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An Overview: On Folk Uses of Floral Diversity at Kailadevi Wildlie Sanctuary, Karauli, Rajasthan

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ABSTRACT

Present study was conducted in Kailadevi Wildlife Sanctuary (KWLS) to study about the perennial vegetation and their uses by the local people in and around the Sanctuary area. It was concluded that around 48 plant species are edible used for different purposes like vegetables, fruits and other uses. Plants of different varieties are used or the 21 medicinal properties. 7 plant species are used or timber and other wood works of agricultural practices. Phenology of some plants is used as indicator of particular weather condition by the locals. Several plants are used for this purpose like Diospyros melanoxylon- trees with scanty, unripe and small fruit in abundance in area is a signal for good rains.

Keywords: *Folk Uses, Conservation, Medicines, Edible.*

INTRODUCTION

We see beauty of nature in her diverse creation of plants, animals and microbes amongst the living domain apart from the non-living creation of the nature. Biodiversity in fact is a complete and balanced network of different species which are mutually dependant on each other. The human beings are completely dependent on biodiversity for the supply of food, Fuel, fiber, shelter and Medicine. India is a very vast country with varied edaphic condition and characteristics geographical situation having latitudinal, longitudinal and altitudinal zonations. This result in a great variety of climates and immense types of habitat, supporting the array of vegetation pattern and floristic diversity. Rajasthan is quite rich in plant diversity probably due to presence of different variable and diversified climatic, physiographic, edaphic and habitat conditions.

The captivating natural surroundings of the forest of Ranthambore and the tranquility here are profoundly relaxing and the delight for the mind. The blend of the dense green region and the sparse shrubbery in the desert region makes this land a unique site for nature lovers. It is estimated that there are nearly 300 species of vegetation found in and around the Ranthambore reserve forest.

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The area in the proximity of the Thar Desert gets very scant rainfall so the plant life here consists mainly of dry deciduous type.

The most dominant plant of all the plant species of the KWLS is the 'Dhok' (*Anogeissus pendula*). This tropical tree constitutes of more than three-fourth of the vegetation of this forest. This tree has the height of up to 15 meters and its shrubs and fruits constitute major foods for the animals such as Deer, Antelope and Nilgai. The Dhok tree can also grow in the shallow soil but with limited growth and small in height.

Apart from the Dhok tree, the other prime trees of this sanctuary are Banyan (*Ficus bengalensis*), Pipal (*Ficus religiosa*) and Neem (*Azadirachta indiaca*). These trees have religious as well as medicinal values. The fruit trees which are prominently found are the Mango (*Magnifera indica*), Tamarind (*Tamarindicus indica*) also known as Imli, Jamun (*Syzygium cumini*) also known as the Indian blackberry and Ber (*Zizyphus mauritania*). The Chhila (*Butea monosperma*), also known as the flame of the forest due to its bright orange color, enhance the beauty of the landscape here and offers fabulous scene for nature lovers.

Ranthambore Tiger Reserve (RTR) comprises Ranthambore National Park as well as the adjacent Sawai Mansingh and Keladevi wildlife Sanctuaries. This has been resulted that animals are moving from highly protected core areas into the adjacent Kailadevi Wildlife Sanctaury (KWLS). Historically KWLS supported Tigers but its forests were extensively exploited due to lack of conservation. It was declared a Wildlife sanctuary in 1983 and in 1991 it was included in the Tiger Project, Ranthambore (Kothari et al., 1997). This part of Rajasthan is covered by dry deciduous type of forest. This forest type sheltered to some of medicinal, timber yielding, wild edible, ornamental plant species in terms of herbs, shrubs, climbers and trees. Every biogeographic region of India contains 50 % of ethno medicinal plants used by the local peoples and doctors, scientists and practitioners use a few of them (Bori et al., 2017). Present study focuses on the floristic diversity of the sanctuary with special reference to different uses of plants viz. Medicinal, timber yielding, Edible and other uses etc. It was undertaken in the view of the importance of vegetation studies. The wild life sanctuary play a vital role in ex-situ conservation and multiplication of germ-plasm. The primary objective of this concept is to save biodiversity. The study is based on extensive fieldwork supporting qualitative assessment of floral diversity.

