

## ETHNOBOTANY OF KELADEVILIFE SANCTUARY (RAJASTHAN) INDIA

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### ABSTRACT

Present paper deals with ethnobotanical studies of Keladevi Sanctuary situated in the Karauli district of Rajasthan. It covers 676.82 sq. km. area. The main forests type is mixed deciduous, which is dominated by *Anogeissus pendula*, *Acacia catechu*, *Lannaea coromandelica*, *Sterculia urens*, *Butea monosperma* etc. tree species.

The main inhabitants of the area are Meena and Gurjars. Meenas are tribal and Gurjar comes in specially backward community. Inhabitants of both groups are situated in the study area and used natural floral diversity for their daily needs.

In this paper 37 plants are described which are used as food, medicines, fiber, to cure their domestic animal etc. Sacred groves present in this area are also described.

**Key Words:** Ethnobotany, Keladevi, Sanctuary, Medicine

### INTRODUCTION

The Keladevi Wildlife sanctuary is the northern extension of the Ranthambhore national park and falls within the buffer zone of the Ranthambhore. The sanctuary is located in the Karauli district of Rajasthan. It spread over a total area of 676.40sq. km. falling within the longitude 76° 37' E to 77° 13' and latitude 26° 2' N and 26° 21' N ( fig. 1). The sanctuary is bounded on the west by the river Banas and on the south by the river Chambal (Bhalla, 1999).

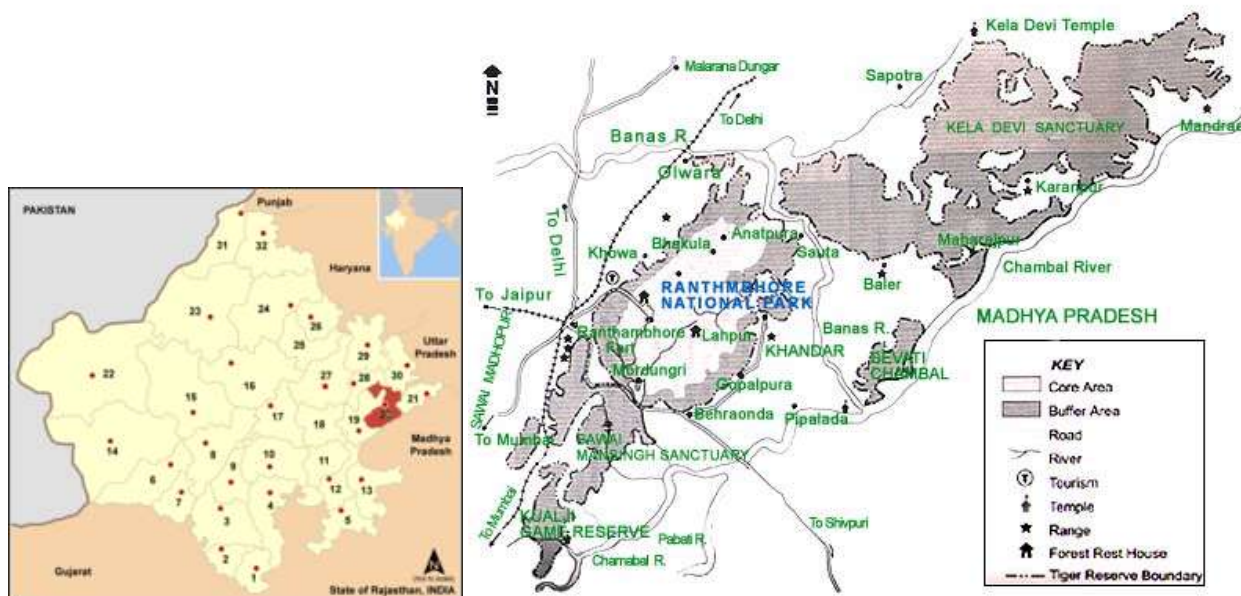


Figure 1: Map of Keladevi wildlife sanctuary

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### Previous Work

The origin and evolution of the tribal communities reflects their close association with their surrounding flora for their basic requirements (Mehta 1993). A perusal of literature revealed that a lot of work has been carried out in different parts of the state (Vyas and Gupta 1962 ; Singh and Pandey 1980, 1983 ;Joshi 1982, 1989, 1994 ; Sebastian and Bhandari 1984 ; Khandelwal 1997 ; Meena *et al.*, 2003; Jain 2013). From above published literature none of them worked on the Keladevi wildlife sanctuary. During present study authors have collected ethnobotanical information on 37 plant species.



