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Exploration of some important medicinal plants of Pali district (Rajasthan)

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Abstract

In this study, an ethno medicinal exploration of the plant was carried out in the different remote areas of selected tehsil i.e. Rohat and Marwar Junction in Pali district, Rajasthan. The study was mainly emphasized on traditional uses of the 43 plants of study area which are used for the treatment of various diseases and health problems. Tribal and rural cultures well versed about ethno- medicinal information and uses of these medicinal plants for treatment of different diseases, wounds, fractures and other ailments. In the present study, 43 plant species listed that were used by the rural and tribal people for their various diagnostic uses. Medicinal values of these plants are largely collected and based on folk practitioners through the exhaustive interviews with tribal, rural and literate community of the villages of various age groups like village headman, spiritual leader, teacher, physicians, social worker, postal authorities and Ayurvedic doctors etc. The study provides information that either the whole plant or different parts like leaves, stem, bark, roots, etc. directly or in different traditional formulations are used.

Keywords: ethno medicinal, traditional, tribal, Pali, Rajasthan

Introduction

Traditional 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 medicines had always played a vital role in the discovery of novel chemotherapeutic agents from plants [1]. It is believed that about 15-17 million species are present on the earth and 70% of them occur in tropical and sub-tropical parts of the world [2]. In India, utilization of plants for medicinal purposes has been documented in ancient literature but an actual study in this direction was initiated in 1956. Ethno-biology came in focus when the earliest man observed the animals mostly apes and monkeys eating certain plants and found heal his wounds and get rid from pain and suffering. In India, more than 43% of the total flowering plants are to be of medicinal importance and approx 70 percent inhabitants still rely on herbs [3]. An analysis of such observations provoked them to use of plants for maintenance of life and alleviation of diseases [4]. It was also realized that till now only 5 per cent of the herbal wealth was studied whereas the rest remained unexplored [5]. World Health Organization has estimated 80% people rely on traditional medicines for primary health care in the world [6]. The demand for medicinal plants is increasing in both developing and developed countries for safe, effective and inexpensive indigenous remedies gaining popularity among the people especially in India and China. The tribal knowledge regarding the use of plant species for various purposes depend on the surrounding plants [7] and Plants or other living organisms have great potential to treat human diseases [8]. Thus, time demand an integrated and pluralistic approach towards health care to cope effectively with his situation [9]. The wild plant in Indian Folklore has been and is used to meet the various needs of the tribal's and poor people. Establishment of herbal forms in well selected localities will exercise scientific control over the cultivation of medicinal herbs [10]. In every ethnic group there exists a traditional health care system popular among community [11]. Information from ethnic groups or indigenous traditional medicine has played a vital role in the discovery of novel products from plants as chemotherapeutic agents [12]. The great potential of under usage of plants used by these societies especially in mankind's problem like hunger and health has been fully realized by the results of studies carried out so far. The conservation and protection of medicinal plants against over exploitation by domestic and foreign commercial interest without benefits accruing to the nation are clearly our priorities [13].

Medicinal uses of different plants have been recorded in numerous literatures standing from the age of Vedas [14-16]. In Pali district of Rajasthan, different plant species are the major source of folk medicinal uses for new therapeutic agent.

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Vast knowledge on medicinal plants exists as oral among the folklore and primitive societies of India, where a large number of potent medicinal plants are found growing wild. Although, a great amount of ethno botanical research work has been undertaken in various pockets of tribal and rural population scattered throughout the country but still much is to be discovered. However, no such work has been done in the Pali district of Rajasthan, India. The present paper records the plants of ethno medicinal significance occurring in the Pali district of Rajasthan India which may be used in future as plant resources for modern system of medicine.

Methodology

Study area

Rajasthan has a large population of about 5, 64, 73, 122 crore. Around 80 percent live in villages which utilize local medicine. The state of Rajasthan is situated between 23 degree 3' and 30 degree 12' N latitude and 69 degree 30' and 78 degree 17' E longitude. The total land area of the state is about 3,24,239 km², out of which about 1,98,100 km² is arid and the rest semi arid. Rajasthan divided into 33 states out of which Pali district was selected purposively for the study.

