

Conservation of Plant Biodiversity in Temple Yards of Luni Sub District, Jodhpur, Rajasthan, India

*Shubha Dadhich¹, Dr. N. K. Dwivedi²

Faculty of Science, Maharshi Dadhichi Mahila Mahavidyalaya, Jodhpur- 342005, Rajasthan, India.

Corresponding Author: Shubha Dadhich

Abstract: An ethnobotanical survey of plants associated with temple rituals and nurtured in the temple yards in the Luni sub district of Jodhpur carried out during 2015-16. The study documents 74 plant species of trees (54%), shrubs (34%), herbs (7%) and climbers (5%) conserved in studied temple yards of Luni sub district. These plants belonging to 70 genera and 37 families are protected and conserved in religious places, two plants Rohida (*Tecomella undulata* D. Don) and Ashoka (*Saraca asoca* (Roxb). Willd) are endangered and vulnerable plant species respectively according to IUCN (International Union for Conservation of Nature). The paper enumerates their local names, botanical names and life forms. Recorded economic and medicinal values of these plants are described.

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

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I. Introduction

Nature provides man with all the basic requirements for his existence which is one of the reasons why nature is respected. In India from early civilization care and respect for nature has been influenced by religious beliefs and indigenous practices. India has a long wise plant conservation strategies that is useful to people and society.

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 plants¹. Plants being nature's major processors of solar energy which is vital for our existence and provider of flowers, fruits, wood or medicine are worshipped by the Hindus as a matter of gratitude. Trees are parts of our ceremonies, festivals and our rituals. Even various God and Goddess have been associated with different trees like Bilva Patra (*Aegle marmelos*) is closed to Lord Shiva, People (*Ficus religiosa*) to Lord Vishnu, Mango (*Mengifera indica*) to Lord Hanuman etc. Having religious importance and medicinal values, the plants are grown protected, saved and maintained in temple yards. Temples and holy places are the places where many sacred trees are planted to conserve^{2,3,4} for future use.

There is hardly any report on plants conserved in temple yards 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.

Land and culture

Jodhpur also called as Suncity is the second largest city in the Indian state of Rajasthan. It is located in the Thar Desert of the North West Indian state of Rajasthan.

Its geographical coordinates are 26° 17' 12" North, 73° 1' 48" East. The whole district is divided in seven sub districts or tehsils named Bhopalgarh, Bilara, Jodhpur, Luni, Osian, Phalodi, Shergarh. In this paper we are studying about the conserved plants in different temple yards of Luni sub-district, Jodhpur. Luni has altitude of 182 meters above sea level.

Luni sub-district consists of people having different religions as Hindu, Jainism, Islamic, Christians. Of all the religions the predominant one is Hinduism. The religion consists in the worship of Brahma, Shiva, Shakti, Vishnu and other local Gods and Goddess. Another important and widely followed religion is Jainism. Other main religion is Bishnoins. They are followers of Saint Guru Jambheshwar Ji, nature lovers and are keen to protect nature, especially plants and animals.

With all these religions cultures civilization is maintained and conserved by the festivals celebrated in different temples. Temples may be ancient or newly developed with manmade gardens. At the surroundings and campus of these temples many religious, ornamental, medicinal and economically important plants are grown.

II. Methodology

Field survey by random survey method was conducted during the year 2015-16 covering the major seasons and definite intervals to collect and identify the plants present in and around temples premises of Luni (Photo Plate 1). The information on different uses of the plants have been described after gathering informations 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 methods⁵. Plants collected during the random surveys were identified with the help of published regional flora^{6,7}, BSI Jodhpur and by comparing voucher specimens with identified herbarium collection in the herbarium. Name of informants, temple and villages of Luni where random survey was followed are presented in Table 1.

Photo Plate 1.



