few hilly spots like Lohagal, Harshnath, Khetri, Babai, Mansamata and Shakambarimata, the region is largely semiarid or arid (Fig. 1). Nearly two-third of the region come under Rajasthan Bagar and rest (towards the North East) under Aravalli hills.

Methodology

Before launching into the fieldwork, rapport was established with one or two persons preferably the chief, whose guidance was sought and contacts were then established with other tribesmen. The linguistic fluency, personality and social standing are crucial for establishing rapport. Study sites were visited with the local medicine men. Individuals were selected at random or by finding out knowledgeable individuals from the village or contacting the *Bhopa* (village priest) or the headman. Generally, the interviews were taken, of individuals or of groups. In-group interviews, more than one individual were approached. In smaller groups, the number of male members remained higher, whereas in larger groups

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female members were also in good number and both contributed well.

To determine the authenticity of information collected during fieldwork, repeated verification of data from different informants and at different time was carried out. Thus, only the specific and reliable information after cross checking has been incorporated. The information about the ethnomedicinal properties of plants are given by mentioning their botanical name, local name(s), locality, part/s used and mode of administration. Samples of recorded herbs, shrubs and trees were identified with the help of local floras and previous works¹²⁻¹⁶. The collected herbs 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, ML Sukhadia University, Udaipur for authentication of information and further reference.

Results & discussion

The present ethnomedicinal survey has identified 40 plant species belonging to 33 families, used for preparing 72 medical remedies (Table 1). Herbs were the primary source of medicine in terms of the number of species (57.5 % of total species) followed by shrubs (Table 2). This is perhaps because they are abundant and are easily available. It is believed that the more abundant a plant is, the more medicinal virtues it may possess¹⁷. The ease with which they can be collected, stored and transported, and the ease with which bioactive compounds can be extracted are also factors that contribute to the preference of herbs.

The plant parts used for medical preparations were bark, flowers, leaves, roots, stems, fruits and seeds. In some cases, the whole plant including roots was utilized. The most frequently utilized plant parts were whole plant including roots (17 medicinal remedies) followed by the leaves (11) & roots (9).

Gastrointestinal problems, skin diseases, sexual ailments and respiratory tract infection were the most frequent ailments treated with the medicinal plants (Figs. 2-4). Most of the species were found having more than a single therapeutic use. The largest number of remedies (30.0%) were used to treat gastrointestinal ailments (constipation, diarrhoea/dysentery, gastric, indigestion, stomachache), 27.5% were used for respiratory tract infection (asthma,

bronchitis, cough/cold, headache, pneumonia), 20.0% remedies were used for sexual ailments and 17.5% remedies were used for skin diseases and to a lesser extent for ENT, dental and ophthalmological ailments, skeltomuscular problems, fever, antidote, nervous system, and urinary ailments. Most of the people interviewed were familiar with the species dealing with common ailments like cough, cold, digestive problems, fever, headache and skin diseases. In tribal communities, knowledge of medicinal herbs was learned from the elders and community member who share knowledge about mode of collection and administration of medicinal plants. However, the knowledge of medicinal plants for complex problems associated with pregnancy, cardiovascular diseases, cancerous diseases and urinary infection were confined only to few families or people, some of which serve as local healers and medicine men. This kind of curative information was kept with some sanctity and secrecy, with the belief that the medicines would lose their potency if revealed to other people.

The information recorded about medicinal utility of the plants was compared with the information gathered by earlier published ethnobotanical surveys. The study indicated that 20 out of 72 remedies are new. Notable among these remedies are: *Gynostegium* of *Calotropis procera* flower (Asclepiadaceae) is taken by the patients of diabetes and respiratory diseases, root decoction of *Clerodendrum phlomoidis* (Verbenaceae) is taken in obesity, plant powder of *Corchorus depressus* (Tiliaceae) is taken with fresh milk of goat to increase the sexual power by men, extract of *Dactyloctenium indicum* (Poaceae) is taken in rheumatism and decoction of fresh plant of *Fagonia cretica* (Zygophyllaceae) is taken by rural ladies for inducing abortion.

