

# Survey of Medicinal Plants in Sariska Tiger Reserve (Alwar)

## Abstract

The forest of Sariska Tiger Reserve especially undulating plateaus, lands and wide valleys of the hill ranges of Aravalli hills. Rajasthan have great diversity of flora. This paper gives an account of 132 medicinal plants found in Sariska Tiger Reserve Rajasthan state, India along with their local name, family, habit and medicinal uses. Due to overgrazing, encroachments, unsustainable utilization and other developmental activities in the regions, several persistent medicinal plant species are on the verge of extinction. Due to lack of awareness and research on these groups of plant in this area, people of this region are unaware of the wealth of this heritage. Sariska Tiger Reserve, one of the 42 Tiger Reserves of India, is located in the undulating plateau lands and wide valleys of the hill ranges of Aravalli system, near the civil district of Alwar in Rajasthan. The survey provides a veritable source of information for traditional medical practitioners and medicinal plant researchers and help in developing strategies for future conservation.

**Keywords:** Medicinal Plant Diversity, Ethnomedicinal Survey, Habit, Uses, Local Name.

## Introduction

Rajasthan, the largest state in our country, has marked difference in physiographic feature. The Aravallis, one of the oldest mountain system, divide the state in two unequal parts. Sariska National park is situated between the latitude (76°17'-76°34'N and 27°5'-27°33'E) and longitude in the Alwar district of Rajasthan. Over 30 percent of the state is covered by Aravallis and a vast expanse of arid and semi arid tract lies in the west of Aravallis. It became a wild life sanctuary in 1955 and Tiger reserve in 1982. According to Department of Forest, Government of Rajasthan the total area of the Sariska Tiger Reserve is 866 sq.km, of which 302.2 sq. km. is buffer zone and 497.8 sq.km is core zone. Sariska core zone is comprised of three isolated; pockets: Core-I (273.8 sq.km), II (126.5 sq.km.) and III (97.5 sq.km). The status of the Core I has been notified as a National park in 1982. Sariska is undulating to hilly and has numerous narrow valleys. Earlier Sariska was the private hunting grounds of Alwar's royal family, today only 20 percent of this vast expanse of jungle is "Tiger Habitat". The vegetation of Sariska correspond to Northern tropical dry deciduous forests (sub group 5 B; 5/E I and 5/E2) and Northern tropical thorn forest (Sub Group 6 B) (Champion and Seth, 1968). The forest being scattered and sparse over a large area on various geological and soil formation and vary greatly in composition. *Anogeissus pendula* (Dhok) is dominant species in the undulating area and on the hills. *Boswellia serrata* (Salar) and *Lannea coromandelica* (Garjan) grows on steep rocky areas. *Acacia catechu* (Khair), *Zizyphus mauritiana* (Bordi) and *Butea monosperma* (Dhak) are found in valleys. *Dendrocalamus strictus* is extremely limited in distribution and is found along the well drained reaches of the streams and moist and colder part of the hills. In Rajasthan State, many ethnobotanical studies on medicinal plant resources have been carried out by Kirtikar and Basu (1984), Joshi (1995), Katewa and Guria (1997), Singh and Pandey (1998), Katewa *et al.* (2001, 2004), Jain *et al.* (2004) but the serial documentation of various areas is still lacking.

## Aim of the Study

The resulting datasets will provide an unparalleled resource for the research community working at the interface of plant metabolism and human health. The proposed research will address this gap in our species-specific knowledge of plant metabolism by determining the DNA sequence. Progress in understanding and manipulating these taxonomically restricted metabolic pathways, many of which produce compounds of pharmaceutical



**Ramesh Chand Meena**

Assistant Professor,  
Deptt. of Botany,  
Govt. P.G. College,  
Thanagazi, Alwar, Rajasthan

importance, has not benefited to the same extent from the genomics revolution.

#### **Study Areas**

Alwar District is situated in the north-eastern part of Rajasthan at 27.57° N and 76.6° E. It has an average elevation of 271 metres (889 feet). The length of the district is 137 km<sup>2</sup> while its breadth is 110 km<sup>2</sup> approx. The district has a dry climate with hot summer, a cold winter and a short monsoon season. During summers the maximum temperature is around 41°C and minimum is around 28°C and in winters maximum temperature is ~ 23°C and minimum ~ 8°C. The normal annual rainfall in the district is 57.77 cms with 70% average humidity. The sandy soil and bright sunlight are the two important natural resources abundantly available in this region which are responsible for the development of the desert vegetation having variable medicinal properties. Sariska National Park is located in Alwar district (27°35'N and 76°39'E) in the eastern part of the State of Rajasthan. The park covers an area of 800 km<sup>2</sup> including 480 km<sup>2</sup> in the core area and 320 km<sup>2</sup> in the buffer zone. Sariska National Park, which is a Project Tiger reserve, also boasts of many other species, including rare birds and plants. Being located on the desert land of Rajasthan, the flora and fauna of Sariska is characterized by scrub thorn arid forests, dry deciduous forests, rocks and scanty grasses spread over the hills and narrow valleys of the Aravalli hill range. Enroute to Sariska, 12 km<sup>2</sup> south west of Alwar is the water places of Siliserh with a lake surrounded by low, wooded hills. The lake was built in 1845 A.D. by constructing an earthen dam between two hills to store the water of a small tributary of river Ruparel. When full, the total water spread covers an area of about 10 sq. km<sup>2</sup>. Adorned with domed cenotaphs, Siliserh lake is picturesquely set amidst the forested slopes of Aravalli hills. Previously Singh (2002; Table 1) and Yadav (2005) worked on the ethnobotanical survey of the flora of different regions of Alwar district but this was the first attempt in these selected areas.