Pic.1: *Ficus benghalensis* L.
(Goreswar Mahadev Mandir
in Kudi Village)



Pic.2: *Salvadora oleoides* Decne.
(Guru Jambheshwar Mandir
in Khejarali Village)



Pic.3: *Prosopis cineraria* L.
(Mahadev Mandir
in Nandvan Village)



Pic.4: Raja Ram Patel Mandir
(Shikarpura)



Pic.5: Hinglaj Mata Mandir
(Salawas)



Pic.6: Guru Jambheshwar Mandir
(Khejarali)

Table 1. Name of informants, temples and villages of Luni Sub-district, Jodhpur.

S.No.	Informant's name	M/F	Age	Temple name	Village
1	Biramdas Ji Vaishnav	M	45	Bhuwal Mata Ji Mandir	Bhirami
2	Manglaram Ji	M	47	Veer Teja Ji Mandir	Boranada
3	Bhawari Devi	F	55	Shree Charbhuj Mandir	Chawan
4	Badrilal Ji Prajapat	M	45	Pukheswer Mahadev Mandir	Danasni
5	Durgadas Vaishnav	M	60	Mahalaxmi Mandir	Dhundhara
6	Kailash Giri Ji	M	45	Bharishwari Mata Mandir	Fitkasni
7	Shukharam Ji Prajapat	M	40	Shree Shree Yade Dham	Jhalamand
8	Sunil Vaishnav	M	35	Shree Shree Yade Dham	Jhalamand
9	Lakhan Puri Ji	M	57	Narbdeshwar Mahadev Mandir	Jhalamand
10	Kamlesh Puri Ji	M	32	Shiv Mandir (Shiv Duna)	Jhalamand
11	Chelpuri Maharaj Ji	M	53	Shree Omkar Giri Maharaj Mandir	Kankani
12	Ashokanand Ji	M	26	Jambheshwar Dham	Khejarli
13	Sanwerlal Ji	M	16	Jambheshwar Dham	Khejarli
14	Champalal Ji	M	42	Shree Goreshwar Mahadev Mandir	Kudi
15	Bhagirath Ji	M	70	Laxmi Narayan Mandir	Luni
16	Shivratan Sharma	M	65	Shree Yade Mandir	Luni
17	Bhagirath Ji	M	64	Khivanj Mata Mandir	Nandwan
18	Bhanwara Ram Ji	M	72	Mahadev Mandir	Nandwan
19	Ram Bharti Ji	M	65	Pal Bala Ji Mandir	Pal
20	Kishan Ji	M	35	Baba Ramdev Mandir	Palasni
21	Amra Ram Ji	M	62	Kabir Ashram Mandir	Salawas
22	Askhybharti Ji	M	22	Hinglaj Mata Ji Mandir	Salawas
23	Tejpuri Gosawmi Ji	M	68	Mahadev Mandir	Sangriya
24	Bheru Prajapat Ji	M	19	Shubh Hanuman Mandir	Sangriya
25	Jetaram Ji	M	40	Shubh Hanuman Mandir	Sangriya
26	Sardha Ji	F	33	Phabu Ji Mandir (Bhomiya nagar)	Sangriya
27	Laxman Ji	M	45	Chanda Parsv Mahashakti Pith Padhmawati	Sangriya
28	Mohanlal Ji	M	52	Shama Devi Mata Ji Mandir	Sangriya
29	Vijay Ji	M	57	Ganesh Mandir	Sangriya
30	Shavaram Ji	M	51	Sati Mata Mandir	Sarencha
31	Keshav Bahadur Ji	M	35	Raja Ram Patel Dham	Shikarpura