Local people had adequate knowledge to distinguish the chemical effectiveness, and thus constituents of plant parts. Plant parts of some species have toxic effects if consumed by humans or domestic animals in significant amounts. A thorough study of these plants with reference to their lesser-known uses would certainly provide some fruitful information. The uses of certain plants are again interesting due to their manifold properties. The observations emanating from the present survey can be substantiated through reverse pharmacological studies.

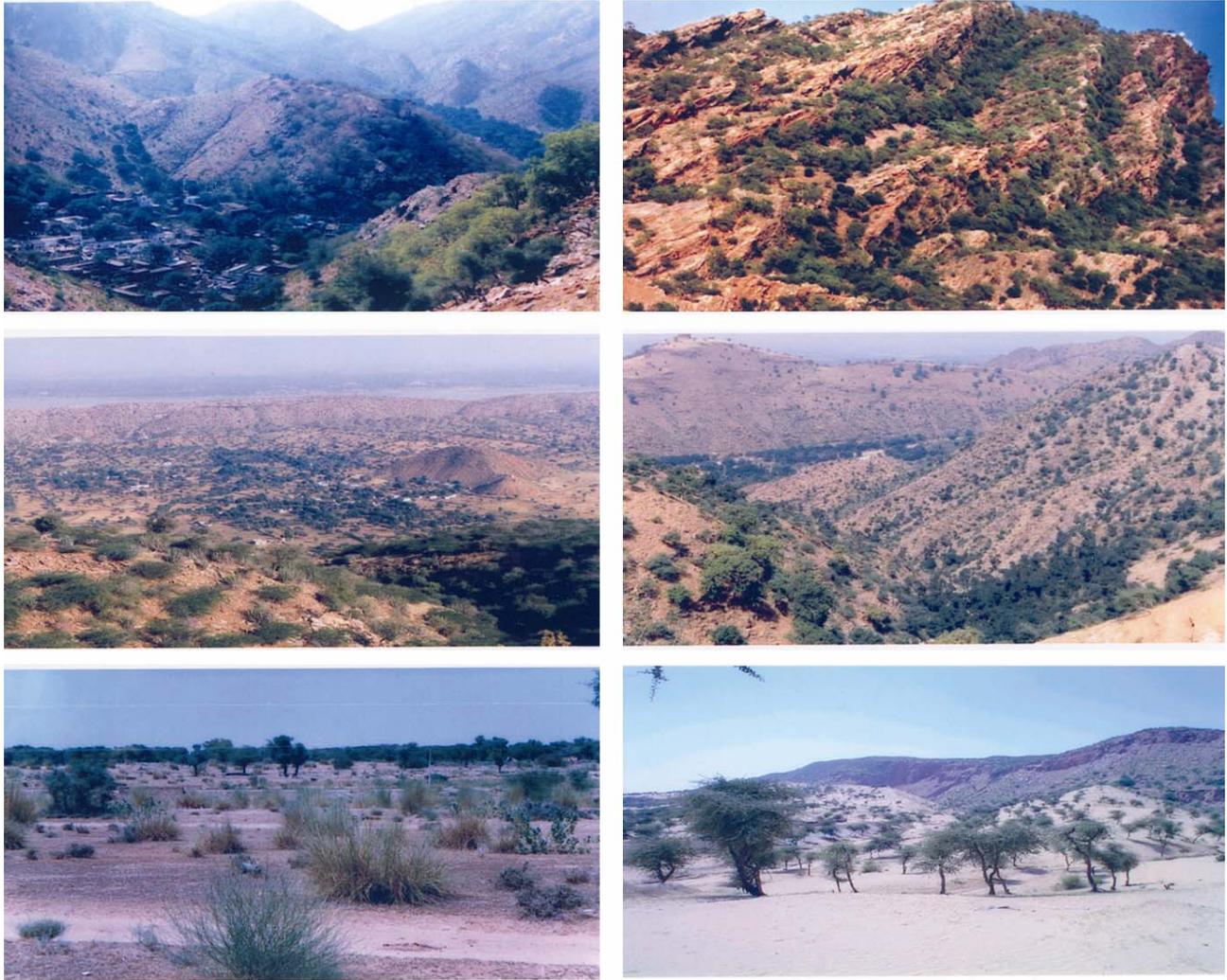


Fig. 1 Different views of the Study area



Fig. 2 *Tamarix diocia*



Fig. 3 *Elytraria acaulis*

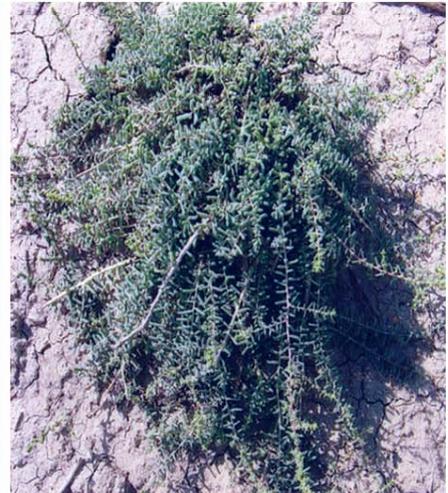


Fig. 4 *Haloxylon salicornicum*

Table 1—Traditional herbal medicines used in Shekhawati region

Plant name	Local name	Locality	Plant parts	Uses
<i>Achyranthes aspera</i> <i>Linn. (Amaranthaceae)</i>	Modokanto	Inderpura	Root, Leaf	Roots decoction is given in typhoid. Leaf decoction of <i>Achyranthes aspera</i> & <i>Adhatoda zeylanica</i> and powdered turmeric is given in pneumonia. Dry plant ash mixed with honey is taken in cough, asthma, urine complaints and stomachache.
<i>Actinopteris radiata</i> Link (Actiniopteridaceae)	Mayur pangio	Lohagal	Whole plant	Plant paste is applied over forehead in migraine. Whole plant decoction is given daily for 7 days in asthma and bronchitis.
<i>Adiantum lunulatum</i> <i>burm. f. (Adiantaceae)</i>	Hansraj	Lohagal.	Leaf	Fresh leaf decoction is given to cure irregular menstrual cycle. Plant paste is given to women to help them to conceive.
<i>Ailanthus excelsa Roxb.</i> (Simaroubaceae)	Arru, ardu	Chirana	Leaf	Leaf decoction is given to the patients of arthritis.
<i>Aristolochia bracteolata</i> <i>Retz. (Aristolochiaceae)</i>	Kadhu	Bhorki	Whole plant	Plant decoction is used as vermifuge (for children). Rural ladies take plant decoction orally against menstrual problems.
<i>Calotropis procera</i> (Ait.) R. Br. (Asclepiadaceae)	Akdo	Manpura	Flower	Flower gynostegium is consumed in diabetes. Flower gynostegium is also useful in TB and other respiratory diseases.
