



# Rare Ethnomedicinal and Ethnoveterinary Plant Species for Medicinal use of Dang Region Dholpur, Rajasthan (India): Needs Conservation

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## ABSTRACT

Man is completely dependent on plants for his life. From ancient times until recently, people healed themselves with traditional herbal medicines and many cases by trial, proved that ethnomedicines are effective and no side effects. Ethnomedicinal plants are disappearing rapidly because increase in population, urbanization and industrialization and overgrazing. Ethnomedicinal plants conservation involves the upkeep of the natural resources that are beneficial for both humans and the ecosystem. So conservation of these medicinal plants is necessary for sustainable development for future generation. Conservation of these ethnomedicinal plants can be increased by in-situ and ex-situ conservation.

**KEYWORDS :** Ethnomedicinal , Ethnoveterinary, Conservation, Sustainable development.

## INTRODUCTION

Ethnobotany deals with traditional and natural relationship between human societies and plants. The revival of interest in natural drugs, especially those derived from plants, started in last decades mainly because of the widespread belief that 'Green medicine' are healthier and safer than the synthetic ones. The western countries are using more plant-based supplements owing to the factors such as side effects of synthetic medicines and higher levels of awareness about plant based medicines. Changing lifestyles and dietary patterns also support the growth in demand for these supplements. Market sector of Herbal medicines which has grown

at 15–20% annually in western countries during last few years. Advantage of such factors can contribute significantly in conservation of these valuable medicinal plants.

Dholpur is a city in the eastern most parts of the Rajasthan state of India. It is located on left bank of the Chambal River. Dholpur district is among the largest Dang region district in the state of Rajasthan. Dang region of Dholpur is one of the arid regions of Rajasthan state marked with degraded ravines, barren land and severe water shortage. All these factors have created challenges and awareness for the community in general to engage with basic livelihood activities such as agriculture on one hand and livestock rearing on the other hand. Low farm yield and poor livestock productivity leads to pervasive poverty. Most farmers in the Dang region struggle hard even to fight hunger.

## **RARE ETHNOMEDICINAL AND ETHNOVETERINARY PLANTS IN DANG REGION OF DHOLPUR**

*Acacia nilotica*, *Acacia jacquemontii*, *Anogeissus pendula*, Tulsi (*Ocimum sanctum*), *Cyandodan dactylon* (Durva/Dube), *Ficus benghalensis* (Vatbriksh) *Ficus religiosa* (Peepal), *Musa paradisiaca* (Kadali/Banana), *Punica granatum* (Anaar), *Prosopis cineraria* (Khejari), *Azadiracta indica* (Neem), *Anthocephalus kadamba* (Kadama), *Eleiocarpus* spp. (Rudraksha), *Emblica officinalis* (Amla), *Aegle marmelos* (Bilva patra/Bel), *Saraca indica* (Ashoka), *Santalum album*, *Achyranthes aspera* (Oonga) , *Balanites aegyptiaca* (Heengota), *Citrullus colocynthis* (Indrayan), *Desmostachya bipinnata* (Daab), *Solanum xanthocarpum* (*Phal cateli*), *Tridax procumbens* (*Ghamra*) , *Asparagus racemosus* (Shatavari), *Peadalium murex* (Bara gokhru), *Lantana camera*, *Ziziphus mauritiana* (Ber), *Adhatora vasica* (Adhusa), *Jatropha curcas* (Jamalgota), *Feronia elephantum* (Kaitha), *Fagonia cretica* (Jawasio). *Prosopis cineraria*, *Tecomella undulata*, *Cassia tora*, *Melia azedarach*, *Boerhavia diffusa* etc.