Table 2. Collected plants conserved in temple yards of Luni 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	Kumthia	<i>Acacia senegal</i> L. Willd.	Fabaceae	Small tree
3	Kalp wriksh	<i>Adansonia digitata</i> L.	Malvaceae	Tree
4	Bilvapatra	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Tree
5	Siris	<i>Albizia lebbek</i> (L.) Benth.	Fabaceae	Tree
6	Gwarpatha	<i>Aloe vera</i> (L). Burm.	Asphodelaceae	Shrub
7	Sita fal	<i>Annona squamosa</i> L.	Annonaceae	Small tree
8	Kadamba Tree	<i>Anthocephalus cadamba</i> Roxb. Miq.	Rubiaceae	Tree
9	Reliya	<i>Aralia recemosa</i> L.	Araliaceae	Small tree
10	Neem	<i>Azadirachta indica</i> A. Juss	Meliaceae	Tree
11	Kitchnar	<i>Bauhania variegata</i> (L.) Benth.	Fabaceae	Tree
12	Bougain villea	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Shrub
13	Safed Aakara	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Apocynaceae	Shrub
14	Baingni Aakara	<i>Calotropis procera</i> (Ait) R.Br.	Apocynaceae	Shrub
15	Guggul	<i>Commiphora wightii</i> (Arn. Bhandari)	Burseraceae	Tree
16	Keli	<i>Canna generalis</i> L.	Cannabaceae	Shrub
17	Bhang	<i>Cannabis sativa</i> L.	Cannabaceae	Shrub
18	Ker Tree	<i>Capparis decidua</i> (Forssk.)	Capparaceae	Tree
19	Amaltash	<i>Cassia fistula</i> L.	Fabaceae	Tree
20	Sadabahar	<i>Catharanthus roseus</i> L.G.Don	Rosaceae	Herb
21	Din ka raja	<i>Cestrum diurnum</i> L.	Solanaceae	Shrub
22	Raat ki raani	<i>Cestrum nocturnum</i> L.	Solanaceae	Shrub
23	Palm tree	<i>Chamaerops humilis</i> L.	Arecaceae	Small tree
24	Nimbu	<i>Citrus limon</i> (L.) Burm.	Rutaceae	Tree
25	Apra bael	<i>Clitoria ternatea</i> L.	Fabaceae	Climber
26	Madhumalti bael	<i>Combretum indicum</i> (L.) De Fillipps	Combretaceae	Climber
27	Lasoor	<i>Cordia dichotoma</i> G. Frost	Boraginaceae	Tree
28	Dhoob	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Herb
29	Sheesham	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Tree
30	Gulmohar	<i>Delonix regia</i> (Boj.ex. Hook) Raf	Fabaceae	Tree
31	Safed Dhatura plant	<i>Dhatura alba</i> L.	Solanaceae	Shrub
32	Kala Dhatura plant	<i>Dhatura stramonium</i> L.	Solanaceae	Shrub
33	Rudraksha	<i>Elaeocarpus ganitrus</i> Roxb.	Eleocarpaceae	Tree