<i>Cassia auriculata L.</i> (Caesalpinaceae)	Anwal	Khetri	Flower, Leaf	<i>Meena</i> and <i>Gurjar</i> tribes take fresh flowers orally to cure diabetes and urinary disorders and leaves as anthelmintic to the children.
<i>Celosia argentic L.</i> (Amaranthaceae)	Surli	Bagar	Leaf, Whole plant	Leaf decoction is used as diuretic and given in abdominal colic. Plant decoction is given in renal calculus, gonorrhoea and cystitis.
<i>Ceropegia bulbosa</i> <i>Roxb. (Asclepiadaceae)</i>	Khadulo	Udaipurwati	Tuber	Rural ladies of Shekhawati region eat raw tubers to promote fertility and vitality. Tubers are also effective in urinary problems.
<i>Cissampelos pareira L.</i> (Menispermaceae)	Kalipar	Jhunjhunu	Roots	Root decoction is used against snakebite, rabid dog bite and pneumonia. Roots are diuretic, lithotriptic and febrifugal.
<i>Clerodendrum phlomidis L.f.</i> (Verbenaceae)	Arni	Gillon ki dhani	Roots, Leaf	Root decoction is used as demulcent in gonorrhoea and in obesity. Fresh leaves are tied over the eyes in ophthalmia.
<i>Commiphora wightii</i> (Arn.) Bhandari (Burseraceae)	Gugal	Laxman garh	Gum	Fumes of resinous gum are inhaled to cure fever, bronchitis, nasal catarrh, laryngitis and phthisis. Resinous gum is dissolved in luke warm water and is used for gargling against pyorrhoea, tonsillitis and pharyngitis.
<i>Corchorus depressus</i> (L.) C. Chr. (Tiliaceae)	Chamkas	Piprali	Whole plant	Plants dried in shade and powdered are taken regularly by men with fresh goat milk as a tonic to increase sexual power. Fresh plant decoction is given to cure dysentery, dyspepsia and liver disorder. <i>Sansi</i> and <i>Nut</i> tribes take seeds decoction with goat milk and jaggery during acute diarrhoea.
<i>Corchorus antichorus</i> <i>Roensch. (Tiliaceae)</i>	Kagler	Sithal	Seed	Seeds are used as highly purgative. Plant decoction is taken orally as a general health tonic and to cure gonorrhoea.
<i>Crotalaria burhia Buch.</i> - Ham. (Fabaceae)	Kharsana or zhunda	Nawalgarh	Roots	Root decoction of <i>Crotalaria burhia</i> , <i>Mollugo cerviana</i> (locally known as <i>Chiri Bazra</i>), <i>Zinziber officinalis</i> and <i>Trachyspermum ammi</i> is given in typhoid. Root extract with sugar is given to cure kidney pain.