#### **Material and Methods**

For documentation of the available medicinal flora, ethnobotanical surveys were conducted in 2006-2008, randomly selected villages following the procedure as described by Jain (1967). These specimens were collected and identified by one of the author Prof. S. C. Jain and confirmed by Herbarium, Botany Department, University of Rajasthan, Jaipur and also with the help of published data (Jain, 1991; Kirtikar and Basu, 1984; Shetty and Singh, 1987). For traditional uses of medicinal plants questions were asked to elder and key informants. It was a great help that the field staff of Sariska Tiger Reserve, Department of Forest, Government of Rajasthan was associated always in the field. Plant samples (leaf, flower etc.) were brought to Indira Gandhi Centre for Human Ecology, Environmental and Population Studies, herbarium sheets for important species were prepared and help and cooperation was sought from the "Herbarium" of Department of Botany, University

of Rajasthan, Jaipur for finding out the current status of vegetation in the study area. The properties of medicinal important plants are assessed by interview of local dweller, ayurvedic doctors, local medicomem and elder man and women of inside and outside the reserve. Approximately 35 percent of the forest area is either occupied by bare rocks or covered specially with degraded and poor type of scrub growth. The growth of the principal trees is generally slow and the height poor. On average the height varies from 4.5 meters to 7.5 meters, in favorable localities like core area the height reaching upto 12 meters. The diameter increment, too is slow and most of the principal species over 30 cm wide in width. The dominating species with occurrence in particular height are divided into upper canopy, middle canopy and ground flora as grasses and sedges mainly.

#### **Discussion**

In drug discovery, ethnobotanical and ethnomedical information has been found to be one of the reliable approaches and several active compounds have been discovered from plants on the basis of this information (Carney *et al.*, 1999; Fabricant and Farnsworth, 2001; Ajibesin *et al.*, 2008). This knowledge is however dwindling rapidly due to changes towards a more western lifestyle, overexploitation of plant resources, modern agricultural practices, cultural changes within the community, construction of new small dams, rapid shift towards the allopathic medicine, and the spread of housing colonies and modern education lead to the destruction of not only the habitats of medicinal plants but also vanishing of traditional knowledge and medicinal plant species are threatened day by day in the area. This survey and lack of information obtained about traditional uses of plants exhibited that rural people in the studied area are not using the plants to treat various diseases. This indicates that the use of traditional plant-based medicine is losing rapidly. People are practicing traditional medicine based on what they currently understand about the system and there is also a possibility that people will use this knowledge in the future even in remote areas. Many plant species have become threatened due to habitat loss as a result of rapid urbanization. During the survey, it was observed that people were hesitant in disclosing their knowledge. It is this knowledge that provides them recognition in the society and hence they do not want to share it. In many cases, it was also found that a bit of this knowledge has been lost during transmission in folklore from one generation to other. The villagers themselves said that, compared to them their forefathers knew much more. Due to recent global shift towards herbal medicines, the pressure on the plant resources in nature have increased and the market is also fast expanding. Therefore, the results of this survey can be incorporated into future conservation management plans for threatened medicinal plants. Further, the local people should participate in problem formulation and decision making process for the conservation strategies.

**Ethnomedicinal Plants from The Sariska Region of Alwar District From Rajasthan, India**

Plant name	Family & Habit	Common name	Part used	Key ailment	Traditional preparation	References
1. <i>Abutilon indicum</i> (L.) Sw.	Malvaceae (H)	Kanghi	Lvs, Bk, Rt	Fever	Leaf and root juice are taken orally to treat dental problems	Muthu et al., 2006
2. <i>Abutilon asiaticum</i> G. Don	Malvaceae (H)	Kanghi	Rt	Piles	-	-
3. <i>Hibiscus lobatus</i>	Malvaceae (S)	-	Wp	spermatorrhoea	-	-
4. <i>Hibiscus micranthus</i> L. f.	Malvaceae (S)	Chanak bhindo	Wp	Febrifuge	-	-
5. <i>Sida acuta</i> Burm.	Malvaceae (H)	Bala	Wp, Lvs, Rt	Astringent, cut and wounds, diarrhoea	Leaf paste is applied topically to heal cuts, wounds and to get relief from headache	Muthu et al., 2006
6. <i>Sida cordifolia</i> L.	Malvaceae (H)	Kungyi	Wp, Lvs, Rt, Sd	Aphrodisiac, snake-bite, gonorrhoea	Rot with cow's milk showed improvement in Parkinson patients	Nagashayana et al., 2000
7. <i>Sida rhombifolia</i> L.	Malvaceae (H)	Atibala	Rt, St, Lvs, Wp	Swelling, rheumatism, tuberculosis	Root infusion for the treatment of rheumatism and neurological complaints	Dhalwal et al., 2007
8. <i>Sida veronicaefolia</i> Lam.	Malvaceae (H)	Bhiunli	Wp	Astringent, bitter, leucorrhoea, gonorrhoea	Leaves ground into a paste and applied for thorn poison	Siromoney et al., 1973
9. <i>Cordia dichotoma</i>	Boraginaceae (T)	Lisoda	Ft	, chest disease	Fruits Useful in the cough, chest disease it relief, severe colic.	-
10. <i>Heliotropium marifolium</i> Koen. ex Retz.	Boraginaceae (H)	Choti-santri	Wp	Emetic, ulcer, snake-bite	Powdered leaves mixed with water and applied to Emetic	Muthu et al., 2006
11. <i>Acalypha ciliata</i> Forssk	Euphorbiaceae (H)	-	Wp, Lvs, Rt	Cuts and wounds, bronchitis, rheumatism	Leaf paste is applied to ulcers	Panda, 2000
12. <i>Acalypha indica</i> L.	Euphorbiaceae (H)	Kho-kali	Lvs, Wp	Bronchitis, pneumonia, asthma, skin disease	Decoction of leaves mixed with common salt is applied to scabies	Parveen et al., 2007
13. <i>Acalypha lanceolata</i> Willd.	Euphorbiaceae (H)	-	Lvs, Wp	Antiseptic, vermicide, carminative	Leaf paste is applied externally on boils, sores and swellings	Chandel et al., 1996
14. <i>Croton bonplandianum</i> Baill.	Euphorbiaceae (H)	Ban-tulsi	Wp, Lvs, Lt	Itch, scabies	Latex used to heal cuts and wounds	Asolkar et al., 1992
15. <i>Euphorbia caducifolia</i> Haines	Euphorbiaceae (T)	Dandathor	Lt, rt	Cough, skin-blisters	Root decoction is used as effective abortifacient at initial stages	Ross, 2003
16. <i>Euphorbia hirta</i> L.	Euphorbiaceae (H)	Dudhi	Wp, Lt	Cough, ring-worm, injury	About 20 leaves are crushed and the	Parveen et al., 2007