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34	Eukalyptus/ Safeda	<i>Eucalyptus obliqua</i> L. Her.	Myrtaceae	Tree
35	Bad Tree	<i>Ficus benghalensis</i> L.	Moraceae	Tree
36	Peepal	<i>Ficus religiosa</i> L.	Moraceae	Tree
37	Kapaas	<i>Gossypium hirsutum</i> L.	Malvaceae	Shrub
38	Falsa	<i>Grewia asiatica</i> L.	Malvaceae	Small tree
39	Suraj mukhi	<i>Helianthus annuus</i> L.	Asteraceae	Shrub
40	Gudhal	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Shrub
41	Mogra	<i>Jasminac sambac</i> (L.) Aiton	Oleaceae	Shrub
42	Chameli	<i>Jasminum grandiflorum</i> L.	Oleaceae	Climber
43	Mehandi	<i>Lawsonia inermis</i> L.	Lythraceae	Shrub
44	Senjhana	<i>Moringa oleifera</i> Lam.	Moringaceae	Tree
45	Shahtoot	<i>Morus nigra</i> L.	Moraceae	Small tree
46	Meetha Neem	<i>Murraya koenigii</i> (L.) Spengel	Rutaceae	Shrub
47	Kela plant	<i>Musa balbisiana</i> L.	Musaceae	Tree
48	Gulabi Kaner	<i>Nerium indicum</i> Mill.	Apocynaceae	Shrub
49	Safed Kaner	<i>Nerium oleander</i> L.	Apocynaceae	Shrub
50	Harsingar	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Tree
51	Tulsi	<i>Ocimum sanctum</i> L.	Lamiaceae	Herb
52	Tulsi shyam	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb
53	Amla	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Tree
54	Champa	<i>Plumeria alba</i> L.	Apocynaceae	Tree
55	Naya asok	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Tree
56	Karanj	<i>Pongamia pinnata</i> L.	Fabaceae	Tree
57	Khejari	<i>Prosopis cineraria</i> L.	Fabaceae	Tree
58	Badaam	<i>Prunus dulcis</i> (Mill.) D. A. Webb	Rosaceae	Tree
59	Amrood	<i>Psidium guajava</i> L.	Myrtaceae	Tree
60	Anar	<i>Punica granatum</i> L.	Lythraceae	Shrub
61	Arand	<i>Ricinus communis</i> L.	Euphorbiaceae	Tree
62	Gulab	<i>Rosa canina</i> L.	Rosaceae	Shrub
63	Jalki Tree	<i>Salvadora oleiodes</i> Decne.	Salvadoraceae	Tree
64	Ashoka Tree	<i>Saraca asoca</i> (Roxb.) Willd.	Fabaceae	Tree
65	Jamun	<i>Syzygium cumini</i> L. Skeels.	Myrtaceae	Tree
66	Genda	<i>Tagetes erecta</i> L.	Asteraceae	Shrub
67	Rohida	<i>Tecomella undulata</i> D. Don	Bignoniaceae	Tree
68	Biani	<i>Thephrosia purpurea</i> L. Pers.	Fabaceae	Small tree
69	Peli Kaner	<i>Thevetia peruviana</i> (Pers.) K. Schum.	Apocynaceae	Shrub
70	Morpankhi	<i>Thuja occidentalis</i> (L.) Franco.	Cupressaceae	Shrub
71	Giloy	<i>Tinospora cordifolia</i> Willd.	Menispermaceae	Climber
72	Rambans	<i>Typha augustifolia</i> L.	Typhaceae	Shrub
73	Nirgund	<i>Vitex nigundo</i> L.	Lamiaceae	Shrub
74	Ashwagandha	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Herb

Table 3. Ethanobotanical uses ¹⁰ of plant species collected from temple yards of Luni Sub-district, Jodhpur.

S. No.	Plant name	Economic values of plant
1	<i>Acacia nilotica</i> (L.) Willd.	Pods and leaves as fodder for cattle; Twigs for toothbrush; Gum for making medicines, dyes and paints; Agroforestry tree.
2	<i>Acacia senegal</i> (L.) Willd.	In vegetable, curry, pickles, in landscape gardening; Afforestation, controls soil erosion, drought resistant plant.
3	<i>Adansonia digitata</i> L.	Leaves as fodder for ruminant, oilmeal as food of animals; Sacred plant.
4	<i>Aegle marmelos</i> (L.) Correa	For making fruit juice, sharbat, lemonade; Sacred plant.
5	<i>Albizia lebeck</i> (L.) Benth.	Used for environmental management, forage, medicine and wood produce timber.
6	<i>Aloe vera</i> (L.) Burm.	As raw edible form; Use for many juices, skin lotion, ointments, shampoo, oil; Use as anti ageing gel; For decoration.
7	<i>Annona squamosa</i> L.	Heat extracted oil is used in crops to control pest as biopesticide.
8	<i>Anthocephalus cadamba</i> Roxb. Miq.	For reforestations programs, make soil fertile, encourage soil fertility; Sacred plant.
9	<i>Aralia recemosa</i> L.	Prevent soil erosion and desertification; Leaves to make broom, for weaving mats, carrier basket.
10	<i>Azadirachta indica</i> A. Juss	Wood for essential oil and powder; Twigs for tooth brush; Mosquito repellent, Shady plant, bark give tannin; Seed pulp for industrial fermentation.
11	<i>Bougainvillea spectabilis</i> Willd.	Pest free plant; Branches for making yellow dye; Wood for construction furniture, barrel, house building.
12	<i>Bouhinia variegata</i> (L.) Benth.	Ornamental plant; Kachnaar curry is famous Indian food recipe; Flowers are used to make garlands and bouquet.
13	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Mosquito controlling plant, allelopathic effect; Leaves have larvicidal repellent and ovicidal properties; Sacred plant.
14	<i>Calotropis procera</i> (Ait) R.Br.	Mosquito controlling plant, allelopathic effect; Leaves have larvicidal repellent and ovicidal properties; Sacred plant.
15	<i>Commiphora wightii</i> (Arn. Bhandari)	Stem produces gum; Wood for firewood.
16	<i>Canna generalis</i> L.	Rich in starch, seeds used as beads, used to form fermented alcohol; Smoke of dried leaves as insecticidal.