Figure 2: Forest area of Keladevi

## MATERIALS AND METHODS

Frequent surveys were conducted in the area to carry out ethnobotanical information by enquiry, observations and participations with the folks of the area (fig. 3). Plant specimens were collected and identified with help of floras. The identification of the species were confirmed at the herbaria of Botanical Survey of India, Jodhpur (Rajasthan). Collected information are enumerated alphabetically with plants name and their uses.



A



B

Figure 3: A. Constructing a hut. B. Sowing paddy

## RESULTS AND DISCUSSION

The forest of KWS is of “tropical dry deciduous” type dominated by *Anogeissus pendula* (Dhank). The red sandy soil of the Aravalli and Vindhyan system support the *Anogeissus pendula* which has amazing fodder value for livestock. KWS vegetation is dominated by two other trees- the most valuable wood tree

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*Acacia catechu* (Khair or Kattha) and *Butea monosperma* (Dhak). At the foothills the main trees are *Acacia leucophloea*, *Butea monosperma* and the hill slopes are dominated by *Anogeissus pendula* along with secondary associates such as *Lannea coromandelica*, *Bauhinia racemosa* etc. In the top storey of hills, *Anogeissus pendula* are sparse but the thin soil layer supports *Acacia catechu* and secondary associates are *Boswellia serrata* and *Sterculia urens* which stands on the edge of hills like sentinels (fig. 2).

The moist valleys inside the sanctuary have *Ficus racemosa*, *Syzygium heyneanum*, *Mitryana parviflora* etc. The undergrowth consists of *Grewia flavescens*, *Flacourtia indica*, *Dendrocalamus stictus*, *Helicteris isora*, *Dichrostachys cineraria*, *Euphorbia neriifolia*, *Mallotus philippinensis*, *Capparis sepiaria* among other species.

Ravines around KWS are dominated mainly by shrubs or small trees such as *Salvadora oleoides*, *Dichrostachys cineraria*, *Prosopis cineraria*, *Acacia nilotica*, *Adathoda zeylanica*, *Zizyphus nummularia*, *Butea monosperma*, *Prosopis juliflora*, *Grewia tenax*, *Capparis decidua* and *C. sepiaria* (Sharma and Tiagi, 1979).

The main grasses of KWS *Aristida adscensionis*, *A. funiculata*, *Alpuda mutica* are lower grasses found in thin layers of soils.

Total 42 villages are situated in the forested area in the KWS. The natives of the area still using available plant resources for their daily needs. *Themeda quadrivalis*, *Chrysopogon fulvus*, *Heteropogon contortus* are common in the area. Some grasses have good fodder value are *Dicanthium annulatum*, *Sehima nervosum* etc. *Vetiveria zizanioides* is also found in wetlands area. Near the river banks *Saccharum munja* is commonly found.

### Enumeration of plants

The information thus collected through the tribal people included following 37 plants:

#### 1. *Abrus precatorius* L. (Fabaceae)

Crushed roots are boiled with cloves and thick paste is applied locally on boils and pimples.

The leaves are chewed and masticated to cure mouth sores. Seeds burnt and fumes are inhaled by typhoid victim. The roots and twigs are used in cough.

#### 2. *Adhatoda zeylanica* Medic. (Acanthaceae)

Leaves smeared with oil/ghee are warmed and tied locally to get relief from stomachache, bodyache, sprain, muscular pain, fracture and thorn injury. The decoction of leaves is given orally to cure asthma and cough. Flower juice is dropped in nostrils against epistaxis.

#### 3. *Aegle marmelos* (L.) Corr. (Rutaceae)

Fruit pulp or powder is eaten directly or mixed in curd or water to cure diarrhoea, dysentery, stomachache and body heat. The fruit soaked in water whole night is eaten in the morning to cure diarrhoea and constipation. Leaf ash mixed with curd and black salt is given orally to cure dysentery.

Leaf paste mixed in whey is taken to cure diarrhoea. Leaves are also chewed in diarrhoea. Root extract is taken orally to cure piles.

Leaves are offered to lord Shiva and thorn is used to ear piercing.