STUDY AREA:

KWLS (Karauli District, Rajasthan state) lies between latitude 26^0 2' N and 26^0 21' N and Longitude 76^0 37' E to 77^0 13' E spanning 672. 82 Km^2 (Pathak, 2009). Climate is semi-arid with average annual rainfall of 750-800 mm, about 90 % falling during the July-September (Monsoon season), with temperature o 2-15^0C in winters (November-February) and exceeding 47^0C in summer with frequent droughts (Forest Department, Rajasthan, 2015). KWLS forms the northern boundary of the Ranthambore National Park (RNP) separated by the Chambal River corridor that forms an important route for animal movements between the protected areas (Throat & Gurjjer, 2010; & Forest Department, Rajasthan, 2015).

The KWLS is situated at the confluence of the Aravalli hills and Vindhyan Hills system (Kothari et al., 1997) comprising plateaus (dang) with parallel ridges forming the deep gorges called khoh. These characters are symbol of rich orest and soil, high moisture and low temperature. The main Khoh in Kailadevi are Nimbhera, Kudka, Chiarmul, Ghanteshwar, Jail and Chidi (Das, 2011). There are 5-8 km wide ravines towards the Chambal River which are 35-50 mtr deep (Throat & Gurjjer, 2010). GIS analysis reveals that 148.28 Km^2 is Dhok forest, 98.8 km^2 is encroached human habitation and 34.24 km^2 is farmland. These forests protect the watershed of Banas and Chambal rivers. (Throat & Gurjjer, 2010; & Forest Department, Rajasthan, 2015).

Vegetative cover in KWLS is relatively very sparse due to lack of conservation practices. Dhok (*Anogeissus pendula*) is the dominant tree, constituting 80 per cent of vegetation cover mainly in all the dry deciduous forests. Forest are adjacent to the villages and the are reduced to stunted shrubs through anthropogenic pressures by locals (Forest Department, Rajasthan, 2015; & Thorat & Gurjjer, 2010). Faunal diversity includes large predators such as Leopard (*Panthera pardus*) and herbivorous prey populations including various deer species like Sambhar, Cheetal etc. For management purposes, KWLS is divided into four Ranges: Kela Devi, Karanpur, Mandrail and Nainiyaki (Forest Department, Rajasthan, 2015). Rock paintings found in the forest areas reveal human occupation of Kailadevi Forest since prehistoric times. Today, KWLS hosts pastoral and agricultural communities substantially dependent on forest resources for their livelihoods. Currently, there are 66 villages in KWLS, each grazing a specific forest area known as a 'kankad'. During and immediately after the monsoon (July–October), people from nearby villages move livestock into KWLS to exploit fresh fodder, forming cattle camps known as'khirkadi' (Forest Department, Ranthambhore, 2015). Villages inside and peripheral to the forest exert substantial biotic pressure through extraction of timber, fodder and other resources. Wildlife tourism is almost absent due to sparse charismatic fauna and tourism facilities, though many pilgrims visit temples in KWLS (Rasal et al., 2021).

