



ETHNOMEDICINAL INVESTIGATION OF PLANTS USED FOR THE TREATMENT OF VARIOUS SKIN DISEASES BY LOCAL FOLKS IN AND AROUND PILIBHIT TIGER RESERVE, UTTAR PRADESH, INDIA

Deepak Singh* and Alok Kumar Khare

Department of Botany, Bareilly College, Bareilly (U.P.), India

Abstract

Pilibhit Tiger Reserve is located in the Pilibhit and Lakhimpur Kheri districts (Latitudes 28°8'-28°50'N and longitude 79°53'02"-81°18'03"E) amidst the dense forests of Himalayan tarai zone of Uttar Pradesh. Since a long time several tribal communities are settled in the forest areas. The major among them are Tharus and Bengali's. These tribal communities are totally dependent on local plants for their sustenance. Keeping in view, an ethnobotanical study was made on the medicinal plants used for the treatment of skin problems frequently occurring in the tribals living around Pilibhit Tiger Reserve, Pilibhit. The Study revealed 30 species of plants belonging to 27 genera of 26 families, used to treat various skin problems. It was also found that a few species are over exploited and have reached vulnerable to rare status. So there is urgent need to write ethnobotanical information before some of these species get extinct from the area. Continuous and sincere efforts are required to conserve these species and to collect detailed ethnic information which will provide source for further scientific investigations.

Key words: Ethnomedicinal Plants, Skin Diseases, Pilibhit Tiger Reserve.

Introduction

Since ancient time mankind has been dependent on plant for food, fodder, fiber and uses knowledge to signify relationship between human and plants in his immediate surrounding has been passed on through generations (Dam *et al.*, 1998). Traditional knowledge of plants always played a key role in the health systems of any country (Singh and Beena Kumari, 2019). More than 8000 plant species are documented as medicinal plants and are being used by various rich heritage of knowledge on plant based drugs both for use in preventive and curative medicines (Singh, 2009) and (Nigam and Mourya, 2013). Ethnobotany, therefore, is probably the most important branch to know the relationship between plants and the people. It provide us opportunities to collect the information from the tribes and gives valuable information, relate the past and present relationship between plant and human being.

The study area, Pilibhit Tiger Reserve comes under Bareilly circle which is a part of western area of forest department Uttar Pradesh. The Tiger Reserve falls in the catchments area of Sarada river water based irrigation

**Author for correspondence* : E-mail: deepumay1984@gmail.com

system. The area of the Tiger Reserve also play a vital role in the maintenance of the water and climatic regime of the region which in turn is vital for agriculture and other allied activities. The record of the average rainfall value is 612.59mm. Millions of people, Living in Pilibhit Tiger Reserve (PTR) region use medicinal plants in different ways. More than half million practioners in Indian medicine system use medicinal plants for curative applications. These medicinal plants benefited to the people, living in the regions where modern facilities and techniques are not available, particularly in tribal areas. Pilibhit Tiger Reserve, Pilibhit Uttar Pradesh not only has large tribal population of India but also have rich diversity in the life style of tribal communities such as cultural tradition, social and religious faith, language and speech etc. The main tribe of PTR are Tharu and Bengali. Among these tribes, Tharu tribe is the pursuit of therapeutic uses of plants. In the area of Pilibhit Tiger Reserve majority of the population is scheduled tribes. These tribes lives in forest area and depend on forest resources for food, fodder, fiber, medicine, gum etc. Survey of the literature reveals that pioneer work on the ethnobotanical aspects of Tharu Tribe in Uttar Pradesh have been carried out by Singh *et al.*, (1979); Maheshwari *et al.*, (1981) and

Singh, (1994); Joseph *et al.*, (2003). However, there are certain gaps in the existing status of our knowledge on the ethnobotany of PTR that needs to be filled. The present study was, therefore, undertaken with an intention to find out the unknown ethnobotanical facts of Tribes of PTR.