Table 1—Traditional herbal medicines used in Shekhawati region—Contd.

Plant name	Local name	Locality	Plant parts	Uses
<i>Cyperus rotundus</i> L. (<i>Cyperaceae</i>)	Moth	Balaran	Tuber	Dried tubers are used in stomach complaints. Crushed tubers are given with milk in intestinal worm and colic complaints.
<i>Dactyloctenium scindicum</i> (Boiss.) (<i>Poaceae</i>)	Makro	Ranoli	Whole plant	Plant extract is taken orally in rheumatism.
<i>Dendrocalamus strictus</i> Nees (<i>Poaceae</i>)	Bans	Lohagal	Culms	Inner portion of the culms (<i>vanshlochan</i>) is given to patients suffering from TB.
<i>Desmostachya bipinnata</i> Stapf (<i>Poaceae</i>)	Dabb	Posana	Whole plant	Plant paste is given to cure dysentery. Plant decoction is useful in asthma and jaundice.
<i>Diplocylos palmatus</i> (L.) Jeffrey (<i>Cucurbitaceae</i>)	Shivling	Ajitsagar dam	Seed	Ash of upper rounded portion of 10 peacock feathers is divided into 5 parts. In each part, 5 seeds of <i>Diplocylos palmatus</i> and jaggery are mixed, and bolus each of 20 gm is prepared. One bolus with cow milk daily early morning is given for 5 days to get male child.
<i>Fagonia cretica</i> L. (<i>Zygophyllaceae</i>)	Dhamaso	Sikar	Whole plant	Plant decoction is given to induce abortion. <i>Gujar</i> tribe take decoction to cure dropsy, cough, asthma, smallpox and as antidote.
<i>Gisekia pharmacoides</i> L. (<i>Molluginaceae</i>)	Sureli	Ponkh	Whole plant	Plant extract is given empty stomach to the children to kill <i>Ascaris</i> (Round worms).
<i>Haloxylon salicornicum</i> Bunge (<i>Chenopodiaceae</i>)	Loona	Taal chapter	Whole plant	Plant is used as supplement of salt in Sujangarh area of Shekhawati region. People of Sujangarh use this plant as an important constituent of <i>Papad</i> to develop taste and prepare <i>Papad khar</i> .
<i>Helicteres isora</i> L. (<i>Sterculiaceae</i>)	Marod-phali	Lohagal	Fruit	Dry fruit powder is taken with water twice or thrice a day for 3–4 days to cure stomach pain, diarrhoea and dysentery.
<i>Kickxia ramosissima</i> (Wall.) Janchen (<i>Scrophulariaceae</i>)	Pathar chatti'	Lohagal	Whole plant	Plant paste is taken orally with water to remove kidney stone. Leaf extract is applied on pimples and acne.
<i>Lepidium sativium</i> L. (<i>Brassicaceae</i>)	Aalio	Laxmangarh	Seed	Seeds are galactagogue and used in poultice to cure wounds and sprains. Filtrate of crushed seeds soaked in water for an hour is given in hiccup. Seeds are given with milk to increase lactation.
<i>Leptadenia pyrotechnica</i> (Forssk.) Decne. (<i>Asclepiadaceae</i>)	Khimp	Khudana	Whole plant	Plant sap is applied on eczema and other skin diseases and is also given in diabetes.
<i>Oxalis corniculata</i> L. (<i>Oxalidaceae</i>)	Khati-buti	Lohagal	Whole plant, Leaf	Plant sap is used to cure scurvy and other skin diseases. Leaves are used as a coolant and refrigerant in stomach disorders, fever and acute headache.
<i>Pennisetum americanum</i> (L.) K Schum. (<i>Poaceae</i>)	Bajra	Bagar	Root	Rootstock decoction is given in typhoid.
<i>Piper longum</i> L. (<i>Piperaceae</i>)	Pipramul	Lohagal	Roots	Decoction made from mixture of <i>Piper longum</i> , <i>Piper nigrum</i> and <i>Eugenia caryophyllata</i> is given in cold, cough and fever. Roots of <i>Piper longum</i> are given to facilitate easy childbirth.
<i>Plumbago zeylanica</i> L. (<i>Plumbaginaceae</i>)	Chitrak	Shakambari Mata	Root	Root powder mixed with <i>Deshi ghee</i> (clarified butter) is given orally to cure piles and chronic constipation. Root decoction is given in dropsy, sprue, indigestion, piles, leucoderma and rheumatism.