					extract is given orally with honey once a day in the morning for leucorrhoea	
17. <i>Euphorbia thymifolia</i> L.	Euphorbiaceae (H)	Choti-dudhi	Lvs, Sd	Laxative, bowel	Complaints Extract of whole plant to cure small pox	Jadhav, 2006
18. <i>Phyllanthus niruri</i> Sensu Hook. f.	Euphorbiaceae (H)	Bhuan anvala	Wp, Rt, Shoot	Diuretic, jaundice, dysentery	Leaves mixed with salt applied locally to skin affections	Parveen et al., 2007
19. <i>Ricinus communis</i> L.	Euphorbiaceae (S)	Arandi	Lvs, Sd	carbuncle, rheumatism	Leaf infusion is used stomchache	Parveen et al., 2007
20. <i>Bridelia retusa</i>	Euphorbiaceae (T)	Kajhi	Bk	rheumatism	Bark-astringent, used in the rheumatism. Paste of the stem bark is applied to wounds.	-
21. <i>Aegle marmelos</i> (L.) Corr.	Rutaceae (T)	Bel	fruit pulp	cooling, laxative and digestive	chronic diarrhoea and dysentery	-
22. <i>Cissus quadrangularis</i>	Vitaceae (S)	Hadjod, hadjora	Wp	piles, skin diseases, leprosy	shrub Worm infestations, piles, skin diseases, leprosy, fractures, muscular pain.	-
23. <i>Achyranthes aspera</i> L.	Amaranthaceae (H)	Latjira	Wp, Rt, Sd	Asthma, fever, cough	One teaspoon powder of whole plant is taken with warm water for pneumonia	Parveen et al., 2007
24. <i>Aerva javanica</i> (Burm. f.) Juss. ex Schult.	Amaranthaceae (H)	Bui	Fl, Sd	Headache, rheumatism	Woolly seeds stuffed in pillows to relieve headache and protective against rheumatism	Parveen et al., 2007
25. <i>Alternanthera pungens</i> Kunth	Amaranthaceae (H)	Kunth	Wp	Diuretic	Decoction of whole plant is used in gonorrhoea	Asolkar et al., 1992
26. <i>Celosia argentea</i> L.	Amaranthaceae (H)	Sufaid murgha	Sd	Mouth sores, eye diseases, diarrhoea	20 g crushed seeds is taken orally for ovarian and uterus diseases	Katewa et al., 2004
27. <i>Digera muricata</i> (L.) Mart	Amaranthaceae (H)	Latmahuri a	Lvs	Laxative, urinary discharges, boils	Leaf paste is applied locally to prevent the pus formation	Katewa et al., 2004
28. <i>Gomphrena celosioides</i> Mart.	Amaranthaceae (H)	-	Lvs	Diuretic	Leaf paste is used to treat malaria	Weniger et al., 2004
29. <i>Pupalia lappacea</i> (L.) Juss.	Amaranthaceae (H)	-	Wp	Antidote, dropsy, oedema, febrifuge	-	Weniger et al., 2004
30. <i>Boswellia serrata</i> (L.)	Burceraceae (T)	Salai, Salar	Gm	rheumatism, nervous, skin diseases, urinary disorders	The gum is used in rheumatism, skin nervous, diseases, urinary disorders	-
31. <i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Adu	Rt, St, Bk	Fever	fever / coughs	Singh et al., 2002
32. <i>Balanites aegyptica</i> (L.) Delile	Simaroubaceae	Hingot	Sd	hypotensive source of diosgenin	oral contraaceptatives	Singh et al., 2002
33. <i>Actinopteris</i>	Actiniopteridac	Morphanki	Wp	Styptic,	Powdered whole	Asolkar et al.,