#### 4. *Ailanthus excelsa* Roxb. (Simarubaceae)

Inner bark of stem is crushed into paste mixed with curd thoroughly and taken in the morning to cure dysentery. The stem bark is rubbed on stone with water and given in stomachache. Infusion of bark and leaves is given as a tonic in debility after childbirth.

Leaves are used as galactagogue. Wood is used to make toys.

#### 5. *Aloe vera* (L.) Burm. f. (Liliaceae)

The plant pulp is cooked as vegetable, halwa or made into laddoes and eaten in rheumatism, muscular pain, leucorrhoea and to increase eyesight. The pulp is smeared on armpits to treat lymphodinitis.

Pulp is mixed with turmeric powder, made into poultice and tied locally for healing cuts, wounds, boils and pimples. The warmed up leaf is tied locally on boils and pimples. Turmeric powder applied on leaf is tied locally to cure bodyache.

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6. *Amaranthus spinosus* L. (Amaranthaceae)

Paste of leaves is applied locally against leech bite, centipede sting, insects bite, swelling and mixture with curd is applied to treat snake bite. The root paste is smeared as ointment on boils and pimples.

The root is ground and made into pills. Two pills are given at a time twice daily for a week to treat liver congestion and irritation in urinary duct.

Tender twigs are used as vegetable.

7. *Anogeissus pendula* Edgew. (Combretaceae)

The gum drenched in water whole night is mixed with sugar candy and powder of black pepper seeds. It is taken in the morning for constipation and mouth sores.

Wood is used to make handle of agricultural implements.

8. *Argemone mexicana* L. (Papaveraceae)

The latex is rubbed on teeth in dental caries, boils and pimples and applied in eyes to cure conjunctivitis. Decoction of stem and leaves is given thrice a day to treat gastralgia, asthma and cough. Crushed fresh leaves are applied for healing ulcers. The seeds are crushed into paste, mixed with mustard or sesame oil and applied locally on scabies, boils and pimples.

Roasted seeds are mixed with salt and eaten to cure cough. Oil of seeds is applied by cotton plug to get relief in molar ache and scabies. Paste of seeds is smeared over fractured bone or seed powder mixed with oil is massaged on affected area. When body parts swell following seed paste application confirms bone fracture.

9. *Asparagus racemosus* Willd. (Liliaceae)

Root powder is taken with milk as lactagogue and to increase sexual potentiality.

The root is eaten to cure stomachache. Roots and leaves are crushed, boiled and applied locally on boils. Paste of tuberous roots is taken with water or milk as growth tonic, to increase sexual potentiality and decrease chances of abortion, to improve digestion and stimulate appetite, to treat convulsions and chronic dyspepsia. The roots are cut into pieces, gruel is prepared with rice and taken by the patient of jaundice and gall stone. Roots are used to make vegetables and eaten unripe also.

10. *Bauhinia racemosa* Lam. (Caesalpinaceae)

Paste of flowers is mixed with water to make drink that cures diarrhoea and dysentery. Fibre is obtained from stem bark.

11. *Benincasa hispida* (Thumb.) Cong. (Cucurbitaceae)

Paste of seeds is applied locally on fractured bone. Seeds are rubbed on stone and used to relieve mouth sores. A cut is made into fruit and filled with wheat (grains), after two days fruit is cut into pieces and dried with grains. These dried pieces and grains are ground and roasted in ghee, mixed with sugar, made into laddoes and eaten in summers. It is very effective against body heat and prevents sunstroke. Sap obtained by rubbing fruit stalk on stone is applied locally against scorpion sting.

12. *Bombax ceiba* L. (Bombacaceae)

The tender twig is used as toothbrush to cure mumps. Stem bark is used for making laddoes and eaten as medicine for body pain. Powdered flowers mixed with honey are given in menorrhagia. The thorn is rubbed on stone with unboiled milk, made into paste and applied as ointment on the face to get rid from acne. Thorn is chewed with stem bark of *Cordia gharaf* to cure mouth sores.

The roots powdered with those of *Chlorophytum*, *Capparis sepiaria* and fruits of *Petalium murex* are taken with water as tonic to calm body heat. Root bark extract is given as tonic in case of sexual debility and also as nervine tonic. Powdered gum is taken orally in diarrhoea, dysentery and diabetes.

Root powder mixed with sugarcandy and milk is taken to avoid impotency.