Fig. 1: Satellite view of Keladevi Wild Life Sanctuary

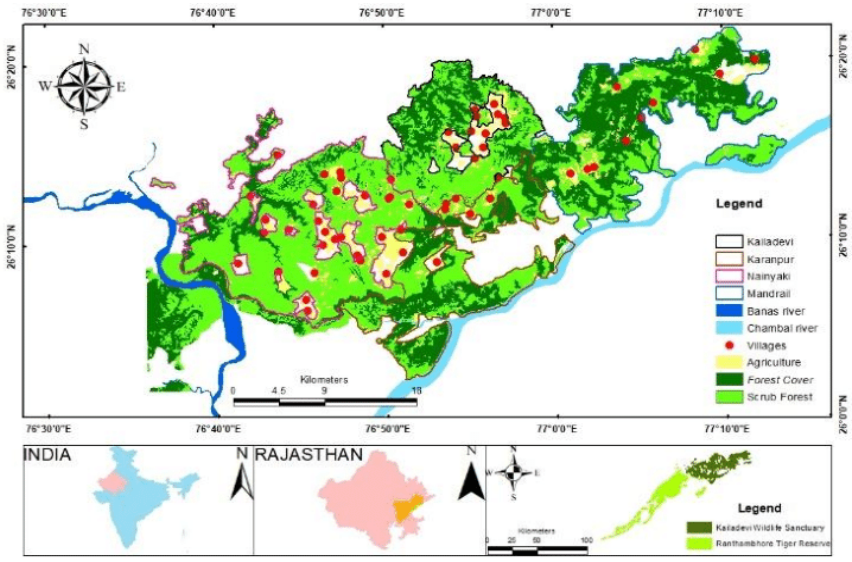

Fig: 2 Map of Kailadevi Wildlife Sanctuary, Rajasthan showing the villages inside the sanctuary

I. EDIBLE PLANTS

The edible fruits used by them for eating purposes are as follows

S.No.	Botanical name	Local name	Family Name	Plant Used
A	**Wild Plants**			
1.	*Aegle marmelos* (L.)cor	Bel	Rutaceae	The pulp of ripe fruit
2.	*Buchanania lanzan sprenge*	Char	Anacardiaceae	Fruits
3.	*Coccinia granadis* (L.) Loc	Kundru	Cucurbitaceae	Fruits
4.	*Emblica officinalis* (H.) Loc	Amla	Euphorbiaceae	Fruits
5.	*Ficus raumosa* L.	Umar	Moraceae	Ripe fruits
6.	*Ficus religiosa* Linn.	Pipal	Moraceae	Ripe fruits
7.	*Ipomea acquatica* forsk	Latapat	Convolvulaceae	Leaves and young twig
8.	*Tamarindus indica* H.	Imli	Convolvulaceae	Fruits
9.	*Zizyphus mauritiana*	Jangli ber	Rhamnaceae	Ripe Fruits
10.	*Solanum nigrum* Linn.	Makoya	Scanaceae	Ripe Fruits
11.	*Bauhinia variegeta* Linn.	Kachnar	Caesalpiniaceae	Flower
12.	*Ficus bengalensis* H.	Bara	Moraceae	Ripe Fruts
13.	*Diospyros melanxylon* Buch	Tendu	Ebenaceae	Ripe Fruits
14.	*Madhuca indica* gamel	Mahua	Sapotaceae	Flower (fresh & dried)
15.	*Syzygium cumini* (L) Skells	Jamun	Myrtaceae	Ripe Fruits
16.	*Semecarpusanana cordinam* L.F.	Bhilama	Anacardiaceae	Ripe Fruits
17.	*Dendrocalamus strictus* Mess	Bans	Poaceae	New shoots
18.	*Feronia limonia* Linn	Khaitha	Rutaceae	Fruits
II	**Cultivated Plants**			
A.	**Cereals, Pulses, Pseudocereals**			
19.	*Sorghum vulgare*	Jawar	Poaceae	Seeds
20.	*Vigna radiate*	Mung	Fabaceae	Seeds
21.	*Zea mays* h.	Bhutta	Fabaceae	Seeds
22.	*Cajanus cajan* (h)Millsp	Arhar	Fabaceae	Seeds
23.	*Cicer arietinum* h.	Chana	Fabaceae	Seeds
24.	*Hordeum vulgare* L.	Jau	Poaceae	Seeds
25.	*Lens culinaris* Mecdic	Masuri	Fabaceae	Seeds
26.	*Pisum sativum*	Matar	Fabaceae	Seeds
27.	*Triticum aestivum*	Genhu	Fabaceae	Seeds
B.	**Vegetables**			
28.	*Barsella alba* h.	Poi	Basellaceae	Leaves & Stems
29.	*Colocasia esculenta*	Glauia/Ruia	Araceae	Rhizomes
30.	*Abelmoschus esculentum*	Bhindi	Malvaceae	Fruits
31.	*Brassica oleracea* (I.)	Gobhi	Brassicaceae	Flower
32.	*Nelubium mucifera*	Kamal	Nympheaceae	Rhizomes
33.	*Cucurbita maxima* Duch	Kaddu	Cucurbetaceae	Fruits
34.	*Dolichos lab lab*	Sem	Fabaceae	Fruits & Seeds
35.	*Luffa acutangula* (l) Roxb.	Taroi	Cucurbetaceae	Fruits
36.	*Luffa cylindrical* (l) Roun	Rerna	Cucurbetaceae	Fruits
37.	*Solanum tuberosum* (L)	Alu	Solanaceae	Root tubers
38.	*Solanum melongena*	Bhatta	Solanaceae	Fruits
C.	**Fruits**			
39.	*Zizyphus mauritiana* Lank.	Bair	Rhamnaceae	Pipe-Fruits
40.	*Annona squamosa* (L)	Sitaphal	Annonaceae	Pipe-Fruits
41.	*Syzygium cumuni* (Linn)	Jamun	Myrtaceae	Fruits
42.	*Psidium guajava*(L)	Amrud	Myrtaceae	Fruits
43.	*Citrus indica*(L)	Nibu	Rutaceae	Fruits
45.	*Mangifera indica* (L)	Aam	Anacardiaceae	Fruits
D.	**Condiments**			
46.	Allium cepa (L)	Piyaz	Liliaceae	Edible bulbs
47.	*Allium sativum*	Lahsun	Liliaceae	Bulbs
48.	*Capsicum frutescens*	Mirchi	Solanaceae	Fruits