<i>radiata</i> (SW.) <i>Link.</i>	eae (S)			anthelmintic	plant along with seed of <i>Ocimum americanum</i> given for Antifertility	1992
34. <i>Adhatoda zeylanica</i> Medic.	Acanthaceae (S)	Adusa	Wp, Lvs, Rt	Fever, jaundice, whooping cough, glandular tumors	Leaf and wood ashes mixed with honey used for cough and asthma; Juice mixed with juice of <i>Feronia limonia</i> cures nose bleeding	Asolkar et al., 1992
35. <i>Barleria prionitis</i> L.	Acanthaceae (H)	Bajardanti	Lvs, Rt, Bk	Cough, toothache	Twigs as toothbrush; Decoction of whole plant as health tonic ; Leaves to relieve pain	Singh, 2004
36. <i>Dipteracanthus prostratus</i> (Poir) Nees	Acanthaceae (H)	Kalighavani	Wp, Ft	Hypoglycaemic, anticancer, ear-diseases	Plant decoction is used as ear malady	Chandel et al., 1996
37. <i>Peristrophe paniculata</i> (Forsk.) Brummitt	Acanthaceae (H)	Atrilal	Wp	Snake-poison	Whole plant macerated in infusion of rice take orally in as antidote to snake-poison	Singh et al., 2002
38. <i>Acacia leucophloea</i> (L.)	Mimosaceae	Rouch	Bk	malaria, stomachache	Tree Bark is given in malaria, stomachache, othache	Parveen et al., 2007
39. <i>Acacia nilotica</i> (L.) Willd. ex Delile	Mimosaceae (T)	Babul	Gm, Bk	Diorrhoea, dysentery, diabetes	Powder of bark is applied externally in ulcers	Parveen et al., 2007
40. <i>Acacia senegal</i> (L.) Willd	Mimosaceae (T)	Kumta	Gm	Burns, sore nipples, nodular leprosy	Gum is used internally in inflammation of intestinal mucosa and externally to cover inflamed surfaces as burns, sore nipples and nodular leprosy	Parveen et al., 2007
42. <i>Acacia catechu</i> Willd.	Mimosaceae (T)	Khair	Gm	-	difficult child birth	Parveen et al., 2007
43. <i>Acacia farnesiana</i> (L.) Willd.	Mimosaceae (T)	Guh babul , Sweet acacia	Bk	astringent	cough, renal dropsy, bronchial infection	-
41. <i>Prosopis cineraria</i> (L.) Druce	Mimosaceae (T)	Khejari	Fl, Infl	Boils, skin-diseases	Flowers are pounded, mixed with sugar and eaten by women during pregnancy as a safe guard against miscarriage	Parveen et al., 2007
44. <i>Albizzia lebbek</i> Benth.	Mimosaceae (T)	Siris	Lvs, Bk, Ft	Boils, eruption, leprosy, ulcers	Leaf juice is used as eye drops for night blindness	Parveen et al., 2007
45. <i>Alysicarpus vaginalis</i> DC.	Papilionaceae (H)	Bela	Rt	Cough	Roots for treatment of irregular menses	Asolkar et al., 1992
46. <i>Butea monosperma</i>	Papilionaceae (T)	Dhak	St, Bk, Ft,	Anthelmintic, astringent,	Stem paste is applied on the	Katwa et al., 2004

(Lamk.) Taub.			Gm, Lvs	dysentery, leucorrhoea	affected parts for cuts and wounds; Bark paste is applied locally on the affected portion of body	
47. <i>Crotalaria medicaginea</i> Lam.	Papilionaceae (H)	Gulabi	Wp, Sd	Scabies, impetigo	Seed decoction is given toxaemia	Trivedi, 2002
48. <i>Indigofera linnaei</i> Ali.	Papilionaceae (H)	Latahai	Wp, Rt	Diuretic, antiscorbutic	Plant decoction is used in epilepsy and insanity ;Juice of plant is used as an alternative, diuretic .	Satyavati et al., 1987
49. <i>Indigofera tinctoria</i> L.	Papilionaceae (H)		Ap, Lvs, Rt	Anti-hepatotoxic, hypoglycaemic	Root paste is given in fever	Asolkar et al., 1992
50. <i>Tephrosia purpurea</i> (L.) Pers.	Papilionaceae (H)	Sarphonka	Wp, Rt	Blood purifier, tonic, colic, pain, tonsillitis	Decoction of the roots with ginger is consumed to relieve headache	Parveen et al., 2007
51. <i>Tephrosia uniflora</i> Pers.	Papilionaceae (H)	Bhaker	Wp, Lvs, Rt, Sd, Bk	Poisonous bites, diuretic, asthma, piles, syphilis	Whole plant is boiled in water and eaten for syphilis	Singh, 2004
52. <i>Rhynchosia minima</i> (L.) DC.	Papilionaceae (H)	Govindpalli	Lvs	Abortifacient	Seeds are roasted dehusked and used as pulses	Prusti and Behera, 2007
56. <i>Abrus precatorius</i> L.	Papilionaceae (S)	Chirmi/Ratiti	Sd	purgative and aphrodisiac	nervous disorder	-
53. <i>Cassia alata</i> L.	Caesalpiniaceae (S)	Datkapat	Lvs, Bk	Diuretic, insect repellent, laxative	Leaves decoction is used for skin-diseases	Ajibesin et al., 2008
54. <i>Cassia tora</i> L.	Caesalpiniaceae (H)	Chakunda, Panwad	Lvs, Sd	Laxative, skin-disease, ring-worm	Powdered leaves boiled in water to make decoction and externally used for skindiseases	Ajibesin et al., 2008
55. <i>Bauhinia racemosa</i> Lamk.	Caesalpiniaceae (T)	-	Bk	toxic	weakness	-
57. <i>Anisomeles indica</i> (L.) Kuntze	Lamiaceae (H)	Rantil	Wp, Sd oil	Carminative, tonic, uterine affections	Crushed leaves applied to neck of bullock to cure inflammation caused by cart pulling	Asolkar et al., 1992
58. <i>Leucas cephalotes</i> (Roth) Spreng.	Lamiaceae (H)	Goma	Wp, Fl	Scabies, cough, cold, scorpion-sting	Plant decoction is used for malaria, headache, eye complaints	Satyavati et al., 1987
59. <i>Leucas urticaefolia</i> (Vahl.) R. Br.	Lamiaceae (H)	Panihari	Lvs	Fever	Boiled leaves mixed with jaggery are given to buffaloes to expel placenta after delivery	Sharma et al., 1992
60. <i>Ocimum canum</i> Sims.	Lamiaceae (H)	Kali-tulsi	Wp, Lvs	Skin-disorder, cold, carminative, dysentery	Leaf paste is used in skin disease and also applied to the finger nails during fever when extremities of cold	Satyavati et al., 1987
61. <i>Anogeissus pendula</i> Edgew.	Combretaceae (T)	Dhaunkra	Ap	Diuretic, cardiovascular	Decoction of bark is given for gastric disorder	Jain et al., 2005