The shape of the Pali district resembles to an irregular triangle and has undulated plains with scattered hills. The Aravalli range runs along the eastern side of the district from south west to north-west. The highest peak in the district is 1,099meter. The climate of the district is, on the whole, dry and is very hot in summer and cold in winter. Normal annual rainfall in the district is about 47 centimeters. It is Located at Latitude-25.7, Longitude-73.3. Pali District is sharing border with Ajmer District to the East, Jalore District to the west, Jodhpur District to the North, Rajsamand District to the South. Pali District occupies an area of approximately 12387 square kilometers. It's in the 345 meters to 183 meters elevation range. This District belongs to Hindi Belt India.

The proposed study was based on personal interview with tribal and people of various age groups residing in rural areas of randomly selected Rohat and Marwar Junction tehsil of the district Pali of Rajasthan based on field and literary research. From each tehsil two villages were selected randomly namely Kharda and Artiya villages from Rohat tehsil and Dhamli and Chelawas villages from Marwar Junction tehsil. Before actually started the work, interview schedule was developed for getting maximum and diversified data about ethno medicinal plants and their uses.

Cross check of collected information from different people has done to understand the utility of a plant in its totality. During the survey or visits of these localities, daily activities were closely observed, interpersonal contacts established by participating in several social and religious ceremonies and data collected through questionnaire in local language (Marwari/ Rajasthani). The method of collecting information about the plants were based on personal interview with tribal, rural and literate community of the villages of various age groups like village headman, spiritual leader, teacher, physicians, social worker, postal authorities and ayurvedic doctors etc. who could give correct information about the use of plant, their mode of use and collaboration to knowhow the plants collected. These ethno-medicinal data were collected by enquiry, observation, interview and participation.

Result and Discussion

Ethno-medicine enlightens numerous known or unknown uses of plants which have potential of wider usage and prove that everything in nature has some sort of power and spirit or its properties. So, it has relevant to conservation of genetic resources that helps to search new sources of drugs, food, fodder and other life supporting species found in nature. The survey indicates that Pali district of Rajasthan is rich in medicinal plants and covers a wide spectrum of human ailments. The plants are valued for herbal drugs, utilization for food, fodder, gums and resins, essential oil, dye, fatty oil, condiments, spices, etc. The biodiversity data, fact sheets published globally emphasized that human authority, they invoked godly interventions in the form of rites, rituals and folk tales and lore to create a fear psychosis. The ethnic group (tribal people) around the world have developed their own culture, customs, religious rites, taboos, totems, legends and myths, folklores and songs, food and medicinal practices. Numerous wild and cultivated plants play a very important and vital role among these cultures and this interrelationship has evolved over generations of experience and practices. Now there is enough scope of amalgamation of these drugs in the mainstream of prenatal medicinal systems today after the tribal drugs are subjected to the photochemical and biological screening together with clinical trials.

In the present study, 43 species of ethno-medicinal plants were recorded belonging to 25 families used by the rural people of Pali district, Rajasthan for various ailments. These medicinal plants were used as simple drugs or remedies for normal and acute problems are used in the form of juice, powder, decoction or paste. The mixture of different plant parts were also used for preparing medicines. Rural people were using these to cure diseases like fever, cold & cough, skin diseases, dysentery, pain, diarrhea, wounds, snake bite, insect bite, asthma, burn and other various disorders (Table 1).

The rapid degradation of forest has resulted in depletion of natural resources. So conservation of these plants should be viewed seriously and urgent need to embark on large scale cultivation of these plants through high socio-economic value and creation of herbal gardens in Rajasthan and also in other part of India. The issue of medicinal plants conservation has been focused in the last 15 years and various conservation methods (*in situ*, botanical gardens, germplasm banks, etc. and *ex situ*) were mentioned by many researchers^[17]. Keeping in view the above observations the ethno medicine important plants of Pali district were identified through a wide survey under the present investigation. There are urgent need conserve these medicinal and economical important plants because the area has important plant wealth for healthcare in Rajasthan.

