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Study of Ethnomedicinal Plants and their Conservation in Dang Region of Rajasthan (India)

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ABSTRACT

The present paper deals with the study of ethnomedicinal plants and their concervation in Dang region of Rajasthan. Ethnomedicinal and ethnoveterinary research in dang area of Rajasthan represents a study aimed at unraveling the rich traditional knowledge of plant usage among the indigenous community of dang region. These plants are used to curative various human ailments and also play an important role in healing. This research endeavors to document and analyze the indigenous knowledge systems, practices and beliefs associated with plants in dang region of Rajasthan.

Keywords: Ethnomedicinal, Traditional knowledge, Phytochemicals, Bioactive, Compounds.

INTRODUCTION-

The study of correlation between plants and people in surrounding them is called Ethno-botany. The ethnomedicinal plants are useful for therapeutic as well as for curing of human diseases because of the existence of phytochemical compounds. Phytochemicals are naturally stirring in the medicinal plants, leaves, vegetables and roots that have protection mechanism and protect from various diseases. Currently, the global demand of herbal medicines is increasing rapidly because of their higher safety margin and low cost.

Study Area – Dang area is one of the most resource dispossessed and arid region of Rajasthan state marked with degraded ravines, barren land and severe water shortage. Dholpur and Karauli districts with an area of 6034 square kilometers is located in eastern most extremity of the state of Rajasthan and lies between latitudes 22o21’19” and 26o57’33” North and longitude 77o13’06” and 78o16’45” East.