62. <i>Dendrocalamus strictus</i>	Bambusaceae (T)	Bas	Lvs	haematemesis, leucoderma	Lvs juice Used in haematemesis, jaundice, leucoderma	-
63. <i>Apluda mutica L.</i>	Poaceae (G)	Tamtabhe da	Wp	Skin-diseases	Poultice of whole plant is used to cure mouth sores of cattle	Katewa et al., 2001
64. <i>Cynodon dactylon</i>	Poaceae (H)	Dubghas	Wp	migraine	Grass Juice is used as a nasal drops for migraine. Paste is applied to scalp for dandruff treatment	-
65. <i>Argemone mexicana L.</i>	Papaveraceae (H)	Pilikateli	Lvs, rt, Sd	Skin diseases, cutaneous affections, snake-bite	Seeds are poured in 'Mahua oil' and are applied to eczema and itching	Parveen et al., 2007
66. <i>Bidens biternata (Lour.) Merr. &amp; Sherrif.</i>	Asteraceae (H)	Chirchitta	Wp, Lvs, Rt, Fl, Sd	Leprosy, skin diseases, tumors, anthelmintic	Juice of leaves applied to heal ulcers and to cure eye and ear complaints	Asolkar et al., 1992
67. <i>Parthenium hysterophorus L.</i>	Asteraceae (H)	Gajar ghas	Rt, St	Tonic, febrifuge, rheumatism	Plant decoction is externally used for skin-diseases	Dominguez and Sierra, 1970
68. <i>Xanthium strumarium L.</i>	Asteraceae (H)	Bilawa	Sd	Febrifuge, skindiseases, eczema, scabies, rheumatism	Fruit is considered cooling and effectious in the small pox and also useful in urinary diseases	Ahmad, 2003
69. <i>Verbesina encelioides (Cav.) Benth. &amp; Hook. f. ex Gray</i>	Asteraceae (H)	Nakli-Surajmukhi	Wp	Febrifuge, emetic, insecticide, antiinflammatory	Infusion of whole plant for reduce swelling	Soumyanath, 2006
70. <i>Vernonia cinerea (L.) Less.</i>	Asteraceae (H)	Sahadevi	Wp, Lvs	Diaphoretic, piles, dropsy, conjunctivitis	Leaf decoction is given in fever	Jeeva et al., 2006
71. <i>Tridax procumbens L.</i>	Asteraceae (H)	Rukhdi, Khoon datni	Lvs	Kidney stones, boils, blisters, dysentery	Leaf paste is applied topically on cuts.	Muthu et al., 2006
72. <i>Eclipta prostrata (L.)</i>	Asteraceae	Bhrangra	plant juice	Tonic	jaundice and hair tonic	Muthu et al., 2006
73. <i>Boerhavia diffusa L.</i>	Nyctaginaceae (H)	Punarnava	Rt	Asthma	Leaves boiled with rice, garlic and water are rubbed on body for rheumatism	Parveen et al., 2007
74. <i>Borreria articularis (L. f.) F. N. Williams</i>	Rubiaceae (H)	Bagrakote jungle	Sd, Rt	Earache, blindness, dysentery, stimulant, kill tooth-worms	Crushed leaves used in stomach pain	Asolkar et al., 1992
75. <i>Calotropis procera (Ait.) Ait. f.</i>	Asclepiadaceae (S)	Aakada	Rt, Lvs, Fl, Lt, Bk	Dysentery, cough, asthma	Decoction of root bark alog with blackpepper is used twice a day for 3 day for malarial fever	Parveen et al., 2007
76. <i>Calotropis gangetia</i>	Asclepiadaceae	Aak	Wp, Rt	leprosy, syphilitic ulceration	Roots-used in lupus, leprosy	