Material and Methods

Study Area

The study area, Pilibhit Tiger Reserve, Pilibhit, is the third Tiger Reserve in Uttar Pradesh being located in Himalayan tarai belt of the state. Pilibhit Tiger Reserve lies north of tropic of cancer between the latitudes 28° 18' and 28° 50' N and longitude 79°53'02" and 81°18'03"E. The total area of reserve forest is 73024.98 hectares out of which 60279.80 hectares is the core and rest 12745.18 hac is the buffer. The Tiger Reserve comprises with the five ranges *viz.*, Mala, Mahof, Barahi, Haripur and Deoria and part of Khutar range. The headquarters of Tiger Reserve is located at Pilibhit district. The tarai region with its characteristics complex of sal forest, tall grass lands and swamps maintained by periodic flooding, is one of the most threatened ecosystem in India. The temperature ranges between minimum of 5°C (average) in winter to maximum temperature of up to 40-44°C in peak summer. The record of the average annual rainfall

value is 612.59 mm.

Methodology

Regular surveys were conducted during the period from Dec. 2016 to Feb. 2018 to collect ethnobotanical

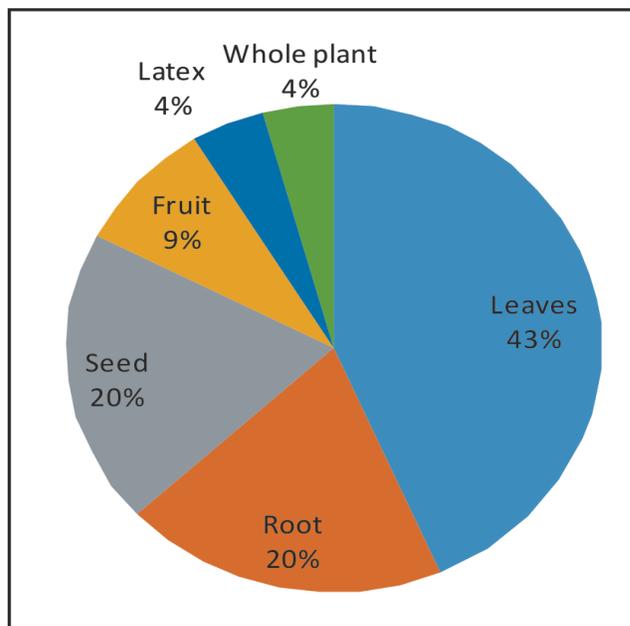


Fig. 1: Percentage of different plant's part used to treat skin disorders by the tribes in Pilibhit Tiger Reserve.



Photo Plate: A- *Cannabis sativa* B- *Lawsonia inermis* C- *Zizipus mauritiana* D- *Ficus glomerata* E- *Euphorbia hirta* F- Jivan Ram (Tharu Ethnobotanical practitioner) with Deepak Singh.

Table 1: Description of medicinal plants used by tribal of Pilibhit Tiger Reserve, Pilibhit, Uttar Pradesh, India.

