

PLANT BIODIVERSITY CONSERVATION IN TEMPLE YARDS OF SHERGARH SUB DISTRICT, JODHPUR, RAJASTHAN, INDIA



Science

KEYWORDS: Worshipped plants, Ornamental plants, Medicinal plants, Economic importance.

SHUBHA DADHICH

Faculty of Science, Maharshi Dadhichi Mahila Mahavidyalaya, Basni-I, Jodhpur-342005 Rajasthan (India)

N. K. DWIVEDI

Faculty of Science, Maharshi Dadhichi Mahila Mahavidyalaya, Basni-I, Jodhpur-342005 Rajasthan (India)

ABSTRACT

An ethnobotanical survey of plants associated with temple rituals and nurtured in the temple yards in the Shergarh sub district of Jodhpur carried out during 2015-16. The study documents 75 plant species of trees (54%), shrubs (31%), climbers (8%) and herbs (7%) conserved in studied temple yards of Shergarh sub district. These plants belonging to 67 genera and 36 families are protected and conserved in religious places. Guggal (*Commiphora wightii* Arn. Bhandari), Rohida (*Tecomella undulata* D. Don) are critically endangered and Ashoka (*Saraca asoca* (Roxb). Willd) is vulnerable plant species according to IUCN (International Union for Conservation of Nature). The paper enumerates their local names, botanical names and life forms.

INTRODUCTION

Biodiversity loss of tropical forests is mainly by anthropogenic activities due to degradation and destruction of habitat, is now recognized as a global problem. But India is a land of great natural heritage having good traditions for conservation of nature and natural resources by various means. Nature provides man all the basic requirements for his existence which is one of the reasons why nature is respected. From early civilization there is care and respect for nature has been influenced by religious beliefs and indigenous practices. It has a long wise plant conservation strategies that is useful to people and society. People belong to different cultures and customs possess a good deal of information about different utilities of local plant diversity.

The human culture, customs, ethos, religious rites, legends and myths, folk tales and folk songs, foods as well as medicinal practices are deeply associated and influenced by plants (*Badoni & Badoni, 2001*). Our ceremonies, festivals and rituals have close association with plants. Even various God and Goddess have been associated with different trees like Bilva Patra (*Aegle marmelos*) is close to Lord Shiva, Peepal (*Ficus religiosa*) to Lord Vishnu, Mango (*Mangifera indica*) to Lord Hanuman etc. The plants which are grown, protected, saved and maintained in temple yards having religious importance and medicinal values. Temples and holy places are the places where many sacred trees are planted to conserve (*Dhiman, 2003; Mohanty et al, 2012 and Kumbhar et al, 2014*) for future use.

There is hardly any report on plants conserved in temple yards of Shergarh sub district of Jodhpur district Rajasthan. So present research work has been undertaken to explore, enlist the flora of temple yards and to evaluate the role of temples in plant biodiversity conservation in particular local region of Jodhpur district.

Jodhpur is located in the Thar Desert of the North West Indian state of Rajasthan. The whole district is divided in seven sub districts or tehsils named Bhopalgarh, Bilara, Jodhpur, Luni, Osian, Phalodi, and Shergarh. In this paper we are studying about the conserved plants in different temple yards of Shergarh sub-district, Jodhpur. Shergarh has altitude of 104 meters above sea level. Its geographical coordinates are 26° 19' 37" North, 72° 17' 44" East.

MATERIALS AND METHODS

Random survey method was conducted for field survey during the year 2015-16 covering the major seasons and definite intervals to collect and identify the plants present in and around 40 temple premises of Shergarh (Photo Plate 1). The information was gathered from temple priests, pujaris, sewaks, temple gardeners (mali), general local people, experienced aged rural people by interview method. A structured questionnaire was used to elicit information from the resource persons using standard methods (Martin, 1995). Plants collected during the random surveys were identified with the help of published regional flora (Bhandari, 1990; Sharma, 2002 a, b),

BSI Jodhpur and by comparing voucher specimens with identified herbarium collection in the herbarium.