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17	<i>Cannabis sativa</i> L.	Hemp seed oil is used for cooking, lamps, laquers and paints, caged bird feed, tinctures and ointments are produced.
18	<i>Capparis decidua</i> (Forssk.)	In making vegetable, curry, pickles; In landscape gardening, afforestation, controls soil erosion, drought resistant plant.
19	<i>Cassia fistula</i> L.	Decorative plant, flower for temple use.
20	<i>Catharanthus roseus</i> (L.) G. Don	Ornamental plant, flowers for making Garlands.
21	<i>Cestrum diurnum</i> L.	Ornamental plant.
22	<i>Cestrum nocturnum</i> L.	Ornamental; Plant extract have larvicidal properties against <i>Aedes aegyptii</i> mosquito.
23	<i>Chamaerops humilis</i> L.	Prevent soil erosion and desertification; Leaves to make broom, for weaving mats, carrier basket.
24	<i>Citrus limon</i> (L.) Burm.	Commercial source of citric acid, juice as cleaning agent, deodorizing, bleaching, disinfection; Use in spa, aromapathy; Insecticidal effect; Invisible ink.
25	<i>Clitoria ternatea</i> L.	Ornamental plant, flower for temple use.
26	<i>Combretum indicum</i> L.	Ornamental plant, flowers for making Garlands.
27	<i>Cordia dichotoma</i> G. Frost	Immature fruits for pickle production; Leaves as vegetable fodder.
28	<i>Cynodon dactylon</i> (L.) Pers.	Use in pellet and silage formation; Sacred plant.
29	<i>Dalbergia sissoo</i> Roxb.	Sacred fire; Economic timber; Tree for tree farming, agro forestry and deciduous afforestation.
30	<i>Delonix regia</i> (Boj.ex. Hook)	Reducing air pollution; Increase soil fertility; Flowers are used for making bouquet.
31	<i>Dhatura alba</i> L.	Sacred plant; Mosquito repellent.
32	<i>Dhatura stramonium</i> L.	Sacred plant; Mosquito repellent.
33	<i>Elaeocarpus ganitrus</i> Roxb.	Used for making sacred beads, sacred plant.
34	<i>Eucalyptus obliqua</i> L. Her.	Oil used as insecticide (Malaria); Allelopathic plant; For aroma therapy.
35	<i>Ficus benghalensis</i> L.	Shady tree; Wood for production of sacred fire; Tree give rope paper polish for silver and other metal; Dye for wool and silk; Sacred plant.
36	<i>Ficus religiosa</i> L.	Shady tree; Dried leaves for Acrylic Painting; Wood for production of sacred fire; Leaves as fodder for camel; Bark to produce red dye; Sacred plant.
37	<i>Gossypium hirsutum</i> L.	Use for fabric production, in textile industries; Cotton seed oil as vegetable oil; Fire hoses making; Binola for dhoop batti.
38	<i>Grewia asiatica</i> L.	Raw fruit; For making juices, candies, sharbat, squash.
39	<i>Helianthus annuus</i> L.	Sunflower butter, seed oil for cooking, produce margarine and biodiesel; Seed cake as livestock; Ornamental plant.
40	<i>Hibiscus rosa-sinensis</i> L.	Bark have strong bast fibres for making ropes; Landscape shrub, some species of plant for paper making; Flowers for tea making.