The government should take sincere action to protect the forest and its wealth and need for developing a code of practices for growing, harvesting, collecting, handling; packaging, storing and exporting these ethno-plant materials because many of them are at the verge of extinction due to over-exploitation.

Table 1: Medicinal plants used by the rural and tribal community of Pali district of Rajasthan

Botanical Name	Family	Local Name	Part/parts used	Folk uses
<i>Acacia nilotica</i> (L.) Willd. Ex. <i>Delile</i>	Fabaceae/ Mimosaceae	<i>Kikar</i>	Flowers, Stem bark, Twigs.	Yellow flowers after grinding with water are applied in case of Eczema. 50gram powder is taken with water twice a day to cure hepatitis. 10 gram of bark powder with water is used in case of leucorrhoea. Bark powder is applied externally in case of ulcer. Young twig is used as toothbrush and helps in cleaning and strengthening the teeth.
<i>Acacia senegal</i>	Mimosaceae	<i>Kumath</i>	Latex	Gum used for burn, other inflamed area. Sometimes gum is taken orally in cases of inflammation of intestinal mucosa.
<i>Achyranthus aspera</i>	Amaranthaceae	<i>Lajira</i>	Whole plant	Whole plant used as diuretic and astringent.
<i>Aegle marmelos</i> (L) <i>corr.serr</i>	Rutaceae	<i>Belgiri, Bel patal</i>	Fruit	Ripe fruit is used for curing chronic dysentery, habitual constipation and dyspepsia which are widely known to tribal communities.
<i>Aerva tomentosa</i> Forsk.	Amaranthaceae	<i>Bui</i>	Seeds	Wooly seeds stuffed in pillows relieve headache and protective against rheumatism. Decoction of flowers and seeds applied externally against swelling.
<i>Aloe vera</i> Mill.	Liliaceae	<i>Gwarpatha</i>	Leaves, Stem.	The juice of leaves is useful in case of diabetes and liver disorders. Juice of leaves and stem is applied to the pain- full inflammatory disorders of body.
<i>Amaranthus spinosus</i>	Amaranthaceae	<i>Chaulai</i>	Leaves, Root	Leaves, roots are used as Laxative and abortifacient.
<i>Argemone mexicana</i> L.	Papaveraceae	<i>Satyanashi</i>	Latex, Root, Seed.	Seeds are poured in Mahua oil and are applied to eczema and incase of itching. Roots are brunt to provide heat in the treatment of piles. The smoke of burning seeds is useful in case of headache. Latex of this plant is used in case of rheumatism. Seed powder is used as antidote to snake. Powder of seed is also used in case of asthma headache and other stomach complaints.
<i>Asparagus racemosus</i> . Willd.	Liliaceae	<i>Sataver</i>	Roots, Tuber	Roots up on grinding if applied over bald area cures baldness. If root paste is applied on the sores, whole of the pus is dried out. Decoction of tuber with Neem is given twice a day to the patients of diabetes for one month to check sugar level. Paste of 5gram of fresh tuber is given orally with water twice a day for three to increase the lactation in nursing women.
<i>Azadirachta indica</i>	Meliaceae	<i>Neem</i>	Twigs, Leaves	Twigs, leaves used for boils, abscesses, adenitis, eczema, ulcers. It is considered as a divine tree and great gift of nature and as an 'all cure' for human problems.
<i>Boerhaavia diffusa</i>	Nyctaginaceae	<i>Satha</i>	Leaves, Root	The leaves are consumed as vegetable in cases of kidney stones. The root paste is taken orally to cure jaundice.
<i>Calotropis gigantean</i> (L.) W. Aiton.	Asclepiadaceae	<i>Safed aak</i>	Flower, Leaves	Powdered flowers are used in case of digestive problems and used to treat Baadi (a type of gastric problem). Roasted leaves are applied in case of rheumatism.