Photo Plate 1



Pic.1 Hari Om Mandir, Gopalsar

Pic.2 Mata Rani Bhatiyani Mandir Rawalgarh

Pic.3 Badi Ka Than, Balesar



Pic.4 Gajna Mata Mandir

Pic.5 Ghantiwale Balaji, Popawas

Pic.6 Mahadev Temple, Ajeet Nagar

RESULTS AND DISCUSSION

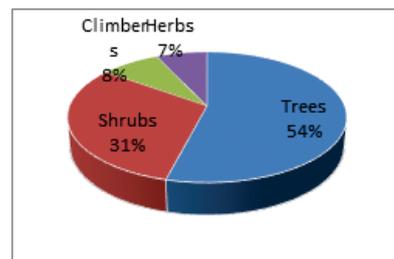


Fig.1 Different life forms of plants 54% Trees, 31% Shrubs, 7% Herbs, 8% Climbers

Taxonomically total 75 plant species belonging to 67 genera and 36 families have been collected. These plant species have many economic importance and pharmacological uses. The data are also presented in a consolidated table form (Table 1) highlighting their local names, botanical names, families and their habits. Among the total plant species there were trees (54%), shrubs (31%), herbs (7%) and climbers (8%) (Fig.1).

Fabaceae family was the most dominant one (Table 1). Khajoor tree (*Phoenix dactylifera* L.) is also being maintained in Hinglaj Mata Temple. It was observed that plants with white flowers (*Datura alba* L., *Cestrum diurnum* L., *Catharanthus roseus* L., *Cestrum nocturnum* L., *Jasminum sambac* L., *Jasminum grandiflorum* L. etc.), with yellow flowers (*Tecomella undulata* D. Don., *Anthocephalus cadamba* Roxb., *Nyctanthes arbor-tristis* L.) and with red flowers (*Nerium indicum* Mill., *Hibiscus rosa-sinensis* L., *Bauhinia variegata* (L.) Benth., *Bougainvillea spectabilis* Willd.) were grown and maintained in temples of Hindu God Shiva, God Vishnu/ Thakur Ji and Goddess Jagdamba/ Chamunda/ Amba Mata Ji respectively. Trees of *Aegle marmelos* L., *Calotropis gigantea* (L.) W.T. Aiton., *Calotropis procera* (Aiton) R.Br., *Elaeocarpus ganitrus* Roxb., *Datura alba* L., *Datura stramonium* L. are being maintained in God Shiva Temple and *Ocimum* spp. ("Vrinda") and *Ficus* spp., are almost maintained in all the temples recorded. Most sacred plants recorded are *Adansonia digitata* L., *Aegle marmelos* (L.) Correa, *Anthocephalus cadamba* Roxb. Miq., *Calotropis gigantea* (L.) W.T. Aiton, *Calotropis procera* (Ait) R.Br., *Cynodon dactylon* (L.) Pers., *Datura alba* L., *Datura stramonium* L., *Elaeocarpus ganitrus* Roxb., *Ficus benghalensis* L., *Ficus religiosa* L., *Ocimum sanctum* L., *Ocimum tenuiflorum* L., *Phyllanthus emblica* L. and *Prosopis cineraria* L. (Table 3). From above collected plants Rohida (*Tecomella undulata* D. Don) and Guggul (*Commiphora wightii* Arn. Bhandari) are critically endangered, Ashoka (*Saraca asoca* (Roxb.) Willd) is vulnerable, Gulmohar (*Delonix regia* (Boj.ex. Hook) Raf. and Morpankhi (*Thuja occidentalis* (L.) Franco.) are Least Concerned and Shatawari (*Asparagus racemosus* Willd) is endangered in its natural habitat according to IUCN (International Union for Conservation of Nature, 2013). So these are threatened plant species and should be conserved.

Table 1. Collected plants conserved in temple yards of Shergarh Sub-district, Jodhpur.