41	<i>Jasminac sambac</i> (L.) Aiton	Decorative flowers used for making tea, perfumes, shampoo, soaps, incense, flowers are used to make thick garlands for hair adornments.
42	<i>Jasminum grandiflorum</i> L.	Flowers and oils for cosmetic uses.
43	<i>Lawsonia inermis</i> L.	Having body art quality, hair improvement quality; Used to dye silk, wool and leather.
44	<i>Moringa oleifera</i> Lam.	Decorative medicinal plant; Flower for temple use.
45	<i>Morus nigra</i> L.	Give natural fruit; Useful in cultivation of silk worms.
46	<i>Murraya koenigii</i> (L.) Spangel	Use in food making as spice; Use in soap making, scent, air freshner, bath, massage oil, spa and health clinic, insence, facial and hair treatment.
47	<i>Musa balbisana</i> L.	Edible stem, stem fibre as natural craft material; Leaf as leaf platters; Steamed banana leaves for food packing.
48	<i>Nerium indicum</i> Mill.	For decoration, afforestation; Leaves and bark as insecticide and rat poison.
49	<i>Nerium oleander</i> L.	Ornamental; For landscaping, volerent for poor soil and drought; Poisonous for pests.
50	<i>Nyctanthes arbor-tristis</i> L.	Sacred and ornamental plant.
51	<i>Ocimum sanctum</i> L.	Sacred plant; Mosquito repellent.
52	<i>Ocimum tenuiflorum</i> L.	Ornamental and sacred plant.
53	<i>Phyllanthus emblica</i> L.	Fruit used as pickle, jam, jelly, candy and for cosmetic uses; Sacred plant.
54	<i>Plumeria alba</i> L.	Ornamental plant; Flower essential oil for making incense and perfumes; Flowers for making garlands.
55	<i>Polyalthia longifolia</i> Thw.	Decorative plant; Landscape tree; Use to make pencil, matchstick, boxes.
56	<i>Pongomia pinnata</i> L.	Shady tree; Host plant for lac insect, used for land scapping purpose, bark for making rope; Wood for firewood; Oil as lamp oil, in soap making and a lubricants.
57	<i>Prosopis cineraria</i> L.	Pods as vegetable; Bark is excellent fuel give high quality charcoal; Stabilize shifting of sand dunes; Gives gum; Sacred plant.
58	<i>Prunus dulcis</i> (Mill.) D. A. Webb	Oil is for good skin and brain, dry fruit; Oil for hair.
59	<i>Psidium guajava</i> L.	As raw fruit, use for making candies, preserves, jellies, jams, juices, marmalades, red form is used in sauces.
60	<i>Punica granatum</i> L.	As raw fruit, use for cooking, meal garnishes, juice blends, smoothies, alcoholic beverages such as cocktails and wine, seeds for spice Anardana.
61	<i>Ricinus communis</i> L.	Castor oil has acaricidal and insecticidal activity; Methanolic extract of leaves used as antimicrobial; Castor oil used as motor lubricant.
62	<i>Rosa canina</i> L.	Decorative plant, flower for temple use.
63	<i>Salvadora oleiodes</i> Decne.	Natural tooth brush; Leaves as a salad.
64	<i>Saraca asoca</i> (Roxb.) Willd.	Leaves are used in religious festivals for decoration; Sacred plant.
65	<i>Syzygium cumini</i> L. Skeels.	Raw fruit; For making juices, candies.
66	<i>Tagetes erecta</i> L.	Oil of flower in perfumes; For food colour lutien is used; Dried flowers used as feed