	(S)				tuberculosis, syphilitic, ulceration. All parts-used against bronchitis and asthma.	
77. <i>Pergularia daemia</i> (Forsk.) Chiov.	Asclepiadaceae (H)	Sagovani	Wp	Gastric ulcer, emetic, anthelmintic	Leaf decoction is an utrinetonic and is taken orally up to 20 ml per day	Singh et al., 2002
78. <i>Gymnema sylvestris</i> (Retz.) Schult.	Asclepiadaceae	Gurmar	Lvs	antidiabetic	blood sugar reducing	-
79. <i>Cardiospermum halicacabum</i> L.	Sapindaceae (C)	Kanphuti	Wp, Rt, Lvs	Rheumatism, laxative, nervous diseases, earache	Powdered leaves used externally for healing wounds	Asolkar et al., 1992
80. <i>Carissa carandas</i> L.	Apocynaceae (T)	Karunda	Lvs, Rt, Ft	Insect repellent, hypotensive dropsy, anasarca madness	Paste of root bark useful in diabetic ulcer	Asolkar et al., 1992
81. <i>Nerium oleander</i> L.	Apocynaceae (S)	Kaner	Wp, Lvs, Rt, Bk, Oil	Leprosy, skin-disease, poisonous, chancres and ulcer of the penis	Root paste with water are applied externally chancre, ulcers and leprosy	Parveen et al., 2007
82. <i>Thevetia peruviana</i> (Pers.) K. Schum	Apocynaceae (S)	Pila-kaner	Bk	Fever, psoriasis, skininfection	A weak decoction of stem bark is used to treat intermittent fevers	Iwu, 1993
83. <i>Cayratia carnosa</i> (Wall.) Gagnep. ex Wight	Vitaceae (S)	-	Ap, Rt	Depressant	Root given in anaemic conditions	Asolkar et al., 1992
84. <i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Amerbel	Bk	Tonic	tonsilites	-
85. <i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae (H)	Indrayan	Rt, Ft	Purgative, jaundice, rheumatism	Root paste and Ashgandh mixed with honey is administered orally for rheumatism	Parveen et al., 2007
86. <i>Coccinia cordifolia</i> Cogn.	Cucurbitaceae (H)	Kanduri	Lvs, Rt	Skin-eruption	Juic of rots and leaves is use to treat diabetes	Akhtar et al., 2007
87. <i>Momordica dioica</i> Roxb. ex Willd.	Cucurbitaceae (C)	Kakoda	Ft, sd, Tb	Elephantiasis, anthelmintic, jaundice	Root paste is applied on snakebites for three times daily	Trivedi, 2002
88. <i>Trichosanthes cucumerina</i> L.	Cucurbitaceae (H)	Jangli-chichonda	Wp, Lvs, St, Ft, Sd, Rt	Cardiac tonic, skindiseases	Decoction of root is used for bronchitis and heart diseases	Jain et al., 2005
89. <i>Cleome viscosa</i> L.	Capparaceae (H)	Hulhul	Wp, Lvs	Headache, boils	Leaf paste is applied topically to heal wounds	Muthu et al., 2006
90. <i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae (C)	Jamti-ki-bel	Lvs, Rt, St	Fever, rheumatism, cooling, laxative	Powdered leaves mixed with water and applied to eyes giving cooling effect	Asolkar et al., 1992
91. <i>Corchorus aestuans</i> L.	Tiliaceae (H)	-	Wp, Sd	Anticancer, cardi tonic	Paste of seeds is given with warm cow milk to relieve congestion in chest	Prusti and Behera, 2007
92. <i>Grewia damine</i> Gaertn	Tiliaceae (S)	-	Wp	Cough	Whole plant is used to treatdiarrhea and	Jayasinghe et al.,



					dysentery	2004
93. <i>Grewia flavescens</i> A. Juss.	Tiliaceae (S)	Kali-siali	Lvs, Rt, Ft	Increase male strength	Rot powder and decoction is used for bleeding of urinary tract, leucorrhoea, spermatorrhoea	Jain et al., 2005
94. <i>Grewia tenax</i> (Forssk.) Fiori	Tiliaceae (S)	Gango	Rt, St	Antitumor, skin-diseases	Decoction of bark for cough and muscular pain	Singh, 2004
95. <i>Triumfetta rhomboidea</i> Jacq.	Tiliaceae (S)	Bhurat	Wp, Rt	Jaundice, diarrhoea	Root extract is taken to cure urinogenital problem of male	Jadhav, 2006
96. <i>Commiphora wightii</i> (Arn.) Bhandari	Burseraceae	Guggal	Bk	expectorant aphrodisiac carminative	lower blood cholesterol	-
97. <i>Datura fastuosa</i> L.	Solanaceae (S)	Datura	Wp, Lvs, Sd	Insanity, fever, cerebral complications, skindiseases, swellings	Leaves smoked to cure cough	Asolkar et al., 1992
98. <i>Lycium barbarum</i> L.	Solanaceae (S)	Morali	Wp	bronchitis	Fresh plant decoction is used as diuretic; Stem bark against bronchitis for horses	Singh, 2004
100. <i>Physalis minima</i> L.	Solanaceae (H)	Pipat	Wp	Tonic, purgative, joint pain	Fruit eaten and leaf juice used in earache	Singh, 2004
99. <i>Solanum xanthocarpum</i>	Solanaceae (H)	Chhoti kateri, Bhatakataiya	Wp	asthma, diuretic	The drug is used in cough, asthma, pain in chest, & certain kinds of fevers. It is diuretic and useful of stones in bladders.	-
101. <i>Solanum nigrum</i> L.	Solanaceae (H)	Makoi	Wp, Lvs, Rt	Psoriasis, piles, dysentery	Roots with small amount of sugar are boiled in water and are given to women to enhancing fertility	Parveen et al., 2007
102. <i>Solanum virginianum</i> L.	Solanaceae (H)	Pili kateli	Rt, St, Fl, Ft	Cough, asthma, gonorrhoea	Decoction of plant with <i>Zingiber officinale</i> , added with the powder of <i>Piper longum</i> was used for cough, asthma, anorexia, fever and indigestion	Khare, 2004
103. <i>Eucalyptus camaldulensis</i> Dehnh.	Myrtaceae (T)	Safeda	Lvs, oil	Antibacterial, cuts, skindiseases, diarrhoea	Leaf essential oil can be gargled for sore throat	Chevallier, 1996
104. <i>Ficus carica</i> L.	Moraceae (T)	Anjir	Wp, Ft, Lt	Laxative, anticancer, anaemia, anthelmintic	Exudates are applied externally on ringworm thrice daily	Trivedi, 2002
105. <i>Ficus racemosa</i>	Moraceae (T)	Gular	Bk, Ft	Astringent and antiseptic	fruits digestive, used in diarrhea, dyspepsia,	-