<i>Calotropis procera</i> (Aiton.) R.Br.	Asclepiadaceae	<i>Ankara</i>	Flower, Latex	Flower ash is used to increase the vision and treatment of eye infection. Its flower is used in all stone medicines. Latex of this plant is used in case of tuberculosis. Latex is also used in case of fish poison.
<i>Capparis decidua</i> (Forsk.) Edgew.	Capparaceae	<i>Ker, Kair</i>	Stem, Root	Stem grinded and its paste is applied to cure tumors. Stem paste is used in case of pyorrhea and rheumatism. Paste of coal from wood is applied externally to muscular injuries. Powdered root bark is taken with hot water to cure asthma and cough.
<i>Cassia fistula</i> Linn.	Caesalpiniaceae	<i>Amaltas</i>	Fruit (pods), Stem	6 gram seed if boiled and taken cure stomachache and stomach tumors. Decoction of either 100 gram pods or stem bark is given to the animals as purgative. It is also used for the treatment of constipation and as an anthelmintic.
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	<i>Doob, Dub ghas</i>	Inflorescence, Fruits	Leaf juice is used in case of increased bleeding in ladies. This juice is administered by nose. Leaf juice can also be used to stop bleeding when there is fibrosis in the uterus. About 100 gram of juice of plant is taken daily to control the blood pressure. An infusion of roots is used for stopping bleeding in case of piles. Half cup extract or whole plant material is taken orally by tribal in dysuria.
<i>Cyperus rotundus</i> Linn.	Cyperaceae	<i>Nagar motha</i>	Bulb, Root, Rhizome.	Dried bulb powder is useful in case of dysentery jaundice and urinary complaints. Root paste is useful in case of wounds and snake bite. Root paste is also useful in case of jaundice an bowel complaints. Juice of rhizome is given orally with water orally in case of irregular menstruation.
<i>Dalbergia sissoo</i> Roxb.	Fabaceae	<i>Shisham/ Tahli</i>	Leaves, Bark	Leaf juice is used in urine inflammation. Paste of about 250 gram of leaves twice in a day for 3days to cure diarrhea in case of animals. Decoction of leaves and dried powder of bark is used in bleeding piles
<i>Datura stramonium</i>	Solanaceae	<i>Dhatura</i>	Whole plant	Whole plant used for asthma and in ophthalmology. Tribal smoke the seeds and leaves directly to cure asthma.
<i>Echinops echinatus</i> Roxb.	Asteraceae	<i>Oont kantila</i>	Root	Root extract is given with luke warm water in whooping cough. Fresh root is kept at the back of heat touching the scalped or kept in the naval before parturition times or during delivery pain for delivery.
<i>Eclipta alba</i>	Asteraceae	<i>Bhringraj</i>	Whole plant	Whole plant used as hair tonic, to cure enlarges liver and spleen and skin diseases.
<i>Eucalyptus camaldulensis</i> Dehnm.	Myrtaceae	<i>Safeda</i>	Leaf	Oil extracted from the leaves can be gargled for sore throat.
<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	<i>Dudhli</i>	Root	Root powder is useful in case of diarrhea, bleeding and cramps in stomach. Latex applied cures nerve bleeding, nerve inactiveness. Paste of whole plant material when applied over sores and boils cure the affected area.
<i>Evolvulus alsinoides</i>	Convolvulaceae	<i>Shankhpushpi</i>	Whole plant	Whole plant used as febrifuge, enhance memory and cure asthma.
<i>Ficus benghalensis</i> Linn.	Moraceae	<i>Bargad/ Bad</i>	Roots, Stem Bark, Latex.	Its aerial roots are used to increase memory. The tips of adventitious roots are crushed and boiled in the cow milk and the decoctions. Thus obtained is strained and served hot in piles. The bark with pepper is used in snake bite. Latex is also used in case of rheumatism.