		of poultry.
67	<i>Tecomella undulata</i> D. Don	Having soil binding capacity; Gives firewood; Leaves, flowers and pods as a fodder for camel, sheep and goats; Give good quality timber.
68	<i>Thephrosia purpurea</i> L. Pers.	Use for fish poison; Use in cosmetics.
69	<i>Thevetia peruviana</i> (Pers.) K. Schum.	Used in pest control, very poisonous.
70	<i>Thuja occidentalis</i> (L.) Franco.	Leaves and seeds produces essential oil – Borneol; Ornamental plant.
71	<i>Tinospora cordifolia</i> Willd.	Ornamental and medicinal uses.
72	<i>Typha augustifolia</i> L.	Use to make chair seat; Many parts are edible; Seeds have linoleic acid food for cattle; Used for thermal insulators in building; Bio energy crop.
73	<i>Vitex nigundo</i> L.	Use for treating stored garlic against pests, Used to control mosquito population.
74	<i>Withania somnifera</i> (L.) Dunal	Berries are used in substitute of rennet in cheese making.

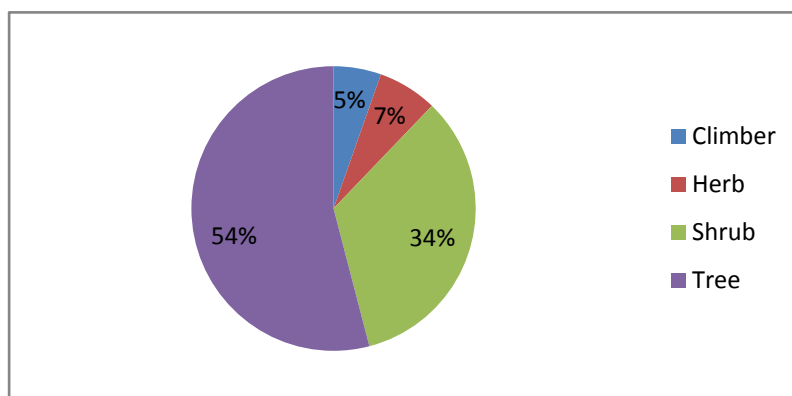
Table 4. Medicinal values ^{11,12,13} of plant species collected from temple yards of Luni Sub-District, Jodhpur.