S. No.	Botanical Name	Common Name	Family	Part Used	Habit of Plant	Medicinal Uses
1	<i>Acacia concinna</i>	Shikakai	Fabaceae	Leaf, Bark, Fruit	Shrub	Dandruff
2	<i>Achyranthes aspera</i>	Latjeera	Achyranthaceae	Root, leaves	Herb	Ringworm, pimples
3	<i>Aloe vera</i>	Ghratkumari	Xanthorrhoeaceae	Leaves	Herb	Dandruff
4	<i>Andrographis paniculata</i>	Kalmegh	Acanthaceae	Root	Herb	Itching, skin rashes
5	<i>Annona squamosa</i>	Sitaphal	Annonaceae	Leaves	Tree / Shrub	Eczema
6	<i>Argemone mexicana</i>	Pilikateli	Papaveraceae	Root, latex	Herb	Wound, leprosy
7	<i>Azadirachta indica</i>	Neem	Meliaceae	Leaves	Tree	Pimples, leprosy
8	<i>Bacopa monnieri</i>	Brahmi	Plantaginaceae	Whole plant	Herb	Leprosy
9	<i>Bauhinia variegata</i>	Kachanar	Fabaceae	Bark	Tree	Skin ulcer
10	<i>Buchanania lanzan</i>	Chironji	Anacardiaceae	Seed	Tree	Pimples, prickly heat
11	<i>Butea frondosa</i>	Palash	Fabaceae	Seed	Tree	Leprosy
12	<i>Calotropis gigantea</i>	Madar	Asclepiadaceae	Leaves	Shrub	Boils
13	<i>Cannabis sativa</i>	Bhang	Cannabaceae	Leaves, seed	Herb	Wound, dandruff
14	<i>Carissa carandas</i>	Karonda	Apocynaceae	Stem, root	Shrub	Leprosy, eczema
15	<i>Cassia fistula</i>	Amaltas	Caesalpinaceae	Leaves	Tree	Ringworm, itchy
16	<i>Cassia occidentalis</i>	Kasoundi	Caesalpinaceae	Seed	Shrub	Ringworm
17	<i>Cassia tora</i>	Chakoda	Caesalpinaceae	Leaves	Herb	Herpes, eczema
18	<i>Celastrus paniculatus</i>	Malkangani	Celastraceae	Seed	Shrub	Leprosy
19	<i>Citrullus colocynthis</i>	Indrayan	Cucurbitaceae	Leaves	Herb	Wound
20	<i>Clitoria ternatea</i>	Aprajita	Fabaceae	Root	Herb	Leprosy
21	<i>Cordia macleodii</i>	Dahiman	Boraginaceae	Stem	Tree	Wound
22	<i>Curculigo orchoides</i>	Kali musli	Hypoxidaceae	Rhizome	Herb	Wound
23	<i>Curcuma longa</i>	Haldi	Zingiberaceae	Root	Herb	Wound
24	<i>Cynodon dactylon</i>	Doob	Poaceae	Whole plant	Herb	Wound
25	<i>Datura stramonium</i>	Dhatura	Solanaceae	Leaves	Herb	Skin burn
26	<i>Eclipta alba</i>	Bhringraj	Asteraceae	Whole plant	Herb	Eczema, anti-aging
27	<i>Eucalyptus globules</i>	Eucalyptus	Myrtaceae	Leaves	Tree	Inflammation
28	<i>Euphorbia hirta</i>	Dudhi	Euphorbiaceae	Plant latex	Herb	Cuts, wound, boils
29	<i>Feronia limonia</i>	Kiatha	Rutaceae	Seed	Tree	Eczema, scabies
30	<i>Ficus bengalensis</i>	Bargad	Moraceae	Leaves	Tree	Skin burn
31	<i>Ficus glomerata</i>	Goolar	Moraceae	Fruit	Tree	Wound
32	<i>Grewia optiva</i>	Dhaman	Moraceae	Root	Tree	Wound
33	<i>Helicteres isora</i>	Marod phalli	Sterculiaceae	Root	Shrub	Wound
34	<i>Lawsonia inermis</i>	Mehndi	Lythraceae	Leaves, flower	Shrub	Skin burn, inflammation
35	<i>Luffa operculata</i>	Lufa, wild lufa	Cucurbitaceae	Fruit	Herb	Nasal disorder
36	<i>Mirabilis jalapa</i>	Gulabas	Nyctaginaceae	Root	Herb	Skin allergy
37	<i>Mesua ferrea</i>	Nag champa	Guttiferae	Leaves, bark	Tree	Skin burning
38	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae	Leaves	Herb	Ringworm
39	<i>Portulaca oleracea</i>	Pig weed	Portulacaceae	Leaves	Herb	Inflammation, eczema
40	<i>Sapinadus mukorossi</i>	Soapberry	Sapindaceae	Fruit	Tree	Skin cleaning
41	<i>Shorea robusta</i>	Sal	Dipercarpaceae	Stem	Tree	Wound
42	<i>Tamarindus indica</i>	Imli, tamarind	Fabaceae	Fruit, seed	Tree	Skin rashes, cosmetics
43	<i>Tribulus terrestris</i>	Gokhru	Zygophylloceae	Leaves	Herb	Wound
44	<i>Vetiveria zizanoides</i>	Khus	Graminae/poaceae	Root	Herb	Skin burning, skin ulcer
45	<i>Vitex negundo</i>	Nirgundi	Verbenaceae	Leaves	Shrub	Wound
46	<i>Zizipus mauritiana</i>	Ber	Rhamnaceae	Leaves	Shrub	Wound

