

SOME UNREPORTED MEDICINAL USES OF PLANTS FROM THE TRIBAL AREA OF SOUTHERN RAJASTHAN

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A B S T R A C T

Hitherto unreported folk medicinal uses of 41 species of plants belonging to 29 families used by the tribals of Southern Rajasthan have been dealt in this paper. Some plants with important ethnomedicinal new uses are *Aegle marmelos*, *Leucas aspera* and *Pongamia pinnata* in migraine; *Acacia leucophloea* as contraceptive; *Borassus flabelifer*, *Grewia orientalis* and *Ziziphus xylopyra* in developing complete sterility in female while *Cocculus villosus* in male; *Citrus medica* in kidney stone; *Crinum asiaticum* in breast cancer; *Cryptolepis buchmanii* in piles; *Gardenia turgida* and *Luffa acutangula* as antidote in animal bite; *Ichnocarpus frutescens* in swollen gums; *Lannea coromandelica* in earache; *Nyctanthes arbor-tristis* in obesity; *Euphorbia acaulis*, *Grewia damine*, *Xeromphis spinosa* in skin diseases and *Clitoria ternatea* in colic. The plant part used and mode of administration is also given.

INTRODUCTION

The art of herbal healing has very deep root in Indian culture and folklore. Even today in most of the rural areas, people are depending on local traditional healing system for their primary health care. The tribals of remote areas of Southern Rajasthan are totally dependent on herbs for their health care as it is difficult for them to get modern medical facilities for their day-to-day health problems since the government dispensaries are far away from their abodes.

Rajasthan is the largest State of India located in the North Western part of India. Geographically it lies between 23° 3' to 30° 12' longitude and 69° 30' to 78° 17' latitude. The tribal dominated Southern part of Rajasthan harbours vast diversity of vegetation. It includes subtropical evergreen forest of *Boswellia serrata*, *Diospyros melanoxylon*, *Dendrocalamus strictus*, *Bombax ceiba*, *Madhuca indica*, *Tectona grandis*, *Anogeissus latifolia* and *Balanites aegyptiaca*. These forests are inhabited by the major tribes of the State viz. Bhil, Meena, Garasia, Damor and Kathodia. The surrounding plants for these people form an integral part of their culture and the information about plants get passed on from generation to generation only through oral folklore although many times kept secret.

Ethnobotanical studies on tribal dominated Southern part of Rajasthan have been carried out by Sebastain and Bhandari (1984, 1988), Joshi (1995), Singh and Pandey (1980, 1998), Katewa and Arora (1997), Katewa and Guria (1997), Katewa and Sharma (1998) and Katewa & *al.* (2001,2003).

A perusal of literature reveals that though lot of ethnomedicinal work has been done in Southern part of Rajasthan, still some ethnomedicinal gap exists in this region as reported in the present paper.

METHODOLOGY

The traditional knowledge of plant based remedies for the treatment of ailments rests with the medicine-men, all of which belong to one family of hereditary indigenous practitioners. Skills and experience are passed on from one generation to the next by word of mouth, and are guarded like secrets. The medicine-men collect the plant needed for a particular application, either directly from the forest or from the local shops. In view of 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 when it comes to the plants used as medicines in the native system.

Before actually launching into the fieldwork, rapport was established with one or two persons preferably the chief, guidance sought and contact was then established with other tribals of the locality. The linguistic fluency, personality and social standing are crucial to establishing rapport between the participants involved. Field sites were visited with the local medicine-men. Generally, the herbalists do not want to give all the information about a plant. For this reason selection of informants is an important aspect of ethnobotanical study in the field. Experienced people, such as some elders, healers, medicine-men, birth-attendant, woodcutter, shepherds, headmen and Bhopa can provide important information on useful plants. A discussion about a particular herb with different informants from different places tends to be more helpful to record various queries about the herbal drug. Also, personal observation is helpful for verification of the data provided by the informants at different places.

To determine the authenticity of information collected during fieldwork, repeated verification of data from different informants and in different times was done. Thus, only the specific and reliable information cross-checked with at least 13 informants has been incorporated in the present study.

During the ethnomedicinal survey some interesting herbal medicines have come to light, which are not mentioned in important ethnomedicinal herbal literature. The collected herbs were identified up to species level at the Herbarium of Forest Research Institute, Dehradun (India). 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 (India) for authentication of information and further reference. Numbers of voucher specimens are also provided. The information about the ethnomedicinal properties of plants are given by mentioning their Botanical name, local name, period of flowering and fruiting, habit, parts used and the mode of their administration.