II. Medicinal Plants

The local community used the plant products as the source of medicines for curing various diseases. They possess grand ethnic knowledge about medicinal plants. Some of the plants used as the medicines are as follows-

S.No.	Disorders	Botanical Name	Local Name	Family	Parts Used
1.	Fever	*Aegle marmelos*	Bel	Rutaculaceae	Leaf juice
2.	Diarrhoea & Dysentry	*Aegle marmelos*	Bel	Rutaculaceae	Fruit Pulp
3.	Jaundice	*Asteracantha* L. *longifolia nosis*	Talmakhana	Acanthaceae	Root & Seed
4.	Snake bites	*Achyranthes* Linn	Chirchiri	Amaranthaceae	Shoot
5.	Scorpion sting	*Achyranthus aspera* Linn. *Gynandra D.C.*	Chirchiri	Amaranthaceae Solanaceae	Seed Root
6.	Skin disease	*Azadirarachta indica* Jass *Eclipta alba* Hass.	Neem Ghamira	Meliaceae Compositeae	Leaves Whole plant Leaf
7.	Gout & Lumbago	*Ficus religiosa* Linn	Pipal	Moraceae	Fruit
8.	Rheuimatism	*Astora cantha* *Longifolia* Ness	Talmakhana	Acanthaceae	Hot leaf