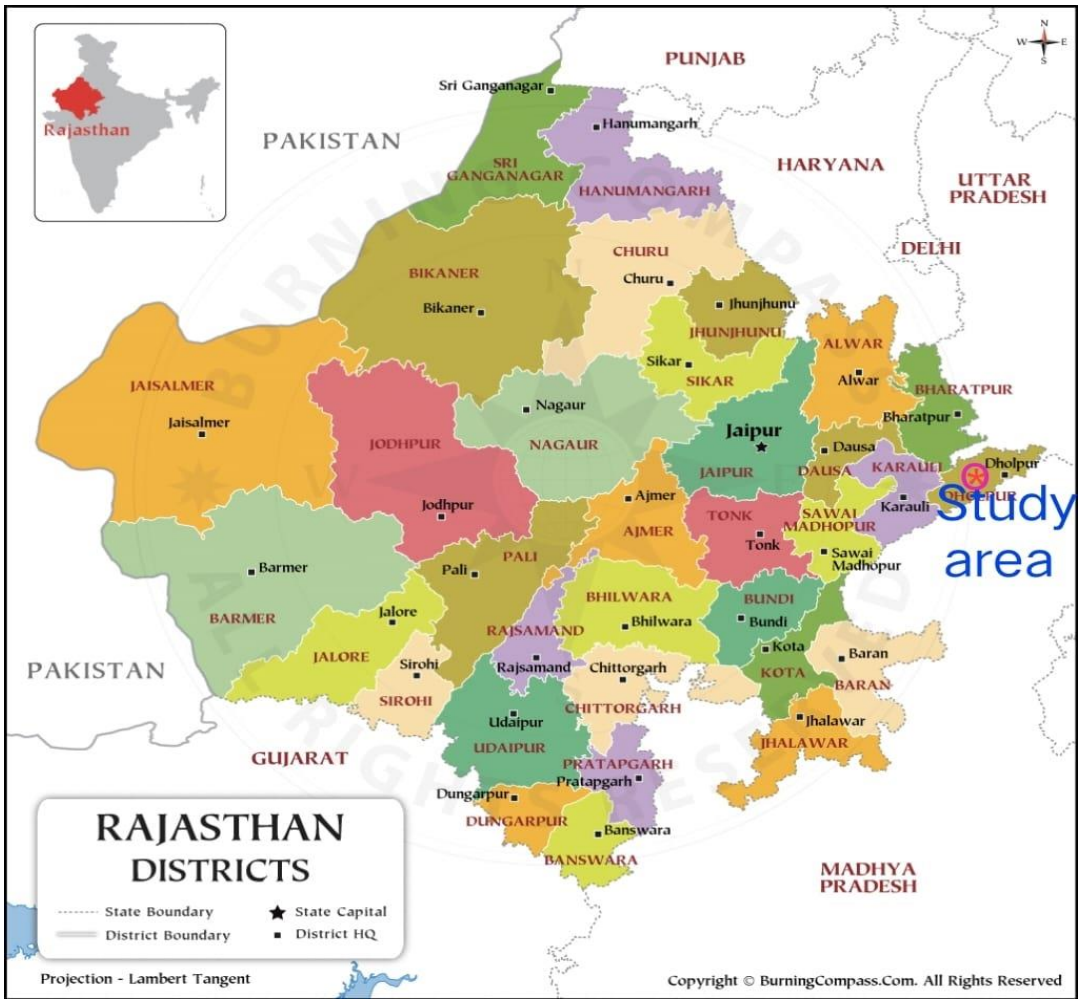

Fig. Map of Rajasthan state showing study area (source: Atlas of Rajasthan)

LITERATURE REVIEW AND BACKGROUND

The word "Ethnobotany" in 1895 by Harshberger, the subject Ethnobotany came into light. 'An Introduction to Ethnobotany' by scientist Faulks (1958), was considered the first boom on the subject though it covers economic botany too. In 1960 onwards there were several publications on herbal medicines. The famous ethnography of R.E. Shultes (1960) "Trapping our Heritage of Ethnobotanical lore" creates a great sense of urgency for the studies and researches into folklore medicine. Jain (1964, 1967, 1987) wrote about the scope and importance of ethnobotany for the improvement of food plants, development of new drugs widening the use of little known plants and conservation of plant diversity. The first book on ethnobotany in our country was published in 1981 under the title "Glimpses of Indian Ethnobotany" edited by Jain (1981).

1. **Methods -**
2. The plant life was identified by villagers of tribal local communities about various aspects.
3. Interviewing with regular people to know about ethno medicine and plants used for treating diseases in cattle.
4. Conservation of ethnomedicinal plants can be devided into two types:

- In-situ conservation: National Parks, Sanctuaries, Biosphere Reserves and Sacred Forests.

- Ex-situ conservation: Seed Banks, Gene Banks, Tissue Culture Banks, Botanical Gardens, Cryopreservation of Gametes, Long term Captive Breeding.

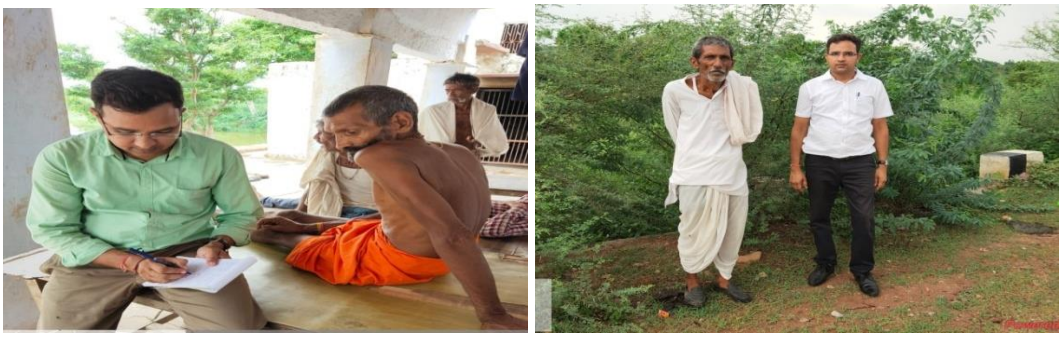

Fig. Interactions with different tribal communities of Dang region of Rajasthan.

Major plants species of Ethnobotanical importance: In Dang region of Rajasthan in the proposed work many plants were reported to cure various health ailments of indigenous people and need to conservation these plants. Some plants like *Asparagus racemosus, Abelmoschus esculentum, Achyranthes aspera, Adhatoda vasica, Azadirachta indica, Acacia nilotica, Anogeissus pendula, Balanites aegyptiaca, Bombax ceiba, Bauhinia variegate, Butea monosperma, Citrullus colocynthis, Cordia dichotoma, Calotropis procera, Capparis deciduas, Cissus quadrangularis, Cordia myxa, Datura stramonium, Dichrostachys cinerea, Dracaena trifasciata, Dalbergia sissoo, Emblica officinalis,Ficus racemosa, Grewiatenax, Hibiscus rosa-sinensis, Lantana camara, Lactuca serriola, Leucaena leucocephala, Martynia annua, Momordica dioica, Nerium oleander, Physalis angulata, Pedalium murex, Ricinus communis, Solanum xanthocarpum, Thevetia peruviana, Thespesia populnea, Tribulus terrestris, Tecomella undulata, Ziziphus mauritiana* are found as ethnomedicinal plants helpful in curing many health ailments.