## **DISCUSSION**

### **Needs for Conservation**

India is on second position for rich medicinal and ethanomedinal plants treasure. The loss of medicinal plant species is not only an economic tragedy but also of great ethical, social and cultural concern. For effective conservation of endangered and other species of medicinal plant some scientific methods should be followed for conservatbion of medicinal plants which are categorized into following:

## 1. Conservation of Medicinal Plants by Traditional System

Tribals consider according to Indian mythology that God is happy by worshiping the plants, so they started worshiping the plants for finding the blessing and special request associated to God and Goddess. The tribals are well known for their awareness for conservation of nature and real love with nature and natural resources. These tribal communities not only utilize the plant based things but also protect and conserve the plants by plantation and scattering the seeds and other propagative parts of medicinally important plants and cultivate such things for their continuous supply of required material in daily uses. Tribes adopted the other vegetative methods of propagation because they earn their livelihood from them

## 2. To Conservation of Medicinal Plants In-Situ

The conservations of medicinal plants through their maintenance with the natural or even human made ecosystem of their occurrences as natural reserves, and biospheres, national parks, sanctuaries belong to this type of conservation

## 3. To Conservation of Medicinal Plants Ex-Situ

- (a) Medicinal plant display garden or Herbal Garden: In this method the plants are grown naturally selected from the safe, rare and endangered category.
- (b) Field gene bank method: They are simple forms where the endangered and threatened species of medicinal plants are cultivated under the protection
- (c) Seed bank: Some plants which stand on the step of extinction completely or some endangered and threatened endemic plants and the plants species which are crudely exploited.
- (d) Mericlone bank: These types of banks have the samples of endangered species of medicinal plants along with their intraspecific varieties.
- (e) Cryo banks: Germplasm preservation technique at infra low temperature at  $-196^{\circ}\text{C}$  is called cryo preservation and the places where the germplasm is preserved are known as cryo banks.
- (f) Cell repository: In this method the cells of medicinal plants are preserved under controlled condition of temperature, moisture, salt concentration etc. for its supply wherever needed.

Plant tissue culture techniques also used for medicinal plants conservation in this technique plant species in vitro (in laboratory) or aseptic culture plants propagules or explants grow on.

## 4. Cultural practice

The principles of good plant husbandry, including appropriate rotation of plants selected according to environment suitability should be followed. Proper selection of site, climate, soil, irrigation and drainage should be controlled and carried out in accordance with the needs of the individual medicinal plant species during its various stages of growth. Seeds and other propagation materials should be fresh, pathogens free, seeds quarantined

## Causes and preventive methods for Extinction of Medicinal Plants

According to W.H.O. the resurgence of public interest in traditional phytomedicine has increased because of a sweeping green wave and a large number of plants based drugs are now available in the health food shops all over including the developed world. Other reason of extinction of medicinal plants species is habitat destruction caused due to increased human activities like settlements, agriculture and urbanization like other developmental project as bridges, national, highways industries etc.

- Jhum practice of agriculture is very common in tribal dominating areas specially Dang region Dholpur.
- Recently appeared cause of habitat destruction of medicinal plants is introduction of exotic weeds like *Lantana camara*, *Prosopis juliflora*, *Parthenium hysterophorus* etc. Pollution posing stress on ecosystem, global warming and green house effect and unreasonable use of chemicals, fertilizers and pesticides etc.

Government of India and state government have made some acts to protect wild life as well as cultural heritage of Ethnic groups. Some important acts are:

- Indian forest acts
- The forest conservation act (1980)
- The wild life (specified plant condition for procession by like Rule (1995) for the protection of plants.

These strategies continue to be followed and the plants are conserved but the medicinal qualities of plant are at stake.

## CONCLUSION

The present study reveals that the plant resources of medicinal plants of Dholpur district are rare so their conservation is necessary for future generations. Day by day demand of these rare medicinal plant species decreasing, causing depletion of naturally occurring resources. Various like these conservation techniques helpful for sustainable development. The importance of this study make sure that the medicinal plant species still grow and develop within the wild in their natural habitats.

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## CONFLICT OF INTERES

Authors have no conflict of interest.