S. No.	Local plant name	Botanical name	Family name	Life form
1	Desi Babul	<i>Acacia nilotica</i> L. Willd.	Fabaceae	Tree
2	Kalp wriksh	<i>Adansonia digitata</i> L.	Malvaceae	Tree
3	Bilvapatra	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Tree
4	Siris	<i>Albizia lebeck</i> (L.) Benth.	Fabaceae	Tree
5	Gwarpatha	<i>Aloe vera</i> (L.) Burm.	Asphodelaceae	Shrub
6	Kadamba Tree	<i>Anthocephalus cadamba</i> Roxb. Miq.	Rubiaceae	Tree
7	Shatawari	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Climber
8	Neem	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree
9	Kitchnar	<i>Bauhinia variegata</i> (L.) Benth.	Fabaceae	Tree
10	Bougai villeda	<i>Bougainvillea spectabilis</i> Willd.	Nyctanginaceae	Shrub
11	Safed Aakara	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Apocynaceae	Shrub
12	Baingni Aakara	<i>Calotropis procera</i> (Ait) R.Br.	Apocynaceae	Shrub
13	Keli	<i>Canna generalis</i> L.	Cannabaceae	Shrub
14	Ker Tree	<i>Capparis decidua</i> (Forssk.) Edgew	Capparaceae	Tree
15	Amaltash	<i>Cassia fistula</i> L.	Fabaceae	Tree
16	Sadabahar	<i>Catharanthus roseus</i> (L.) G. Don	Apocynaceae	Herb
17	Din ka raja	<i>Cestrum diurnum</i> L.	Solanaceae	Shrub
18	Raat ki rani	<i>Cestrum nocturnum</i> L.	Solanaceae	Shrub
19	Nimbu	<i>Citrus limon</i> (L.) Burm.	Rutaceae	Tree
20	Santra	<i>Citrus sinensis</i> (L.) Osbeck	Rutaceae	Tree
21	Apra bael	<i>Clitoria ternatea</i> L.	Fabaceae	Climber
22	Madhumalti bael	<i>Combretum indicum</i> (L.) De Fillippis	Combretaceae	Climber

23	Guggul	<i>Commiphora wightii</i> (Arn.) Bhandari	Bursereaceae	Tree
24	Lasoora	<i>Cordia dichotoma</i> G. Frost	Boraginaceae	Tree
25	Dhoob	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Herb
26	Sheesham	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Tree
27	Gulmohar	<i>Delonix regia</i> (Boj.ex. Hook) Raf	Fabaceae	Tree
28	Safed Dhatura plant	<i>Datura alba</i> L.	Solanaceae	Shrub
29	Kala Dhatura plant	<i>Datura stramonium</i> L.	Solanaceae	Shrub
30	Rudraksha	<i>Elaeocarpus ganitrus</i> Roxb.	Eleocarpaceae	Tree
31	Eukalyptus/ Safeda	<i>Eucalyptus obliqua</i> L. Her.	Myrtaceae	Tree
32	Bad Tree	<i>Ficus benghalensis</i> L.	Moraceae	Tree
33	Peepel	<i>Ficus religiosa</i> L.	Moraceae	Tree
34	Suraj mukhi	<i>Helianthus annuus</i> L.	Asteraceae	Shrub
35	Gudhal	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Shrub
36	Mogra	<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	Shrub
37	Chameli	<i>Jasminum grandiflorum</i> L.	Oleaceae	Climber
38	Adoosa	<i>Justicia adhatoda</i> L.	Acant-haceae	Shrub
39	Mehandi	<i>Lawsonia inermis</i> L.	Lythraceae	Shrub
40	Senjhana	<i>Moringa oleifera</i> Lam.	Moringaceae	Tree
41	Shahtoot	<i>Morus nigra</i> L.	Moraceae	Tree
42	Meetha Neem	<i>Murraya koenigii</i> (L.) Spangel	Rutaceae	Shrub
43	Kela plant	<i>Musa balbisiana</i> L.	Musaceae	Tree
44	Gulabi Kaner	<i>Nerium indicum</i> Mill.	Apocynaceae	Shrub
45	Safed Kaner	<i>Nerium oleander</i> L.	Apocynaceae	Shrub
46	Harsingar	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Tree
47	Tulsi	<i>Ocimum sanctum</i> L.	Lamiaceae	Herb
48	Tulsi shyam	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb
49	Marua	<i>Origanum majorana</i> L.	Lamiaceae	Herb
50	Khajoor	<i>Phoenix dactylifera</i> L.	Arecaceae	Tree
51	Amla	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Tree
52	Champa	<i>Plumeria alba</i> L.	Apocynaceae	Tree
53	Naya asok	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Tree
54	Karanj	<i>Pongamia pinnata</i> L.	Fabaceae	Tree
55	Khejari	<i>Prosopis cineraria</i> L. Druce	Fabaceae	Tree
56	Badaam	<i>Prunus dulcis</i> (Mill.) D. A. Webb	Rosaceae	Tree
57	Amrood	<i>Psidium guajava</i> L.	Myrtaceae	Tree
58	Anar	<i>Punica granatum</i> L.	Lythraceae	Shrub
59	Arand	<i>Ricinus communis</i> L.	Euphorbiaceae	Tree
60	Gulab	<i>Rosa chinensis</i> Jacq.	Rosaceae	Shrub
61	Jalki Tree	<i>Salvadora oleiodes</i> Decne.	Salvadoraceae	Tree
62	Ashoka Tree	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	Tree
63	Jamun	<i>Syzygium cumini</i> L. Skeels.	Myrtaceae	Tree
64	Genda	<i>Tagetes erecta</i> L.	Asteraceae	Shrub
65	Imli	<i>Tamarindus indica</i> L.	Fabaceae	Tree
66	Rohida	<i>Tecomella undulata</i> D. Don	Bignoniaceae	Tree
67	Sagwan	<i>Tectona grandis</i> f. abulden	Lamiaceae	Tree
68	Arjun	<i>Terminalia arjuna</i> (Roxb.) wight & Arn	Combretaceae	Tree