9.	Amoebiosis	*Acacia nilotica* wild *Ficus glomerulus* Roxb.	Babul Umar	Mimosideae Moraceae	Gum bark Milk Juice
10.	Anemia & Weakness	*Boerhhavia diffusa* Linn, *Tinospora cordifolia*	Punarba Guruj	Nyctaginaceae Menispermaceae	Root Decotion Roots
11.	Asthma & Bronchitis	*Boerhhavia diffusa* Linn. *Datura stramonium*	Punarba Dhatura	Nyctaginaceae Solanaceae	Root Seed Roots
12.	Cough	*Acacia nilotica* wild, *Adhatoda vasica* Ness,	Babul Arusa	Mimosoideae Acanthaceae	Bark Leaf juice
13.	Menstrual disorder	*Aloe vera* Linn.	Gheekanwar	Liliaceae	Leaf pulp
14.	Piles	*Aloe barbadensis* Mill *Ficus glomerata* Roxb *Solanum nigrum* Linn	Gheekanwar Umar Makoya	Liliaceae Moraceae Solanaceae	Leaf pulp Milky juice Root
15.	Headache	*Aloe vera* Linn *Brassica nigra* (Koch)	Gheekanwar Rai	Liliaceae Brassicaceae	Leaf pulp Seeds
16.	Stomach pain	*Riccinus communis*	Arandi	Euphorbiaceae	Seed oil
17.	Gastric disorders	*Terminalia chebula*, *Terminalia bellerica*, *Emblica officinalis*	Herra Bahera Amla	Combretaceae Combretaceae Euphorbeaceae	Fruits Fruits Fruits
18.	Malaria & Other fever	*Azadirachta indica*, *Ocimum sanctum* Linn.	Neem Tulsi	Miliaceae Labiateae	Leaf juice with kali mirch
19.	To increase lactation	*Asparagus racemosus* wild	Satawar	Liliaceae	Tuberous root
20.	Tooth and Gum trouble	*Calotropis procera* *Boswellia serrata* (Roxb.)	Maddur Salai	Asclepiadaceae Barseralieae	Latex with cotton used Bark decoction is used
21.	Impotency	*Semecarpus anacardium*	Bhulama	Anacardiaceae	Decoction of young plant

III. Plants for timber and wood work

Wood and timber is used in agriculture instruments including axes dranities, bel-gadies, kulharies etc. items of daily uses. (Fig. 1.15)

S.No.	Botanical Name	Local Name	Family	Parts Used
1.	*Butea monosperma* (Lamk)	Palas	Fabaceae	Wood
2.	*Madhuca indica Gmel*	Mahua	Sapotaceae	Wood
3.	*Albizzia lebbeck* (L) Bentn.	Siras	Myrtaceae	Wood
4.	*Syzygium cumini*	Jamun	Myrtaceae	Wood
5.	*Acacia nilotica* (L) wild	Babul	Mimosoideae	Wood
6.	*Adina cordifolia* (Roxb) Hook. F.	Haldu	Rubiaceae	Wood
7.	*Dalbergia sissoo*	Shishem	Fabaceae	Wood

FINDINGS AND CONCLUSION

Studies on folk uses of plants in Rajasthan were conducted by Singh and Pandey (1980), Joshi 1981, 1982, 1983, 1989 and 1995 Mishra 1983, Sharma 1990, 1991, Katewa and Arora 1997 Singh 1999 and Dadhich and Sharma 2002, Sharma and Dadhich 2002.

The present investigation is a addition to the knowledge of certain interesting plant species utilized by rural people of the locality not only for the treatment of various diseases but also for their substantial relevance as sacred groves and their association with places of worship

held sacred either in themselves or as the abode of deities.

Plants used by Ethnic System:-

Human culture has been influenced directly or indirectly by plant kingdom since prehistoric times. The tribal make use by plant (wild as well as cultivated) for food, native medicine and for variety of domestic articles. Plants are also used for fuel, dye, tannins, fiber, timber, oil, Agriculture and hunting tools, weapons and for handy craft, some plants are worshiped and used in religious ceremonies.

The locals utilize a large number of plant species of the forest flora for food, fodder, fuel, medicine, narcotics, housing, agricultural social and religious ceremonies, and musical instruments etc.

The following account of plant used by the villagers is based on notes gathered from tribal and local guide accompanying in the field. The description of plant usages has been done with following groups depending upon their uses and type of product obtained from them.