ENUMERATION

Acacia leucophloea (Roxb.) Willd. (MIMOSACEAE)

*EA 47

Ln.: Khar, Safed-Kikar, Rijua

Habit: Tree

Fl. & Fr.: August-February

Ethnomedicinal Uses: Decoction of one teaspoon bark powder is taken daily as contraceptive, half an hour before intercourse.

Aegle marmelos (L.) Corr. (RUTACEAE)

EA 63

Ln.: Bel

Habit: Deciduous tree

Fl. & Fr. : January-July

Ethnomedicinal Uses: (1) Decoction of apical stem bud is made with jaggery and taken in sexual debility by both men and women for 7 days.

(2) Bark extract of this plant is massaged on forehead, twice a day for 3 days in migraine. The bark is collected for this purpose early in the morning before sunrise.

(3) Juice of fruits is mixed with of *Cannabis sativa* leaves extract and is given to boost up immune system and to cure general debility. It acts as analgesic and sedative too.

Borassus flabelifer L. (ARECACEAE)

EA 312

Ln.: Tad

Habit: Tree

Ethnomedicinal Uses: Decoctions of two inches root powder is given to women to develop complete sterility and it acts as contraceptive.

Bridelia rettisa (L.) Spreng. (EUPHORBIACEAE)

EA 200

Ln.: Lapano

Habit: Trees

Fl. & Fr.: July December

Ethnomedicinal Uses: Powder of bark of *Bauhinia racemosa* and *Bridelia retusa* is mixed and given to women to develop sterility and it acts as contraceptive.

Cassia auriculata L. (CAESALPINIACEAE)

EA 125

Ln.: Anwal, Tarwan

Habit: Bushy shrub

Fl. & Fr.: August-November

Ethnomedicinal Uses: Two teaspoon decoction made from bark of *Cassia auriculata*, bulblets of *Allium sativum*, powder of rhizomes of *Curcuma tonga*, *Syzygium aromaticum* and Jaggery is given twice a day for 6-7 days to cure asthma, bronchitis, cold and cough.

Cissus repanda Vahl (VITACEAE)

EA 367

Ln.: Pani-vala, Sanadudi

Habit: A small herb

Fl. & Fr.: September-December

Ethnomedicinal Uses: Root extract is given to animals orally to prevent abortion and also as

antidysentric.

Citrus medica L. (RUTACEAE)

EA 208

Ln.: Limbu

Habit: Shrub

Fl. & Fr.: Throughout the year

Ethnomedicinal Uses: A molluscan shell is put in the fruit juice of lemon and kept it over night. This mixture is taken early in the morning by the patient suffering from asthma as well as kidney stone.

Clitoria ternatea L. (FABACEAE)

EA 335

Ln.: Vardia

Habit: Twining herb

Fl. & Fr.: Most part of the year

Ethnomedicinal Uses: Tribals crush 1/4th part of seed with water and given to child in colic.

Cocculus hirsutus (L.) Diels (MENISPERMACEAE)

EA 127

Ln.: Tikri-Bel

Habit: Climber

Fl. & Fr.: September-April

Ethnomedicinal Uses: (1) Extract of whole plant is taken early in the morning for 5 days in asthma and bronchitis.

(2) Vegetable of leaves is eaten by the tribals in gastric complaints. Root decoction is used in urinary tract inflammation.

Cocculus villosus (Lam.) DC. (MENISPERMACEAE)

EA 209

Ln.: Khangrao

Habit: Climber

Fl. & Fr.: September-April

Ethnomedicinal Uses: The leaves are put in water for 24 hrs. and taken orally to develop sterility in men.

Corchorus depressus (L.) Stocks (TILIACEAE)

EA 299

Ln.: Baphuli

Habit: Prostrate, perennial herbs

Fl. & Fr.: August March

Ethnomedicinal Uses: Powder of whole plant is taken daily with fresh goat milk for a month as a tonic to gain sexual vitality in male.

Crateva magna (Lour.) DC. (CAPPARACEAE)

EA 303

Ln.: Vaivana

Habit: Deciduous trees

Fl. & Fr.: February-June

Ethnomedicinal Uses: Twig of stem is put inside the vagina for abortion, which occur within 2-3 hours.

