



INDIGENOUS PEOPLE AND PLANTS-PERSPECTIVES OF AN ETHNOBOTANICAL STUDY FROM JAIPUR DISTRICT (RAJASTHAN)

APARNA PAREEK* and NEELU SHARMA

*Department of Botany, University of Rajasthan. Jaipur, India.

Department of Botany, Saint Xaviers College, Nevtā

* Corresponding author : E-mail:aparna992000@yahoo.com

Man is solely dependent on other organisms for the sustenance of his life. Various animal and mineral products contribute for his welfare, the plant kingdom is most essential to man's well being, especially in catering his basic needs. Human is continuously using the plants in one or the other way in the treatment of various disorders. Plant science has opened number of vistas with the increasing knowledge of various fields pertaining to plant physiology experimental morphogenesis, cytology, genetics, biochemistry, plant breeding, plant pathology, genetic engineering, but in view of the existing relationship between plant and human beings since ancient time, it has not been analyzed in deep sense. The present article brings into light the relationship between indigenous people and plants and the various ailments cured by these plants.

Keywords: Ethno botany; Indigenous; Jaipur; Medicinal plants.

Introduction

Ethnobotany is the study of the relationship between plants and people. Ethnobiology and human ecology are two most important disciplines which have a great significance for welfare of human beings and animal world. Ethnobiology is nowadays emerging as a holistic segment of ecology and has brought to light numerous known or unknown uses of plant which have potential of wider usages. Ethnobotanical studies based on utilization of plants by the rural folks including tribals have gained momentum in the recent past all over the world. A comprehensive work has been carried out both at national and regional levels^{1,2}. In Rajasthan, which is one of the largest states of the India, a lot of work has

been done in the past three decades. Although large variety of medicinal plants are growing in India but the trade of these crude drugs has remained in the hands of unqualified and unskilled person which causes the collection of the primitive or incorrect drugs and thus often leads to adulteration or substitution. The global interest and practices of such studies of crude drug therefore, considerably increased during the last two decades because of growing awareness about the toxicity and adverse effects of synthetic allopathic drugs. It is therefore imperative that scientific standard techniques should be adopted for validity and quality control of such types of herbal drugs. The tribals and different ethnic groups throughout the world have developed their own culture, taboos,

totems, legends, myth folk lures, songs, food, medicinal practices etc. The importance of medicinal herbs in the present scenario is a matter of argument than of potent research.

All oldest cultures of the world traditionally used plant medicines both for primary health care and as a house hold remedies. In many of these countries, like those of India and China, this cultural knowledge is well documented^{3,4,5}.

Medicinal plants are value based for the content and chemical composition of their known active principles. Therefore, the demand on plant therapeutics has enhanced many fold in both developing and developed nations due to their growing recognition that they are natural products being non-toxic, no side effect and being available at affordable prices. According to a survey, international market of medicinal plant or plant based drug is over US \$ 60 billion per year which is growing at the rate of 7 percent per year^{6,7}. The early 20th century saw an impotent evolution of the pharmaceutical industries with the development of certain chemical techniques, crude drugs were replaced by pure chemicals drugs and at the same time developed countries witnessed a huge decline in popularity of medicinal plant based drug. However, during the recent past

the pendulum has swung back again and there is a revival of interest in such studies and utilization of medicinal herbs^{8,9,10}.

The above text reveals that ethnobotany is an emerging field of botanical research in present scenario and has gained momentum in the last decades due to the changes in the areas pertaining to environmental, social, and developmental and other properties which has created interest among the development of the local inhabitants. They are further attracted towards the field of ethnobotany for cultural medicinal and ecological interaction^{11,12,13}. Hence, there is an urgent and potent need to record and preserve the age long folklore and practices before valuable ethnobotanical data gets disappear.

Methodology

The methodology used for collecting the ethnobotanical information in the present investigation was categorised as (1) Direct approach (2) Indirect approach wherein the tribals were interviewed for unveiling the uses of plants in curing the various ailments.

Result and discussion

In Rajasthan which is one of the largest states of India, a lot of work has been done in last few decades regarding the importance of medicinal plants used by the indigenous people.