The groups are as follows

I. Edible Plant

(i) Wild

(ii) Cultivated

a- Cereals and Pulses

b- Vegetables

c- Fruits

d- Condiments

II. Medicinal Plants

III. Timber and wood work

Plants Indicating Weather:

Phenology of some plants is used as indicator of particular weather condition by the locals. Several plants are used for this purpose like *Diospyros melanoxylon*- trees with scanty, unripe and small fruit in abundance in area is a signal for good rains**.**

Dioscorea bulbifera (Jatashanakari): sprouting of fresh and wiry branches with shining delicate monsoon arrival.

Zizyphus nummularia (Jhadber): luxuriant and abundant fruiting. Bor plant provides a characteristic indication for good weather sufficient rainfall in particular year.

REFERENCES

Bori, G., & Neog, M. R. (2017). Emerging Trends in Woven Textile Fabrics Designs of Tribal Mising Community in Assam. *Int Journ. Of App and Natural Sci*., *6*(5), 7-14.

Dadhich, L. K., & Sharma, N. K. (2002). Ferns of Haduti Pateau with special reference to their medicinal uses. Biodiversity: Strategies for conservation. S.K. Agrawal Comm. Vol. (Eds.). Dadhich, L.K. and Sharma, A.P.; pp: 223-235.

Das, P. D. (2011). Politics of Participatory Conservation: A Case of Kailadevi Wildlife Sanctuary, Rajasthan, India. PhD Thesis. SOAS, University of London. (http://www.esgindia.org/ projects/kja2002/docs/wiijpamnepal.html, accessed 30 December 2019).

Joshi, P. (1981). The Forest Herbal Resources and Bhil Medicines. In: Social Forestry In Tribal Development; Tribe (Ed.). *Vyas, N.N. Spl. No. 13*, 129-136.

Joshi, P. (1982). *Journal of Economic and Taxonomic Botany. 3*, 257-266.

Joshi, P. (1983). The Herbal-Material-medica of Rajasthan Bhils: An Ethnobotanical Inventory. In: Tribal Techniques, social organization and development: Disruption and alternates. (Ed.). Chaubey; N.P. *Indian Acadamy of Social Science*, pp: 59-64.

Joshi, P. (1989). *Ethnoboatny: 1*, 77-87.

Joshi, P. (1995). Ethnobotany of the primitive tribal in Rajasthan. Jaipur: Printwell Publication.

Katewa, S. S., & Arora, A. (1997). *Ethnobotany. 9*, 48-51.

Mishra, Stan, & Billore, V. K. (1983). Some ethnobotanical floras from Banswara district *Nagarjun. 26*(10), 229-231.

Pathak, N. (Ed) (2009). Community Conserved Areas in India: A Directory. Pune: Kalpavriksh.

Kothari, A., Vania, F., Das, P., Christopher, K., & Jha, S. (eds). (1997). *Building Bridges for Conservation: Towards Joint Management of Protected Areas*

in India. Delhi: *Indian Institute of Public Administration* (IIPA).

Rasal, V., Everard, M., Khandal, D., Chandrawal, K., & Sahu, Y. K. (2021). IUCN. CH 2021. *Parks Journal-27*-1VR.en Pg. 13-24.

Singh, G. S. (1999). *Ethnobotany. 11*, 37-39.

Sharma, N. K. (1990). *Bulletin of the Botanical Survey of India*. *32*(1-4), 116-120.

Sharma, N. K. (1991). The ethnobotany of *Solanum surattense*. Burm. F. from Mukundaras (S.E. Rajasthan). *J. Eco. Tax. Bot. 15*, 613-615.

Sharma, N. K., & Dadhich, L. K. (2002). Hadauti Kshetra Ki Pramukh Vanoshdhiyan Aur Unke Upyog. SSI Publication. Kota. pp: 3-35.

Thorat, O. H., & Gurjjer, R. (2010). Identification and quantification of anthropogenic pressure on corridor between Ranthambhore National Park and Kailadevi Wildlife Sanctuary. Tiger Watch: A report submitted to Forest Department. Sherpur Khiljipur, Rajasthan: Tiger Watch.