Endangered and threatened medicinal plants of Dang region of Rajasthan: *Commiphora wightii* - Guggal, *Neelumbo nucifera* - Lotus/Kamal, *Santalum album* –Chandan, *Abrus precatorius* - Gunja, *Aloe barbandensis* - Grit kumara, *Chlorophytum borivillanum* - Safed musali, *Asparagus racemosus* – Satawari, *Piper longum* – Peepil, *Withania somnifera* – Ashwagandha, *Piper betel* - Nagar Pan, *Anthocephalus kadamba* - Kadamb, *Centella asiatiaca* - Mandook parni, *Evolvulus microphyllus*-Blue flower shankh puspi, *Convolvulus microphyllus* - Shankh puspi (White), *Prosopis cineraria* - Khejari, *Eliocarpus spp.*- Rudraksh, *Clitoria ternatea* - Aparajita, *Corcorus sps.* - Bounphali,

CONSERVATION STATUS-

Plants Conservation aims to prevent plant extinction through various strategies, including protecting wild population, establishing collections in gardens, implementing education programs, controlling invasive species and supporting research and restoration efforts.The Dang region of Rajasthan, rich in biodiversity, faces challenges in conserving its medicinal plants, with traditional communities holding knowledge about their use, but facing threats from overexploitation and habitat loss, necessitating documentation and conservation efforts. These are some main factors on the basis of which ethnomedicinal plants has been lost and we need to conserve it-

1. Rich Biodiversity and Traditional Knowledge:

- The Dang region, particularly areas like Dholpur and Karauli, boasts a diverse range of plant species,

many of which are used traditionally for medicinal purposes.

- Tribal and traditional communities possess extensive knowledge about the medicinal properties of local plants, passed down through generations.
- Almost, in the Dang region, 36 plant species are used as cooling agents during summers.
- In Dang region, Dholpur people are largely dependent on their traditional healing system for their healthcare as well as of mouth their cattle and the information about herbal medicine is passed on from generation to generation from beginning to end the world.

2. Threats to Medicinal Plants:

Overexploitation: The increasing demand for medicinal plants, both locally and for commercial purposes, can lead to unsustainable harvesting and depletion of populations.

Habitat Loss and Degradation: Deforestation, urbanization, and agricultural expansion can destroy or fragment the habitats of medicinal plants, leading to their decline.

Climate Change: Climate change can also affect the distribution and abundance of medicinal plants, making them more vulnerable.

3. Conservation Efforts and Challenges:

Documentation and Research: Ethnobotanical studies are crucial for documenting the traditional knowledge and medicinal uses of plants, which can inform conservation strategies.

Conservation Areas: Establishing protected areas and medicinal plant conservation areas (MPCAs) can help safeguard valuable plant species and their habitats.

Sustainable Harvesting Practices: Promoting sustainable harvesting methods and community-based conservation initiatives can help ensure the long-term viability of medicinal plant populations.

Cultivation and Propagation: Cultivating medicinal plants can help reduce pressure on wild populations and provide a sustainable source of raw materials.

Challenges: Lack of funding, infrastructure, and trained personnel can hinder conservation efforts.

Need for Collaboration: Collaboration between researchers, local communities, government agencies, and NGOs is essential for effective conservation.

Suggested strategic plans for ethnomedicinal plants conservation –

- Promote sustainable development.
- Enhance implementation through participatory planning, government and society rules and regulations.
- Reduce the direct pressure on ethnobotanical plants.
- Improve the medicinal plants by safeguarding various biodiversity.

CONCLUSION

Loss of ethnomedicinal plants may trigger large unpredictable change in an ecosystem. There is an urgent need to conserve the ethnomedicinal plants before the treasure in lost. The conservation of species in their natural environment i.e. *in-situ* conservation is considered as the most appropriate way of conserving in the biodiversity. Foremost our research highlights the urgent need for the preservation of dang region of Rajasthan ethnobotanical knowledge.

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