Thorn is chewed to redden lips. Fibre obtained from the fruits and unripe fruits are cooked as vegetable.

13. *Capparis deciddua* (Forsk.) Edgew. (Capparidaceae)

Juvenile leaves are rubbed against ringworm. They are chewed to relieve toothache and diarrhoea or kept between molars with a clove to cure ache. The juvenile leaves are crushed into paste with root of *Capparis*



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sepiaria and applied on styes. They are made into paste with cloves and mixed with pounded wood of Eucalyptus and smeared as ointment on boils.

Paste of leaves is applied on swellings, boils and pimples or paste of leaves with cloves is applied on boils, pimples and kept between molars to cure ache.

Fruits are used to make pickle.

14. *Carica papaya* L. (Caricaceae)

Root paste is mixed in water or cow milk and taken for 15 days to treat stone.

15. *Cassia fistula* L. (Caesalpiniaceae)

Leaf juice is given orally, and also massaged on paralysed part of patient. The decoction of stem bark is used to gargle in throat infection. Extract of stem bark and leaves are given orally to patients of dyspepsia, pneumonia, bronchitis and liver congestion. Fresh or dried fruit pulp is used as laxative.

Wood is very durable and used to make pestle. Flowers used to make vegetables.

16. *Cassia tora* L. (Caesalpiniaceae)

Young leaves are eaten raw to avoid throat infection and to increase vision. Leaves are cooked as vegetable and eaten by the victim of night blindness, cold and blood pressure or dried leaves are powdered, cooked with pearl millet and whey and eaten by the tribal and traditional communities against cold in winters or the pods or seeds are cooked as vegetable and eaten for same purpose. The seeds are crushed into paste, mixed in water and are given 1-2 spoons daily to children against asthma.

17. *Citrullus colocynthis* (L.) Schard. (Cucurbitaceae)

Crushed fruits are applied on footsores. The powder of fruit is mixed with sugarcandy and given as remedy for stomachache, diarrhoea and loss of appetite. The fruit is crushed with fruit of Terminalia chebula and applied locally on foot sores and eczema. Fruit is cut into pieces and mixed with dried ginger powder, salt and harad and put in an earthen pot for 10-12 days, after drying it is powdered and taken orally to avoid indigestion. A person walks keeping fruit in shoe till bitter taste develops in mouth to cure heatstroke. Pulp of mature fruit is mixed with water and sugar and given orally to patients of constipation, fever and intestinal worms.

18. *Commiphora wightii* (Arm.) Bhandari (Bursaraceae)

Decoction of leaves is taken orally by rheumatic patient. Resin obtained from stem is made into paste and applied locally to cure ulcers, boils and pimples. To cure whooping cough, resin is given with candy. Resin is boiled in water and used to gargle in case of weak spongy gums, toothache, pyorrhoea, pharyngitis and tonsils.

19. *Convolvulus microphyllus* (Roth) Siem ( Convolvulaceae)

Paste of leaf and flower is taken as tonic.

20. *Corchorus depressus* (L.) Stocks (Tiliaceae)

The plant dried in shade is powdered and taken with candy and whey, due to cooling properties to calm body heat. Ladies take it to control bleeding in menorrhagia.

21. *Cordia dichotoma* Forst. f. (Cordiaceae)

Ash of mature leaves is mixed with coconut, mustard or sesame oil and used as ointment on inflamed skin for early healing. Leaves are made into paste and mixed with curd or whey and given orally to cure diarrhoea in children. Leaves smeared with oil or ghee, warmed and tied to relieve muscular pain.

Decoction of bark is taken to cure urinal inflammation. The ripe fruits are eaten raw to treat mouth sores.

Unripe fruits used to make vegetables and for making pickle.

22. *Dendrocalamus strictus* (Roxb.) Nees (Poaceae)

Decoction of leaves is taken orally to treat cough and decoction of plant with sugar is given orally in fever. The culm is rubbed on stone with iron and applied on sting injury caused by honey bee and wasp.

Culm is used to make agricultural implements and domestic articles.

23. *Euphorbia hirta* L. (Euphorbiaceae)

10-20 gm leaves are crushed into paste, mixed in whey and given orally in diarrhoea. Latex is applied on cuts to check bleeding. 1-2 drops of latex is put in batasha and given to cure diarrhoea. Plant extract is

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mixed with whey and taken in diarrhoea. Plant extract is mixed with 2 kg. boiled gram pulse and equal amount of honey and taken by women folk to cure leucorrhoea. Decoction of plant is taken as a remedy for colic pain, dysentery, asthma and bronchial infection.