<i>Ficus religiosa</i>	Moraceae	<i>Peepal</i>	Leaves, Fruit, Bark, Seed	Leaves, fruits, bark and seeds used to prevent conception forever and inflammatory ulcers.
<i>Jatropha curcas</i>	Euphorbiaceae	<i>Ratanjot</i>	Leaves, Seed	Leaves used for dysentery and colic pain also used for promote lactation. The seed oil and seeds used as a purgative by the tribal.
<i>Lawsonia inermis</i> Linn.	Lythraceae	<i>Mehandi</i>	Seeds, Leaves	Seed is used in case of piles Paste of leaves is applied over the skin to cure burns. The leaf juice along with sugar is administered in case of spermatorrhoea. Paste of leaves with alum apply on sore of thumbs and incase of pimples.
<i>Leptadenia pyrotechnica</i> (Forsk.) Decne.	Asclepiadaceae	<i>Khimp</i>	Stem, Leaves	The brushed stem and leaves are used to promote the healing of wounds. Decoction is prepared by adding stem pieces along with seeds of Ajawain (<i>Trachyspermum ammi</i>) and til oil is administered for expulsion of placenta. Stem is boiled and given orally to sheep to maintain the smooth movement of joints.
<i>Nerium indicum</i> Mill.	Apocynaceae	<i>Kaner</i>	Roots	The roots are made into paste with water and are applied externally in case of ulcer and leprosy. A paste of roots is applied externally in case of piles. The paste of its leaves and root bark is used in case of skin diseases. Root is used for procuring the abortion obtained by both local application and internal administration.
<i>Opuntia ficus indica</i> (L.) Mill.	Cactaceae	<i>Nagphani</i>	Fruit, Leaves	Fruit baked or made in to syrup are a good remedy in case of asthma and whooping cough. The leaves made into pulp are used as a poultice to apply in case of heat, inflammation and ulcers.
<i>Physalis minima</i> L.	Solanaceae	<i>Chirmoti/ Chiropattan</i>	Fruits	Ripe fruits are given in dropsy, constipation and enlargement of spleen. Fruits are also used in colic complaints.
<i>Phyllanthus emblica</i>	Euphorbiaceae	<i>Amla</i>		The fruits are soaked in honey and taken orally to cure leucorrhoea.
<i>Prosopis cineraria</i> (L.) Duce.	Mimosaceae	<i>Khejari</i>	Flowers, Inflorescenc, Bark.	Flowers are pounded, mixed with sugars and eaten by women during pregnancy as safeguard against miscarriage. The grounded inflorescence mixed with sugar in water is used for prevention of boils and skin diseases. The dried bark and its paste is useful to cure pain of rheumatism.
<i>Ricinus communis</i> Linn.	Euphorbiaceae	<i>Arand</i>	Latex, Seed	Latex of this plant is used as laxative Seed oil (Castor oil) is used in case of Rheumatism and joint pain.
<i>Salvadora persica</i> Linn.	Salvodaraceae	<i>Peelu, Mithjal</i>	Bark, Leaves, Root	Its bark ash (Bashma) is used as tooth powder Leaf juice is used as purgative. The leaves heated and tied up in the thin cotton cloth once applied in case of rheumatism. Juice of leaves is used in case of Scurvy. Paste of leaves in water is applied on the skin to treat irritation. Decoction of root is useful in case of fever.
<i>Solanum nigrum</i> Linn.	Solanaceae	<i>Makoi</i>	Root, Fruit	Root with small amount of sugar is boiled in water and are given to women to enhancing fertility. Fruits are useful in fever, diarrhea and eye diseases.
<i>Tecomella undulata</i> (Sm.) Seem.	Bignoniaceae	<i>Rohira</i>	Bark, Stem, Root.	Paste of stem bark is used for 5-days as remedy for Syphilis. Decoction of stem pieces is mixed with sugar is given to ladies in leucorrhoea. Bark paste is applied to cure Eczema and eruption. The powder of root bark with sugar or honey and milk is taken by women to cure leucorrhoea. Root paste with mustard is applied on the blisters. The bark powder is used in case of diabetes.
<i>Tinospora cordifolia</i> (Willd.) Miers. ex. Hook F. & Thorns.	Menispermeacea	<i>Giloy</i>	Stem	Stem juice is valuable in high fever and given in jaundice either alone or mixed with honey. Juice of stem orally with honey in asthma. Paste of stem with five seeds <i>Piper nigrum</i> . is used to treat leucorrhoea
<i>Tribulus terrestris</i> L.	Zygophyllaceae	<i>Gokhru/ Bhakadi</i>	Fruit	The powdered in doses of 18 gram with sugar and black piper is useful in case of gleet, spermodirrhoe and impotence.
<i>Tridax procumbens</i>	Asteraceae	<i>Khal muriya</i>	Leaf	The leaf juice used as dropped locally on wounds and cuts to stop bleeding.
<i>Withania somnifera</i> Dunal.	Solanaceae	<i>Aswagandha</i>	Root, Leaves	Root decoction is mixed with milk and given orally to cure sterility in men. Decoction of powdered root is given to ladies in Leucorrhoea and frequent miscarriage. Root paste mixed with cow urine is used skin diseases. Crushed leaves are useful for curing abscesses.
<i>Ziziphus nummularia</i> Burm. F.	Rhamnaceae	<i>Ber, Bordi.</i>		Juice of root bark is applied in case of Rheumatism. The decoction of root is given in case of fever. Root paste is applied to old wound and ulcers. The powder of stem and bark is used in diarrhea. Ash of bark mixed in ghee is applied in cases of inflammation.