					dysentery, and hemorrhages urinary disorders.	
106. <i>Gisekia pharnaceoides L.</i>	Aizoaceae (H)	Balu ka sag	Wp	Female diseases, defective semen, destroys fat	Plant extract to kill roundworms	Singh, 2004
107. <i>Trianthema portulacastrum L.</i>	Aizoaceae (H)	Lal-sabuni	Lvs, Rt	Amenorrhoea	Decoction of root is taken internally to treat constipation and asthma	Muthu et al., 2006
108. <i>Phoenix sylvestris Small tree Journal of</i>	Arecaceae (T)	Khajur	Ft	oleaginous, cardio tonic	The fruit is cooling, oleaginous, cardio tonic.	-
109. <i>Gloriosa superba L.</i>	Liliaceae (H)	Kalihari	Tbs, Rt	Gonorrhoea, snake-bite	Paste of dried tuber powder is applied locally for wounds	Katewa et al., 2004
110. <i>Asparagus adscendens Roxb.</i>	Liliaceae (H)	Safed musli	Rt	demulcent	diarrhoea and dysentery	Katewa et al., 2004
111. <i>Chlorophytum tuberosum</i>	Liliaceae (H)	Musli	Rt	Tonic	Rt tuber dissolve kidney stone. Tonic is made up of root extensively used in Ayurvedic system.	-
112. <i>Opuntia elatior</i>	Cactaceae (S)	Nagphani	Wp	skin irritation, eye damage.	Takna thour Srub The useful in diabetes, that readily dislodge and cause severe skin irritation and eye damage.	-
113. <i>Ipomoea carnea Jacq.</i>	Convolvulaceae (S)	Beshram	Lvs, St, Ft, Sd	Skin-diseases, leucoderma, muscle relaxant	Paste of a single seed is given in filaria	Prusti and Behera, 2007
114. <i>Ipomoea dichroa Choisy</i>	Convolvulaceae (S)	-	Sd	Purgatve, fever	Powdered seeds mixed with water and applied to Purgatve	Singh, 2004
115. <i>Ipomoea eriocarpa R. Br.</i>	Convolvulaceae (S)	Hara	Lvs, Sd oil	Skin-diseases, arthritis, rheumatism	Plant paste is extrnally applied to treat rheumatism and leprosy	Singh et al., 2002
116. <i>Ipomoea pestigridis L.</i>	Convolvulaceae (H)	Kamalata	Wp, Lvs, Rt	Dog-bite, purgative, boils	Plant paste is locally applied to treat carbuncles and boils	Singh et al., 2002
117. <i>Ipomoea turbinata Lag.</i>	Convolvulaceae (C)	Balkauri	Lvs, St, Sd	Skin-diseases, cuts, laxative	Plant juice used as an insecticide and laxative	Chandel et al., 1996
118. <i>Soymida febrifuga A. Juss.</i>	Meliaceae	Rohan	bark	stimulant	diarrhoea dysentery	Parveen et al., 2007
119. <i>Azadirachta indica A. Juss.</i>	Meliaceae (T)	Neem	Lvs, Bk	prophylatic	leprosy and skin diseases	-
120. <i>Lantana camara L.</i>	Verbenaceae (S)	Jharmari	Wp	Tetanus, tonic, rheumatism, malaria	About half cup of plant decoction with a little quantity of 'kala namak' is taken twice a day till relief tetanus	Parveen et al., 2007
121. <i>Vitex negundo L.</i>	Verbenaceae (T)	Nirgundi	Lvs, Rt	Tonic, rheumatism, ulcers	Fresh leaves crushed alongwith salt and the extract	Prashantkumar and Vidyasagar,