24. *Ficus carica* L. (Moraceae)

Latex is applied locally for 4-5 days to cure ringworm. It is mixed with ash of coconut and applied on leucoderma.

Ripe fruits are eaten.

25. *Ficus racemosa* L. (Moraceae)

The latex is applied locally on boils, footsores, toothache, cuts and wounds to check bleeding. It is mixed with mother's milk in equal quantity and given orally to infants as an antiemetic. Boiled fruits given to cattle for easy delivery.

Ripe fruits are eaten.

26. *Ficus religiosa* L. (Moraceae)

2½ leaves are mixed with 2½ leaves of neem, kept in a betle leaf and given for chewing to jaundice patient as remedy.

Ripe fruits are eaten. Tree is worshipped by villagers.

27. *Holoptelia integrifolia* (Roxb.) Planch. (Ulmaceae)

Leaves are crushed with bulblets of garlic, mixed with Hukka's water and applied against ringworm.

Ripe fruits are eaten. Wood is used in hut construction.

28. *Leptadenia pyrotechnica* (Forsk.) Decne. (Asclepiadaceae)

The latex or leaf paste is applied over thorn injury for thorn removal. The pods are cooked as vegetable or boiled in whey and eaten as medicine for cough, cold, dropsy and rheumatism.

Whole plant is used in thatching. Crushed plant is used to eradicate termites.

29. *Mangifera indica* L. (Anacardiaceae)

Young leaf juice is applied locally in eyes to cure conjunctivitis. Extract of fresh leaves or bark is used as a remedy for diarrhoea and dysentery. Decoction of stem bark is useful in epistaxis and piles. Raw fruit is plucked and sap is applied against scorpion sting.

Kernel is eaten after roasting. Wood is considered as timber wood and used for several purposes.

30. *Momordica balsamina* L. (Cucurbitaceae)

Plant juice is used to massage the body to relieve rheumatic pain. The fruits are cooked as vegetable and eaten to treat fever and rheumatism.

31. *Momordica charantia* L. (Cucurbitaceae)

Leaf juice is dropped in eyes against infection.

32. *Momordica dioica* Roxb.ex Willd. (Cucurbitaceae)

Root of sterile plant is crushed with jaggery and milk and taken orally to check fertility forever. Unripe fruits cooked as vegetable.

33. *Moringa oleifera* Lam. (Moringaceae)

Boiled leaves are tied locally to relieve abdomenache, muscular pain, throbbing pain and sprain.

Fruits and flowers cooked as vegetable.

34. *Morus alba* L. (Moraceae)

Ripe fruits are eaten to cure acidity. Decoction of stem bark is taken against fever and intestinal worms.

Tender twigs are used to make baskets.

35. *Nyctanthes arbor-tristis* L. (Oleaceae)

Flower powder is taken as an antiemetic (fig. 4) .

Ash of leaves is applied locally on body to cure urticaria. Seed powder rubbed over scalp to grow new hair. Stem and branches are used to make baskets. Flowers offer to the lord Krishna.

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**Figure 4: *Nyctanthes arbor-tristis***



**Figure 5: *Withania somnifera***

36. *Saccharum bengalense* Retz. (Poaceae)

Fibre obtained from leaf and culm.

37. *Withania somnifera* (L.)Dunal (Solanaceae)

Leaves boiled in water and take bath with medicated water against bodyache. Seeds are used to make *laddoos* (a kind of sweet) which are eaten to cure joint pain (fig. 5).

**RESULTS AND DISCUSSION**

The exploration yielded 37 plant species belonging to 27 families used for ethnobotanical purpose by natives of Keladevi Wildlife Sanctuary. These plants are widely used to cure fever, cough, various poisonous bites, asthma, boils, pimples, mouth sores, bodyache, fracture, diarrhoea, dysentery, debility, rheumatism, leucorrhoea, lymphodinitis, constipation, piles etc. These plants are also source of fruits, vegetables, fibre, fuel and timber wood also. Cucurbitaceae family represented the maximum species (18.51%) followed by Caesalpiniaceae (11.12%), Moraceae (11.12) and Liliaceae and Poaceae (7.40% each) and rest families represented by single species.

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