Table 1—Traditional herbal medicines used in Shekhawati region—*Contd.*

Plant name	Local name	Locality	Plant parts	Uses
<i>Rhus hookeri</i> Sahni & Bahadur Heyne (<i>Anacardiaceae</i>)	Dansria	Lohagal	Fruit	Ripe fruits are edible. Consumption of fruits increases lactation. Fruits improve digestion and cure diarrhoea.
<i>Erianthus munja</i> Jesw. (<i>Poaceae</i>)	Kuncha	Balaran	Leaf	Decoction of about 100 gm fresh leaves is administered orally for 3 days to cure dysmenorrhoea and induce abortion.
<i>Salvadora persica</i> L. (<i>Salvadoraceae</i>)	Jal	Lalpur	Fruit, Seed, Root bark	Fruits are employed in calculi, constipation, indigestion and stomatitis. Seed oil is applied in rheumatic pain. <i>Gadulia lohar</i> tribe takes root bark decoction orally to cure fever.
<i>Spermocoe stricta</i> L. f. (<i>Rubiaceae</i>)	Agio	Tapkes war	Whole plant	Plant paste is applied on wounds. Plant decoction is taken in bodyache and headache.
<i>Tamarix dioica</i> Roxb. (<i>Tamaricaceae</i>)	Jhau	Mansa Mata	Bark	Bark powder paste made in vegetable oil is applied on eczema. Bark is considered as aphrodisiac.
<i>Tribulus terrestris</i> L. (<i>Zygophyllaceae</i>)	Gokharoo	Nawal garh	Fruit	Fruit powdered with <i>Sesamum indicum</i> (til) seeds are taken orally with water by the rural men to cure impotency. Fruit powder is given orally to cure urinary disorders and mixed with sugar is given for easy delivery.
<i>Tridax procumbens</i> L. (<i>Asteraceae</i>)	Lardiolapsi	Hameri	Leaf	Leaf extract is applied locally against boils and blisters and taken to cure dysentery and diarrhoea. Leaf infusion is poured into the ear to cure earache and pus formation.
<i>Elytraria acaulis</i> Lindau (<i>Acanthaceae</i>)	Kala gathia, galobi	Shakambarimata	Root	Half-teaspoon root extract is given to children once a day for 2 days in asthma. Root extract is also beneficial in migraine.

Table 2—Medicinal plants arranged by life form

Life form	Total species	Percentage
Herbs	23	57.5 %
Trees	03	7.5 %
Shrubs	12	30.0 %
Climbers	02	5.0 %

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