Crinum asiaticum L. (AMARYLLIDACEAE)

EA 322

Ln.: Jahari Kanda

Habit: A bulbous herb

Fl. & Fr.: August-November

Ethnomedicinal Uses: Poultice of crushed bulb is tied locally on breast cancer, carbuncles, tumour and warts for early cure.

Cryptolepis buchananii Roem. & Schult. (PERIPLOCACEAE)

EA 220

Ln.: Tikari-Bel, Karnala-Ki-Bel *Habit:* Twining shrubs *Fl. & Fr.:* May-August

Ethnomedicinal Uses: 20 gm leaf powder is taken early in the morning for 4-5 days in piles.

Datura metal L. (SOLANACEAE)

EA 179

Ln.: Dhatura, Kala -Dhatura *Habit:* Shrub *Fl. & Fr.:* September-December

Ethnomedicinal Uses: 20 ml wine prepared from whole plant is mixed with 10 ml water and taken twice a day, 1 hour after taking meal to cure asthma. It acts as bronchiodilator.

Dendrophthoe falcata (L.f.) Etting (LORANTHACEAE)

EA 327

Ln.: Salar-Bel *Habit:* An epiphytic *Fl. & Fr.:* August- February

Ethnomedicinal Uses: Leaf extract is taken by the tribals orally in gastritis.

Ehretia laevis Roxb. (EHRETIACEAE)

EA 223

Ln.: Tamboliya, Luni, Tambol *Habit:* Deciduous tree *Fl. & Fr.:* March-May

Ethnomedicinal Uses: The bark of various plants (*Ehretia laevis*, *Butea monosperma*, *Terminalia bellirica*, *Mangifera indica*, *Lannea coromandelica* and *Ziziphus rugosa*) are mixed together in equal amount. The decoction prepared from this mixture is given to children in dysentery and diarrhoea, twice a day for one day.

Enicostema verticillatum (L.) Engl. (GENTIANACEAE)

EA 187

Ln.: Naame, Nahli, Kadava *Habit:* Annual herb *Fl. & Fr.:* August-December

Ethnomedicinal Uses: Extract of whole plant is given orally in dysuria.

Euphorbia acaulis (Roxb.) Buch. -Ham. (EUPHORBIACEAE)

EA 330

Ln.: Jangli Palak *Habit:* Annual herb *Fl. & Fr.:* September- November

Ethnomedicinal Uses: Latex of tuber 'is applied on tumours and boils only for 10-15 minutes then washed gently with water for fast recovery.

Gardenia turgida Roxb. (RUBIACEAE)

EA 328

Ln.: Padairi, Padatatu *Habit:* Small deciduous tree *Fl. & Fr.:* April-June

Ethnomedicinal Uses: One cup of root bark extract is taken orally as antidote in snake bite and the paste of root bark is also applied externally.

Grewia damine Gaertn. (TILIACEAE)

EA 228

Ln.: Gangestri *Habit:* Shrub *Fl. & Fr.:* January- October

Ethnomedicinal Uses: Poultice of roots and leaves is applied locally to cure leucoderma.

Grewia orientalis L. (TILIACEAE)

EA 241

Ln.: Gengchi

Habit: Shrub

Fl. & Fr.: August- November

Ethnomedicinal Uses: Half teaspoon root powder is taken orally with water for 7 days (after completion of menses period) to develop sterility in women.

Holarrhena antidysenterica Wall. (APOCYNACEAE)

EA 137

Ln.: Kadi, Kodaya, Hadadiyo

Habit: Shrub

Fl. & Fr.: May-September

Ethnomedicinal Uses: Two teaspoon decoction of mixture of bark of *Holarrhena antidysenterica*, leaves of *Ampelocissus latifolia*, whole aerial part of *Lucas aspera*, pods of *Cassia fistula* and bulb lets of *Allium sativum* are given orally twice a day for 5-7 days in bronchitis, hiccough, asthma, cold and other lung complaints.

Ichnocarpus frutescens (L.) R. Br. (APOCYNACEAE)

EA 348

Ln.: Nankimala

Habit: Twining shrub

Fl. & Fr.: September- February

Ethnomedicinal Uses: Decoction of leaves is massaged on teeth and swollen gums in pyorrhoea for early cure.