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References

- Katewa SS, Galav PK, Indian journal of traditional knowledge. 2005; 4(3):237-245.
- Krishnankutty N, Chandrasekaran S. Biodiversity hotspots: defining the indefinable? Current Science. 2007; 92(10):1344-1345.
- Singh G. Bioresources of medicinal and aromatic plants of India, their conservation and related issues. Kurukshetra. 1997; 56:9-13.
- Sinha S. Ethnobotanical and Biodiversity Studies of Plants Used in Traditional Medicines in Jaipur (Rajasthan), PhD Thesis, University of Rajasthan, Jaipur, 1999.
- Arya S, Arya PK, Singh M. Bioprospecting of threatened medicinal plant biodiversity of Nawalgarh region with ethno-ecological analysis, In: National Seminar on Conservation and Utilization of Natural Resources and Their Role in Sustainable Development, Jhunjhunu, 2008, 67.
- Fransworth N. The role of ethno pharmacology in drug development, In: Bioactive Compounds from Plants, edited by D.J. Chadwick & J. Marsh (John Willey & Sons, New York), 1990, 2-21.
- Reddy KN, Trimurthulu G, Reddy CS. Medicinal plants used by ethnic people of Medak district, Andhra Pradesh, Indian Journal Traditional Knowledge. 2010; 9(1):184-190.

8. Subbu RR, Prabha AC. Medicinal plant diversity of Virudh nagar District, Tamil Nadu, Current Biotica. 2009; 3(3):373-385.
9. Sen A, Batra A. Economically important plant system: *Melia azedarach* L. and its bio technological approaches, In: National Seminar on Biotechnology in Sustainable Agriculture and Environment Management, Jaipur, 2008, 84.
10. Kritikar KR, Basu BD. Indian Medicinal Plants, Vol. II-IV. International Book Distributors, Dehradun, 1987.
11. Rai R. Some traditional medicinal plants used for cold, cough and fever by tribal of Bastar (Chhattisgarh), Journal Indian Botanical Society. 2007; 86(1-2):27-36.
12. Katewa SS. Indegenous people and Forests: Perspectives of an Ethnobotanical study from Rajasthan (India)-Herbal Drugs: Ethnomedicine to Modern Medicine (Springer, Berlin), 2009, 33-56.
13. Natesh S, Ram HYM. An update of green medicine, Journal of the Indian Botanical Society, 1999, 78:13-23.
14. Kirtikar KR, Basu BD, Indian medicinal plants, (Allahabad, India), 1984, I-IV.
15. Chopra RN, Nayar SL, Chopra IC. Glossary of medicinal plants of India, (Publications and Information Directorate, CSIR, New Delhi), 1956.
16. Jain SK. Dictionary of Indian folk medicine and Ethnobotany, (Deep publication, New Delhi), 1991.
17. Jain SK, Defillips. Medicinal Plants of India, Reference Publication, Alogonal, Michigan, USA, 1991.