information. The surveys were conducted in different ranges of Pilibhit Tiger Reserve, Pilibhit such as Mala, Barahi, Haripur range. The ethnobotanical data were collected from tribal people living in around PTR. The collected plants were identified with the help of local people, sample specimens and citing the available literatures and flora, Duthie, (1903-1929), Kanjilal, (1933). A Herbarium was prepared as per standard protocol, described by Varghese, (1996) and Dwivedi and Pandey, (1992). During the interviews with tribal and village medicine man local names of the plants, medicinal values, useful plant parts and mode of application were recorded. A check list was prepared and presented alphabetically in the table 1.

Result and Discussion

Total 46 medicinal plant species were recorded in present study which are distributed across 43 genera of 36 families used by local tribal communities of the Pilibhit Tiger Reserve. The study revealed that among the traditional healers of the study area, Fabaceae family is the most dominating family with 5 plant species followed by Caesalpinaceae and Moraceae with 3 plant species each, Cucurbitaceae and Poaceae with 2 two plant species each, rest other families represented by single plant species. Out of total 46 plant species, the highest number of species belongs to herbs (21 species) followed by tree (16 species) and shrubs (09 species). As per plant used by the tribal the highest number of spices is harvested for leaves (20 species), followed by roots and seeds (09 species each), fruit (4 species), latex (02 species), whole plant (02 species).

During the study it was found that people are undecided to show up their traditional knowledge because this knowledge provides them identity in the society and hence they do not want to share with others. It was also found that their knowledge has been only transmitted from one generation to the next and at the each level of transmittance a little of it has been lost. The tribal themselves say that in comparison to them their ancestor knew much more. It was noticed that the tribal are much

worried about the over exploitation of medicinal plants in Pilibhit Tiger Reserve.

Acknowledgement

Authors are very thankful to the tribal people, living in P.T.R. area for sharing their significant information and support in the collection of medicinal plants and data.

References

- Dam, P.K., P. Yadav, T. Ramnath and B.K. Tyagi (1998). Constraints in the climatologically changing tharadeser. National Environment.
- Duthie, J.F. (1903-1929). Flora of upper Gangetic plain and of the adjacent Siwalik and sub Himalayan tracts (Ed.1), 3 Vol., Calcutta.
- Dwivedi, S.N. and A. Pandey (1992). Ethnobotanical studies on wild and indigenous species of vindhyaplatean. *Herbaceous flora J. Econ Tax Bot Addi.*, **1(10)**: 143-150.
- Joseph, K.M., A.K. Khare and P.B. Awasthi (2003). Ethnobotanical studies on the Tharu Tribe at Dudhwa Tiger Reserve I. Ethnomedicinal Plant.
- Kanjilal, P.C. (1933). Forest Pilibhit, Oudha, Gorakhpur and Bundelkhand (Government printing press Allahabad).
- Maheshwari, J.K., K.K. Singh and S. Saha (1981). *Ethnomedicinal uses of Plant by the Tharus of Kheri Dt. U.P. Indian For.*, **105(7)**.
- Nigam, G. and S.K. Mourya (2013). Folklore claims on some medicinal plants used in Jhansi district, Uttar Pradesh by Rawat and Sahariya tribes. *Journal of Environment Social Science Research.*, 30-33.
- Singh, K.K. (1994). Ethnobotanical heritage of the Tharu tribe of U.P. India, NBRI, Lucknow.
- Singh, A. and P.K. Singh (2009). An Ethnobotanical study of medicinal plants in Chandauli District of Uttar Pradesh, India. *Journal of Ethnopharmacology.*, **121(2)**: 324-329.
- Singh, K.K., H.S. Bhate and J.K. Maheshwari (1979). Survey of biological activities of economic plants of Kheri forest, U.P. India, NBRI, Lucknow.
- Singh, A. and B. Kumari (2019). Ethnobotany of medi-flora of Bilaspur tahsil in Rampur district, Uttar Pradesh.
- Varghese, E. (1996). Applied ethnobotany, a case study among the Khairas of central India, Deep Pub New Dehli.