					is taken internally in night blindness	2006
122. <i>Lindenbergia muraria</i> (Roxb.) Brühl	Scrophulariaceae (H)	Chatti	Wp, Lvs	Fever, skin-infection	Paste of leaf is applied on snake-bite and scorpion-sting	Trivedi, 2002
123. <i>Bacopa monnieri</i> (L.)	Scrophulariaceae	Brahmi	Wp	potent diuretic tranquilizer	insanity, epilepsy cardiac tonic and nerve tonic	-
124. <i>Martynia annua</i> L.	Martyniaceae (H)	Bichu	Wp, Lvs, Ft	Sore throat, epilepsy, tuberculosis-glands	Paste of nut applied to the bites of venomous insects	Satyavati et al., 1987
125. <i>Capparis decidua</i>	Capparidaceae (S)	Keri, Teti	Wp, Lvs	Anti-inflammatory, deobstruent	Juice of leaves Antibactericidal.	-
126. <i>Capparis sepiaria</i>	Capparidaceae (S)	Jal, Hainsa	Bk, Lvs	anticholerin, diuretic	Root Brk-sedative, stomachic, anticholerin, diuretic febrifuge. Leaves-applied as poultice to piles, swellings.	-
127. <i>Rhus mysorensis</i> Heyne ex Wight & Arn.	Anacardiaceae (T)	Dansara	Ft	Diarrhoea	Fruits for digestion	Satyanarayan a et al., 2008
128. <i>Mangifera indica</i>	Anacardiaceae (T)	Aam	Ft	blood dysentery	Fruit contains vitamins A,B,C. Leaves are used in blood dysentery, soreness of voice. Raw fruit for prickly heat.	-
129. <i>Salvadora oleoides</i> Dcne. And Clarke	Salvadoraceae (S)	Kharojhal	Lvs, Ft	Antiinflammatory, analgesic, antiulcer	Leaf paste is used to cure cough and treatment of enlarged spleen.	Yadav et al., 2008
130. <i>Tribulus terrestris</i> L.	Zygophyllaceae (H)	Gokhru	Wp, St, Ft	Urinary trouble, kidney stones, gonorrhoea	Powdered fruits in doses of 18 g with sugar and black pepper for spermatorrhoea	Parveen et al., 2007
131. <i>Zizyphus nummularia</i> (Burm. f.) W. & A	Rhamnaceae (S)	Jhadi Ber	Lvs, Ft	Cooling, scabies	Juice of the root bark is applied externally in rheumatism	Parveen et al., 2007
132. <i>Zizyphus mauritiana</i>	Rhamnaceae (T)	Beri Tree	Ft	cold, flu, stomachic, piles	Fruits is used in mental retardation, cold, flu, stomachic, piles, mouth ulcer, conjunctivitis and for hair care.	-

H-Herb, S-Shrub, T-Tree, Wp-Whole plant, Rt-Root, St-Stem, Bk-Bark, Lvs-Leaves, Gm-Gum, Ft-Fruits, Sd-Seeds.

### Conclusion

A total number of 132 indigenous and naturalised plant species belonging to 102 genera under 47 families can be observed in Sariska Tiger Reserve. The highest number of medicinal plant species belong to the families Euphorbiaceae and Fabaceae (9 species); Amaranthaceae, Asteraceae and Malvaceae (7 species) and Convolvulaceae and Solanaceae (5 species). These plants have different growth habits which include herbs (63.63%), shrubs (20.90%) and trees (10.90%). Aravallis is known for very valuable plant and animal species. The local people and Ayurvedic doctors have been using plant products (leaf, seeds, bark, fruit etc.) in a crude

manner. It reveals that these plant species are of medicinal values of which full potential is yet to be explored and utilized. There is ample scope of researches in the field of Phytochemistry, Biochemistry, Pharmacognosy and Biotechnology. Analysis of interview schedule revealed that there are Fifty four plant species occurring in the study area, which can be considered as medicinal plant species.

### References

1. Parmar, P.J., 1985. A contribution to the flora of Sariska Tiger Reserve, Alwar District Rajasthan. Bull. Bot. Surv. India 27(1- 4) : 29-40.

2. Joshi, P. (1995). *Ethnobotany of the Primitive Tribes in Rajasthan*. Rupa Books Pvt Ltd. Jaipur, India. .
3. Shetty BV, Singh V. *Flora of Rajasthan, I Botanical survey of India, Calcutta 1987.*
4. Shetty BV, Singh V. *Flora of Rajasthan, II Botanical survey of India, Calcutta 1991.*
5. Shetty BV, Singh V. *Flora of Rajasthan, III Botanical survey of India, Calcutta 1993.*
6. Rodgers, W.A., 1991. A preliminary ecological survey of Algal spring, Sariska Tiger Reserve Rajasthan. *J. Bombay Nat. Hist. Soc.* 7 : 201-209.
7. Jadhav, D. (2006). *Ethnomedicinal plants used by Bhil tribe of Bibdod, Madhya Pradesh.* *Indian J. Trad. Know.* 5(2): 263-267.
8. Vyas LN. *Contribution to the flora of North east Rajasthan, Alwar district.* *Journ. Bombay Nat. Hist.* 1967; 64:191-231.
9. Asolkar, L.V.; Kakkar, K.K.; Chakre, O.J. (1992). *Second Supplement to Glossary of Indian Medicinal Plants with Active Principles. Part I(A-K) (1965-1981), CSIR, New Delhi, India.*
10. Mathur, V.B., 1991. *Ecological impacts of livestock grazing on wild ungulates in Sariska National Park, India, IVth Congress International de Terres de parcours, Montpellier, France.*
11. Parveen; Upadhyay, B.; Roy, S. and Kumar, A. (2007). *Traditional uses of medicinal plants among the rural communities of Churu district in the Thar Desert, India.* *J. Ethnopharmacol.* 113: 387-399.
12. Prashantkumar, P. and Vidyasagar, G.M. (2006). *Documentation of traditional knowledge on medicinal plants of Bidar district, Karnataka.* *Indian J. Trad. Know.* 5(3): 295-299.
13. Prusti, A.B. and Behera, K.K. (2007). *Ethnobotanical exploration of Malkangiri District of Orissa, India.* *Ethnobotanical Leaflets* 11: 122-140.