Table 1. Ethnomedicinal plants of Jaipur district (Rajasthan)

| S. No. | Name of Plants | Local Name | Family | Useful part | Ailment | Mode of administration |
|--------|-----------------------|------------------|------------|-------------|-----------------------------------|--|
| 1. | <i>Acacia catechu</i> | Kattha/ Khair | Mimosaceae | Barks | Stomatitis | Paste locally |
| | | | | Seeds | Immunization | Seeds with water given orally for 7 days |
| | | | | Leaves | U.T.I. | Leaves mixed with sugar taken orally |
| | | | | Leaves | To clear uterus after child birth | As vegetable |

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|--------|------------------------------|-------------------------|-----------|-------------------------|-------------------------------------|--|
| | | | | Stem bark | Heal pain | 100 gm <i>Piper longum</i> , 100 gm bark of this plant mixed with Kacchi Ghani and roasted in cow urine and apply locally. |
| 2. | <i>Abelmoschus mosvestus</i> | Wild bhindi | Malvaceae | Seeds, fruits and barks | Stomach ache | Paste of seeds taken orally |
| 3. | <i>Abrus precatorius</i> | Ratti, Safed gunja | Fabaceae | Leaves | Heart inflammation | Extract orally |
| | | | | Roots | Sexual vigor | Orally |
| | | | | Root | Leucorrhoea | Decoction is taken orally twice a day |
| | | | | Seeds | Abortion or birth control | Powder taken orally with water |
| | | | | Seeds | Leprosy, pimples and Acne, ringworm | Paste of seed mixed with <i>Sesamum</i> , <i>Cannabis</i> and applied locally |
| | | | | Seeds | Constipation | 2-3 seeds orally |
| | | | | Seeds | Increase, scanty menstrual flow | Powder taken orally after menstruation. |
| | | | | Seeds | Pregnancy testing | One seed taken orally with water in case of non conceiving, |
| | | | | Seeds | Laxative and vomiting agent | Powder taken orally in less quantity because seed is poisonous. |
| | | | | Leaves | Wounds | Paste locally. |
| | | | | Seeds | Lack of estrus (heating) | Crushed seeds are soaked in water overnight and given orally in the morning. |
| | | | | 4. | <i>Abutilon indicum</i> | Khanghi, bel-Khateti, Tala Kunji |
| Leaves | Syphilis | Paste Locally | | | | |
| Leaves | Dental ailment | Extract gargle | | | | |
| Leaves | Stone in urinary bladder | Leaf juice taken orally | | | | |

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|----|---------------------------|---------------|-------------|--|-----------------------------------|--|
| | | | | Whole Plant | Gonorrhoea | Decoction taken orally |
| | | | | Seeds | Syphilis | Paste orally |
| | | | | Whole plant | Sexual potential & sperm scarcity | Powder mixed with sugar taken orally |
| | | | | Whole plant | Leucorrhoea | Shadow dried mixed with sugar and cow milk and taken orally. |
| | | | | Whole plant | Dilute semen & weak sperm | Shadow dried powder mixed with sugar and cow milk, |
| | | | | Roots | Long life span with strong vigour | Decoction taken with milk or honey, orally |
| | | | | Seeds | Constipation | Seeds powder taken orally. |
| 5. | <i>Acacia senegal</i> | Khairi/Sengal | Mimosaceae | Flower | Eye infection | Sap locally |
| | | | | Gum | Haemorrhage | Taken orally |
| | | | | Gum | Inflammation | Orally given |
| | | | | Stem bark | Dysentery | Decoction given orally mixed with honey or Jaggery |
| | | | | Stem bark | Fever | Decoction mixed with honey or Jaggery, vapour inhaled by nose |
| | | | | Stem bark | Severe cough and cold | Decoction given orally |
| | | | | Stem bark | Abdomen swelling | Decoction orally given for 2 days |
| | | | | Roots | Fever | Orally given for 3 days |
| | | | | Bark inner parts layer lower epidermis | Dysentery | 10gm inner bark paste mixed with gholuwa and drink orally for two days in morning. |
| | | | | Stem bark | Swelling | Boiled and cooled decoction of stem is given orally in the night. |
| 6. | <i>Alangium lamorokil</i> | Akol | Alangiaceae | Roots | Snake bite | Decoction mixed with cow milk given orally in interval |