Justicia adhatoda L. (ACANTHACEAE)

EA 142

Ln.: Adusa

Habit: Shrub

Fl. & Fr.: October- March

Ethnomedicinal Uses: Powder of whole plant of *Justicia adhatoda* and *Tinospora cordifolia* is mixed. It is boiled with water and sugar at least for an hour. This mixture is cooled and then root powder of *Piper longum* is added. Two teaspoon of this decoction is taken twice a day for 15 days to cure bronchitis and asthma. It acts as expectorant.

Lannea coromandelica (Houtt.) Merrill (ANACARDIACEAE)

EA 251

Ln.: Godal

Habit: Deciduous tree

Fl. & Fr.: January-July

Ethnomedicinal Uses: Warmed bark extract is poured in ear in earache and to stop pus formation.

Leucas aspera (Willd.) Link (LAMIACEAE)

EA 147

Ln.: Piyari

Habit: Densely hairy herb

Fl. & Fr.: Throughout the year

Ethnomedicinal Uses: Extract of Inflorescence is massaged on fore-head in headache and migraine.

Luffa acutangula (Linn.) Roxb. (CUCURBITACEAE)

EA 91

Ln.: Jangli Turoii

Habit: Extensive climber

Fl. & Fr.: July-October

Ethnomedicinal Uses: Fruits are crushed and given orally in dog bite as antidote.

Nyctanthes arbor-tristis Linn. (OLEACEAE)

EA 207

Fl. & Fr.: August-November

Ethnomedicinal Uses: 75 gm leaf power in taken orally with milk for 15 days in rheumatism while herbal tea prepared from leaves is taken in obesity.

EA 300

Fl. & Fr.: April-July

Ethnomedicinal Uses: Extract of roots and fruits is taken orally by the tribals to stop shivering by enhancing the body temperature.

EA 152

Fl. & Fr.: Feb.-August

Ethnomedicinal Uses: Juice of apical shoot is given in diabetes as tonic. It is also given to cure diarrhoea twice a day for two days.

EA 145

Fl. & Fr.: August-December

Ethnomedicinal Uses: Whole plant is fried in butter and pellets are made which are taken orally once a day for a month in jaundice as liver tonic.

EA 249

Fl. & Fr.: March-June

Ethnomedicinal Uses: Extract of leaf is massaged on the forehead in migraine.

EA 298

Fl. & Fr.: October-March

Ethnomedicinal Uses: Half cup leaf and bark extract is given to women and one teaspoon to newborn child suffering from jaundice just after delivery for 3 to 7 days twice a day.

EA 95

Fl. & Fr.: June-Oct.

Ethnomedicinal Uses: One teaspoon decoction of whole plant is given orally in rheumatism once a day for 7 days by the tribals. Before and after taking this decoction nothing is to be eaten at least for one hour.

EA 340

Fl. & Fr.: Most part of the year

Ethnomedicinal Uses: (1) Smoke treatment of fruits is taken by the tribals to cure piles, for this purpose affected part is fumigated.

(2) Quarter cup decoction of root made with jaggery is given to women in acbolis and for the abortion of foetus upto 5 months, more quantity will be poisonous. This decoction is also taken by the women to set up menstrual 'disorders.

Strychnos nux-vomica L. (LOGANIACEAE)

EA 265

Ln.: Kajda

Habit: Tree

Ethnomedicinal Uses: Seed oil is applied externally on various skin diseases like eczema and sores.

Vitex trifolia L.f. (VERBENACEAE)

EA 331

Ln.: Tal-patiay, Tapdi, Tinpostia

Habit: Herb

Fl. & Fr.: August-November

Ethnomedicinal Uses: The paste of tuber is applied externally for early cure of throat sore by the tribals.

Vitis vitifolia Haines (VITACEAE)

EA 250

Ln.: Jangli Angoor

Habit: Weak climber

Fl. & Fr.: August-November

Ethnomedicinal Uses: Half cup extract of tubers of this plant is taken by the tribals in stomachache and liver complaints.

Xeromphis spinosa (Thunb.) Keay (RUBIACEAE)

EA 281

Ln.: Mandol, Gadli

Habit: Spreading shrub

Fl. & Fr.: March-June

Ethnomedicinal Uses: Roots extract is given in flatulence by the tribal and also applied locally on wart, allergy, eczema and other skin diseases.

Zizyphus xylopyra (Retz.) Willd. (RHAMNACEAE)

EA 315

Ln.: Gatori, Ghat-bor

Habit: Shrub

Fl. & Fr.: December-January

Ethnomedicinal Uses: Crushed fruit powder is dipped in water and kept overnight. This infusion is taken by the women early in the morning for 7 days to check oogenesis.