**REFERENCES**

1. Sensarma P 1991, Herbal veterinary medicines in an ancient Sanskrit Work. The Garuda Purana. Ethnobot. 3 83-87.
2. Joshi P 1995, Ethnobotany of the Primitive Tribes in Rajasthan. Printwell, Jaipur.
3. Trivedi PC (Ed.) 2002, Ethnobotany. Aavishkar Publishers & Distributors, Jaipur.
4. Sharma OP 2006, Ethnobotanical Studies of District Jhunjhunu (Rajasthan). Ph.D. Thesis, University of Rajasthan, Jaipur.
5. Faulks PJ 1958, An Introduction to Ethnobotany. Moredalte Publications Ltd., London. J. Phytol. Res. 28 (1 & 2) : 55-62, 2015 61
6. Das SN 1990, Floristic and ethnobotanical studies on Sawai Madhopur district, Rajasthan. Ph.D. Thesis, Jodhpur Univ., Jodhpur.
7. Vyas LN and Gupta RS 1962, An annotated list of medicinal plants of Alwar, Rajasthan: Ser. 1. Proc. Raj. Acad. Sci. 9(2) 49-55.
8. Chopra, IC and Abrol BK 1964, Some medicinal plants suitable for cultivation in Indian arid zone. Proc. Symp. Indian Arid Zone, Jodhpur, 56- 58.
9. Ganguly BN and Kaul RN 1965, Utilization potential of a few important medicinal plants of western Rajasthan. Symp. recent advances in the development, production and utilization of medicinal and aromatic plants in India (MSS).
10. Gupta RK, Gaur YD, Malhotra SP and Dutta BD 1966, Medicinal plants of Arid zone. JNour. D'Agric. Tropicale et de Botanique Applique 13(6-7) 247-288.
11. Roy GP 1976, Bhartiya Marusthal Ke Ausdhiya Paudhe (in Hindi) Banaspatiki 4(1) 69-75.
12. Paroda RS 1979, Plant resources of Indian arid zone for industrial uses. Proc. Int. Arid lands Congr. Plant Resources, Taxus Tech. University pp, 261-268.
13. Singh V and Pandey RP 1980, Medicinal Plant lore of the tribals of eastern Rajasthan (India). J Econ. Taxon. Bot. 1 137-147.
14. Chakravarty HL 1975, 'Herbal Heritage of India'. Bull. Bot. Soc. Bengal. 29 97-103.
15. Jain SK 1975, Medicinal Plants. 2nd ed, National Book Trust Of India, New Delhi.

16. Kumar S, Goyal S and Parveen F 2003, Ethno-medico-botany of household remedies of Kolayat Tehsil in Bikaner District, Rajasthan. Indian J. Traditional Knowledge 2(4) 366- 370.
17. Nathawat GS and Deshpande BD 1960, Plants of economic importance from Rajasthan Proc. Raj. Acad. Sci. Jodhpur 7 38-47.
18. Shrivastva TN 1977, 'Forest resources of Rajasthan . Nature Resources Rajasthan 1 155-165.
19. Chandra K 1978, Medicinally important plants of Ajmer. Scientia. 21 77-80.
20. Shekhawat, M.S., Sharma, M.K. and Trivedi, P.C. (2006). Ethnoveterinary plants of Jaipur district, Rajasthan. India, Trivedi P.C. (ed.) Herbal Medicinal Traditional Practices, Aavishkar Publishers, Distributors, Jaipur, pp. 200-206
21. Trivedi, P.C. and Nargas, J. (1998). Ethnomedicinal plants of Rajasthan state (CSIR Project). Annual project report , University of Rajasthan, Jaipur.
22. Wallis, T.E. (1967). Text book of Pharmacognosy, J&A Churchil Ltd., London.
23. Yigra, G. (2010) Ethnomedicinal study of medicinal plants in and around Alamata, Southern Tigray , Northern, Ethiopia. Current Res.J. Biological Science, 2(5): 338-344.