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| | | | | | | of 15 minutes. |
| | | | | Roots | U.T.I. | Decoction given orally. |
| | | | | Roots | Constipation | Powder given orally |
| 7. | <i>Albizia lebbek</i> | Siris | Aizoaceae | Leaves | Diabetes | Juice taken orally |
| | | | | Leaves | Insects bite | Pastes topically |
| | | | | Flower | Headache | Paste locally |
| | | | | Seeds | Asthma | Powder given with goat milk |
| | | | | Seeds | Spermatorrhoea, piles and Diarrhoea | Seed power with cow milk given orally for fifteen days |
| | | | | Barks | Toothache | Decoction as mouth wash |
| | | | | Seeds | Teething problem in children's | The necklace of seed is wore by child. |
| 8 | <i>Boswellia serrata</i> | Salar | Burseraceae | Leaves | Scorpion sting | Paste topically |
| | | | | Bark, gums and resins | Abscesses | Locally applied |
| | | | | Leaves and bark | Body pain | Decoction taken orally |
| 9 | <i>Capparis decidua</i> | Kair, Kareel | Capparaceae | Leaves | Boils and swelling | Paste locally |
| | | | | Fruits | Cardiac trouble | Taken orally |
| | | | | Bark | Cough and asthma | Decoction orally |
| | | | | Roots and roots bark | Rheumatism, intermittent fever and dropsy | Decoction taken orally |
| | | | | Twigs | Toothache | As tooth brush |
| | | | | Fresh, new borne leaves | Ringworm | Paste applied locally in effected area |
| | | | | Leaves | Toothache | Juice/extract dropped in ear |
| | | | | Buds | Sprain | Paste mixed with cow urine, externally |
| | | | | Latex | Embedded thorn in body | Latex applied locally |

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| 10. | <i>Cardiospermum halicabum</i> | Ilayachi | Sapinadaceae | Seeds | Rheumatism | Powder with water or cow milk orally |
| | | | | Plants | Tumours | Decoction taken orally |
| | | | | Fruits | Internally heating in body | Mixed with cow milk and taken orally |
| | | | | Fruits | Leucorrhoea | Taken orally daily with cow milk (freshly) |
| | | | | Fruits | Piles | One fruits mixed with <i>Areca catechu</i> , mishri and honey and taken orally in morning. |
| | | | | Fruits | Riddances the smoking habit | Chewing seeds besides Bidi, cigarette |
| | | | | Seeds | Mouth fresh | Chewed orally |
| 11. | <i>Cyanodon dactylon</i> | Doob, Doob ghas | Poaceae | Whole plant | Wounds | Paste apply locally |
| | | | | Whole plant | To fix pregnancy or bleeding during pregnancy | Ground with sugar and taken orally for 7 days |
| | | | | Whole plant | Piles | Paste locally |
| | | | | Whole plant | Eye disease vomiting with bleeding | Juice locally |
| | | | | Whole plant | Tuberculosis | Juice taken orally in morning for one month |
| | | | | Whole plant or leaves | Boils | Apply the paste locally |
| 12 | <i>Gloriosa superba</i> | Kalihari | Tiliaceae | Roots/leaves | Thorn embedded in body | Paste apply locally |
| 13 | <i>Maytenus emarginata</i> | Kokoda | Cucurbitaceae | Leaves | Sore and wound | Paste locally |
| | | | | Seeds | Allergy, scabies | Oil locally applied |
| | | | | Whole plant | Pneumonia/ cold fever | Decoction orally |
| | | | | Fruits | Scorpion sting | Locally applied |