RESULTS AND DISCUSSIONS

As a result of this study the ethnomedicinal uses of 41 plants belonging to 29 families have been documented for their therapeutic properties for various ailments. The knowledge of tribals on abortifacient and female contraceptive, which is one of the important informal innovation of them is quite relevant to the present day situation. In this context *Acacia leucophloea*, *Zizyphus xylopyra*, *Grewia orientalis*, *Crateva magna* and *Solanum virginiana* are used by the tribals of Southern Rajasthan.

As per earlier report fresh leaves of *Clitoria ternatea* are used to cure congestion of liver and

biliousness and roots are used to cure hydrophobia. However, the present study reveals that the seeds of this plant are used in the treatment of colic. The present study aids to the earlier knowledge of *Corchorus depressus* used in the weakness of heart by adding the use of plant to regain sexual vitality. In the present study ethnomedicinal value of plants such as *Crinum asiaticum*, *Euphorbia acaulis*, *Strychnos nux-vomica* and *Xeromphis spinosa* have been reported for the first time to cure various skin diseases, which are not mentioned by the earlier workers (Singh and Pandey, 1980, 1998 & Joshi, 1995). Among the total plants described in this paper, the use of 3 plants *i.e.* *Aegle marmelos*, *Leucas aspara* and *Pongamia pinnata* have been reported for the first time in the treatment of migraine by the tribals of the study area. Hence the role of ethnomedicinal survey and field work is of crucial importance as some miraculous medicines are known to the tribes and aboriginals and much acquired knowledge through the age is usually passed on from generation to generation as a guarded secret of certain families. Therefore, it is necessary to popularize the identity and utility of these medicinal plants. These highly interesting findings require further research, while efficacy of the various indigenous ethnomedicinal practices will need to be subjected to pharmacological validation.

ACKNOWLEDGEMENTS

One of the authors (Dr. Anita Jain) is thankful to the CSIR, New Delhi (India) for providing financial assistance and to the authorities of Forest Research Institute, Dehradun (India) for consulting herbarium for final identification of herbal plants. The authors also thankfully acknowledge the cooperation received from the tribals and forest officials of Dungarpur, Banswara and Udaipur districts.

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दक्षिणी राजस्थान के जनजातीय अंचल से पौधों के कुछ अप्रतिवेदित औषधीय उपयोग

एस.एस. कठेवा, अनिता जैन, बी.एल. चौधरी व प्रवीण गालव

सार संक्षेप

इस आलेख में दक्षिणी राजस्थान की जनजातियों द्वारा उपयोग की जाने वाली 29 कुलों के 41 जातियों के पौधे जिनके औषधीय उपयोग की जानकारी नहीं थी, उन पर लिखा गया है। कुछ पौधों के औषधीय उपयोग अत्यन्त महत्वपूर्ण हैं : जैसे *एगल ममेलोस*, *ल्युकस एस्पेरा* एवं *पोगेमिया पिन्नेटा* माइग्रेन (सिरदर्द) में; *एकेसिया ल्युकोफोलिस* गर्भ निरोधक के रूप में; *बोरेसस फलेबेलिफर*, *ग्रेविया ओरिएंटेलिस* तथा *जिजिफस जाइलोपाइरा* महिलाओं के एवं *कोकुलस विलोसस* पुरुष प्रजनन क्षमता समाप्त करने में; *साइट्रस मेडिका* गुर्दा पथर; *क्राइनम एशिएटिकम* वक्ष कैंसर; *क्रिप्टोलोपिस बुकननी* बवासीर *गार्डनिया टर्जिडा* तथा *लुफा एकुटेंगुला* पशु दंताघात में; *इक्नोकार्पस फ्रूटसेंस* मसूढ़े के रोग में; *लेनिया कोरोमंडेलिका* कान दर्द में; *निक्टेंथिस आर्बोरेस्टिस* मोटापा में; *यूफोर्बिया एकाउलिस*, *ग्रेविया डेमिन*, *जेरोम्फिस स्पिनोसा* चर्म रोग तथा *किलटोरिया टनेटिया* उदर पीड़ा में। पौधे के जिस भाग का उपयोग होता है और जिस तरह उपयोग होता है यहां उनका उल्लेख है।