69	Paras people	<i>Thespesia populania</i> (L.) Sol. Ex Correa	Malvaceae	Tree
70	Peli Kaner	<i>Thevetia peruviana</i> (Pers.) K. Schum.	Apocynaceae	Shrub
71	Morpankhi	<i>Thuja occidentalis</i> (L.) Franco.	Cupressaceae	Shrub
72	Giloy	<i>Tinospora cordifolia</i> Willd.	Menispermaceae	Climber
73	Nirgund	<i>Vitex negundo</i> L.	Lamiaceae	Shrub
74	Angoor	<i>Vitis vinifera</i> L.	Vitaceae	Climber
75	Ashwagandha	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Herb

CONCLUSION

Above collected plant species have many ethnobotanical uses and medicinal uses. It is recorded that these temple yards are very much helpful for the conservation of these plants for local and future use as also recorded by Chakraborty and Pal, 2004, Mohanty et al, 2012.

ACKNOWLEDGEMENTS

The authors are thankful to Mr. R.P. Dadhich, the Secretary MSS & VS, Jodhpur and Mr. Ashutosh, the Director, MDMM, Jodhpur for providing necessary facilities. They are also thankful to the local people involved during survey for providing different information. They are also expressing sincere gratitude to Prof. (Dr.) Reena, University of Kota, Kota for her moral support and encouragements.

REFERENCES

1. Badoni, A. and Badoni, K. (2001). Ethnobotanical Heritage. In : Kandari OP, Gusain OP, eds. Garhwal Himalaya; Nature, Culture & Society. Trans Media Srinagar (Garhwal). 125-47.
2. Bhandari, M.M. (1990). Flora of the Indian Desert. Scientific Publishers, Jodhpur.
3. Chakraborty, M.K. and Pal, D.C. (2004). Plant Conservation through Tribal Deities in some Sacred grooves of Purulia district, West Bengal. Ethnobotany. 16 99-102.
4. Dhiman, A.K. (2003). Sacred Plants and their medicinal uses. Daya Publishing House, Delhi.
5. IUCN (2013) IUCN Red list of Threatened species, Version 2013.1 (www.iucnredlist.org).
6. Kumbhar, A., Bharat and Dabgar, J. (2014). To study of Aesthetic values of Some Traditional Worshipping Plants of Dang District. International Journal of Scientific Research April; 3(4)46-47.
7. Martin, G.J. (1995). Ethnobotany: A method manual. Chapman and Hall, London.
8. Mohanty, R., Tripathi, B.K. and Panda, T. (2012). Role of Temples and Other Holy Places in Plant Conservation of Odisha, India. International Journal of Conservation Science. 3(4) 301-308.
9. Sharma, N.K. (2002)(a). Ethno Medico Religious plants of Hadoti Plateau of Rajasthan. A preliminary survey. In: Ethnobotany Trivedi, P.C. (Ed.) Avishkar publishers, Jaipur, India.
10. Sharma, N.K. (2002)(b). The flora of Rajasthan. Avishkar publishers, Jaipur, India.