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| | | | | Fruits | Blood purities | Taken orally daily in morning |
| | | | | Fruits | Constipation indigestion | Used as vegetable or sauce orally daily with lunch |
| 14 | <i>Melia azedarach</i> | Bakayan / Maha neem | Meliaceae | Leaves | Sprain | Extract orally |
| | | | | Leaves | Cataract | Leaves extract dried in sunlight and mix 3 gm Bheemseni Kapoor in it then apply as kajali. |
| | | | | Leaves | Stomachache | Decoction of leaves with 2 gm ginger powder (Sounth) and given orally. |
| | | | | Seeds | Diabetes | Seed crushed in rice water and mixed in cow butter and given orally twice a day for 30 days |
| | | | | Fruits | Moderate fever | Unripe fresh fruits pounded with ajwayan seeds and mixed with guduchi extract and prepare tablets, 2 tablets given orally twice a day. |
| 15 | <i>Mentha spicata</i> | Mints / Podina | Lamiaceae | Whole plant | Scorpion sting | Paste topically |
| | | | | Leaves | Diarrhoea | Paste mixed with curd or Lassi or juice taken orally |
| | | | | Whole plant | Cholera | Juice taken orally |
| 16 | <i>Mollugo cerviana</i> | Chida ka Bazra/ Chidighas | Molluginaceae | Roots | Fever | Decoction orally |
| | | | | Whole plant | Sexual vigour | Juice taken orally |
| | | | | Fruits | Sexual vigour | Powder taken orally with ghee |
| | | | | Seeds | Erectile dysfunction | Seed powder warm up in sesamum oil & used for massage. |

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| 17 | <i>Redilanahus tithimalo</i> | Nagdammi bis- mohra | Euphorbiaceae | Leaves/ latex | Snake bite | 3 leaves mixed with 5 seeds of black pepper and given orally 2-3 times a day |
| | | | | Latex & leaf | Boils | Roasted half & locally. |
| 18 | <i>Solanum surratense</i> | Vrahadi kantkari | Solanaceae | Fruits | Cough | Chewed |
| | | | | Fruits | Toothache and jaw ache | Chewed directly |
| | | | | Flowers | Diarrhoea | Given orally directly |
| | | | | Leaves | Rheumatism | Given orally to patient |
| | | | | Roots | Cough asthma and fever | Decoction given orally for 5 days |
| | | | | Seeds | Irregular menstrual cycle | Eaten orally with water |
| | | | | Whole plant | Syphilis | Paste locally applied |
| | | | | Whole plant | Piles | Locally applied |
| | | | | Seeds | Cough, URI | 10 gm seeds roasted half on tawa and mixed 10 gm jaggery then make 10 tablets of 2-2 gm and taken orally twice in a for 3 days |
| Seeds | Germ in tooth and toothache | Vapour used to kill the germ mustard oil and seeds of <i>Solanum</i> roasted and dropped in ear. | | | | |
| 19 | <i>Solanum laxmana</i> | Laxamana white flower kantkari | Solanaceae | Roots, Seeds | To male progeny | 5 gm fresh roots crushed-powdered and mixed with cow milk and given orally after 3 weeks of pregnancy given in morning daily for 3 days |
| | | | | Seeds | Infertility | Powder given orally with cow during mens. |

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| 20. | <i>Sonchus oleraceus</i> | Kadi Gobhi sonchus | Asteraceae | Whole plant | Piles | Paste applied for a week. |
| 21 | <i>Tamarix aphylla</i> | Farash | Tamaricaceae | Roots and stem bark | Burns, ulcers and wound | Paste locally applied |
| 22. | <i>Thevetia peruviana</i> | Pili Kaner, Ashwa marak | Apocynaceae | Roots | Eczema and other skin disease | Roots roasted with oil of <i>Sesamum</i> and make a decoction and paste with besan apply locally. |
| 23 | <i>Tecomella undulata</i> | Rohida | Bignoniaceae | Bark | Syphilis | Chewed directly for 7 days |
| | | | | Bark | Birth control | Chewed directly for 3 days |
| | | | | Bark | Leucorrhoea | Powder mixed with honey and sugar and taken with milk orally |
| 24 | <i>Tephrosia purpuria</i> | Sarpunkha, Dhamasa | Fabaceae | Leaves | Piles and leprosy | Paste locally apply |
| | | | | Roots | Gohara bite | 250 gm roots roots of Dhamasa mixed with 100 gm old gur and give orally 2-3 time with regular intervals of ½ an hours |
| | | | | Roots | Typhoid | 5 gm roots, 21 leaves of <i>Ocimum sanctum</i> , black salt 2 gm, <i>Piper longum</i> mixed with water warmed and cooled it make pills then orally for three day |
| | | | | Roots | Menorrhoea | Powder with rice mand (Rice water) given orally for 5 days |
| | | | | Whole plant | Gastritis | Paste orally taken orally |
| | | | | Whole plant | Skin disease wounds | Paste locally |

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|----|---------------------------|----------------|---------------|-----------|---|---|
| | | | | Plant | Jaundice, Asthma, cough and fever | Decoction orally |
| | | | | Roots | Snake bite | Paste locally |
| | | | | Twigs | Toothache | As tooth brush |
| 25 | <i>Terminalia chebula</i> | Haritki, harad | Combretacea-e | Fruits | Infection in eye due to latex of <i>Calotropis</i> | Chewed |
| | | | | Stem bark | Fracture of bone | Paste locally and powder from taken orally with ghee and sugar daily |
| 26 | <i>Terminallia arjuna</i> | Arjun | Combretacea-e | Stem bark | Heart problems obesity, night fail, loss of appetite, moderate fever, dysentery, wound healing etc. | Make (Arjun ksheer) and taken orally for 3 months regularly for relax from mentioned disease, Method of prepare the ksheer, 1 cup milk of cow, 1 cup of water, 10 gm Arjun powder, decoction prepare mixed sugar and taken orally |
| | | | | Stem bark | Chronic acute wound healing | Decoction used for wash the wound daily for 15 days |
| | | | | Stem bark | Moderate fever | Arjun kesheer Decoction taken orally in morning for 15 days |
| | | | | Stem bark | Dysentery | Used the goat milk to prepare Arjun kisheer and taken orally twice in a day powder also taken twice in a day to fast relief |

The present investigation is also related with ethnobotanical especially ethnomedicinal importance of plants growing in

Rajasthan. Deforestation, urbanization, industrialization, transmigration, colonization and other developmental

activities have threatened not only the biological resources but also the traditional culture and ethnobotanical knowledge^{14,15,16}. The present review unveils some of the important plants used by the local indigenous people of Rajasthan for various purposes pertaining to food, shelter and medicines for curing ailments (Table 1).

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References

1. Agarwal SR 1981, Trees, flowers and fruits in Indian folk songs, folk proverbs and folk tales. In S.K. Jain (Ed.) *Glimpses of Indian Ethnobotany*. Oxford and IBH Publishing Company, New Delhi, pp. 3-12.
2. Agarwal SR 1997, Trees, flowers and fruits in Indian folk songs, folk proverbs and folk tales. In S.K. Jain (Ed.) *Contribution to Indian Ethnobotany*. 3rd ed. Scientific Publishers, Jodhpur, 25-33.
3. Aikman L 1974, Nature's gift to medicine. *National Geographic*. **146**(3) 420-440.
4. Anonymous 1984, All India Coordinated Research Project on Ethnobiology – Annual Report. Department of Environment, Govt. of India, New Delhi.
5. Arora RK 1987, Ethnobotany and its role in domestication and conservation of native plant genetic resources. In: Jain SK (Ed.) *A. Manual of Ethnobotany*. Scientific Publishers, Jodhpur, 94-102.
6. Arora RK 1997, Native food plants of tribals in north-eastern India. In S.K. Jain (Ed.) *Contribution to Indian Ethnobotany*. 3rd ed. Scientific Publishers, Jodhpur.
7. Arora RK and Pandey A 1996, "Wild Edible Plants in India". NBPGR, Science Monograph, No. 7, pp. 1-90.
8. Bhandari MM 1974, Native resources used as famine foods in Rajasthan. *Eco. Bot.* **28**(1) 73-81.
9. Bhattacharjee SK 2004, *Handbook of Medicinal Plants*. 4th ed. Pioneer Publishers, Jaipur, India.
10. Bhattacharjee SP and De LC 2007, *Medicinal herbs and flowers*. Aavishkar Publisher, Jaipur (Rajasthan), India.
11. Choudhary AB 2007, *Endangered Medicinal plants*, Daya Publishing House, Delhi. 25-44.
12. Jain SK 1987b, *Methods and Approaches in Ethnobotany*. Deep Publications, New Delhi.
13. Jain SK 1987c, *A Manual of Ethnobotany*. Scientific Publishers, Jodhpur.
14. Jain SK 1989, *Methods and Approaches in Ethnobotany*. Society of Ethnobotany, Lucknow. 1-92.
15. Singh V and Pandey RP 1998, *Ethnobotany of Rajasthan (India)*. Scientific Publishers, Jodhpur.
16. Trivedi PC 2002, *Ethnobotany*. Aavishkar Publishers & Distributors, Jaipur.