S. No.	Plant name	Medicinal Importance
1	<i>Acacia nilotica</i> (L.) Willd.	Bark for mouth ulcers and weak gums; Leaves for leucorrhoea and eye redness; Pods for spermatorrhoea.
2	<i>Acacia senegal</i> (L.) Willd.	Seeds for better digestion.
3	<i>Adansonia digitata</i> L.	Bark and leaves antioxidant, antipyretic, antimicrobial, antiviral for herpes, polio viruses.
4	<i>Aegle marmelos</i> (L.) correa	Fruit as stool binding, for nausea, diarrhoea, blood disorder, leucorrhoea, stress, insomnia, peptic ulcers.
5	<i>Albizia lebeck</i> (L.) Benth.	Bark seeds as astringent, tonic for diarrhoea, dysentery, gonorrhoea, use in cough, asthma, cervical gland.
6	<i>Aloe vera</i> (L.) Burm.	As anti aging gel, improve digestion, used in weight loss diets, prevent hair fall and dandruff.
7	<i>Annona squamosa</i> L.	Anti malarial, anti diabetic, hepatoprotective, antiulcer, analgesic, anti inflammatory, antioxidant.
8	<i>Anthocephalus cadamba</i> Roxb. Miq.	For diabetes.
9	<i>Aralia recemosa</i> L.	For dry cough, asthma, frequent sneezing.
10	<i>Azadirachta indica</i> A. Juss	Seeds, bark, leave as antiseptic, antiviral, antipyretic, anti inflammatory, antiulcer, and antifungal.
11	<i>Bougainvillea spectabilis</i> Willd.	Anti inflammatory, ant diabetic, antibacterial.
12	<i>Bouhinia variegata</i> (L.) Benth.	For diabetes, inflammatory conditions, tumors, liver problems, ulcers, cancer, thyroid problems, PCODs.
13	<i>Calotropis gigantea</i> (L.) W.T. Aiton	In parasitic infection of elephantiasis and worms, in epilepsy hysteria, fever, muscular spasm.
14	<i>Calotropis procera</i> (Ait) R.Br.	Diarrhoea, constipations, stomach ulcers, toothaches, cramps, joint pain, leprosy, snack bite.
15	<i>Commiphora wightii</i> (Arn. Bhandari)	Weight reducing agent, in liver problem, ulcer sore, urinary problem, intestinal worms, swelling.
16	<i>Canna generalis</i> L.	Tuber is used for triturating in preparation of Ayurvedic medicines.
17	<i>Cannabis sativa</i> L.	For stress, anxiety, insomnia, indigestion, body pain, blood pressure problems; Oil for eczema, hair, dry skin.
18	<i>Capparis decidua</i> (Forssk.)	Root for swollen joints, stomach problems.
19	<i>Cassia fistula</i> L.	In common cold, constipation, liver disorder, leucoderma, diabetes, Fruit for blood purification.
20	<i>Catharanthus roseus</i> L.G.Don	Leaves, stem as anticancer, antitumor agent, control diabetes, high blood pressure, improve brain health.
21	<i>Cestrum diurnum</i> L.	Leaves are Vit.D3 source.
22	<i>Cestrum nocturnum</i> L.	Toxic plant.
23	<i>Chamaerops humilis</i> L.	For diabetes, gastric pain, constipations.
24	<i>Citrus limon</i> (L.) Burm.	Fruit juices for constipation, vomiting, tastelessness, ingestion, liver problems, depression, dehydration, worm infestation.
25	<i>Clitoria ternatea</i> L.	Promote neurological health; Memory enhancing.
26	<i>Combretum indicum</i> L.	Root seeds, fruits as anti helmenthic; Roots for rheumatism; Fruit to combat nephritis.
27	<i>Cordia dichotoma</i> G. Frost	Coolent, for cough biliousness and internal haemorrhage, bark paste for eruptive boils, anti-inflammatory.
28	<i>Cynodon dactylon</i> (L.) Pers.	Astringent, coolent, haemostatic, to stop bleeding from wounds.
29	<i>Dalbergia sissoo</i> Roxb.	Siddha medicine for skin and stomach disorder, antipyretic; Leaves for eye pain painful urination.
30	<i>Delonix regia</i> (Boj.ex. Hook) Raf	Antibacterial, antioxidant, anti-inflammatory, antidiabetic, antiulcer, hepatoprotective, anti diarrheal.
31	<i>Dhatura alba</i> L.	Analgesic, sedative, anti-inflammatory.
32	<i>Dhatura stramonium</i> L.	Leaves relieve pain, analgesic, antispasmodic, expectorant hypnotic, cardiac stimulant, uterine stimulant.
33	<i>Elaeocarpus ganitrus</i> Roxb.	Stress reliever, reducing circulatory problem.
34	<i>Eucalyptus obliqua</i> L. Her.	In headache, nausea, body pain, muscle relaxant.
35	<i>Ficus benghalensis</i> L.	Leaves as astringent; Aerial roots prevent gum diseases, tooth decay, anti bacterial, antioxidants.
36	<i>Ficus religiosa</i> L.	Bark for gonorrhoea, jaundice, ulcers, inflammations and swelling in the

		neck; Leaf juice for ear drops.
37	<i>Gossypium hirsutum</i> L.	Bark in folk remedies as abortifacient to induce a miscarriage.
38	<i>Grewia asiatica</i> L.	Fruit stomachic, astringent, coolant; Bark demulcent, anti rheumatic, for diabetes, heart problem.
39	<i>Helianthus annuus</i> L.	Leaves as astringent, diuretic, expectorant, in high fever, malaria, lung ailments; Roots for pains.
40	<i>Hibiscus rosa-sinensis</i> L.	Leaves for healthy hair.
41	<i>Jasminac sambac</i> (L.) Aiton	Antidepressant, antiseptic, expectorant, antispasmodic, flowers for intestinal worms, boils, cancer.
42	<i>Jasminum grandiflorum</i> L.	For eye disease, skin disease, headache, in bleeding disorder menorrhagia, rectal bleeding.
43	<i>Lawsonia inermis</i> L.	For burning skins, chronic wounds, ulcers, antiviral for herpes, as coolant.
44	<i>Moringa oleifera</i> Lam.	Anti oxidants, good for muscles, bones, skin, for rheumatism, asthma, cancer, thyroid disorders, and anemia.
45	<i>Morus nigra</i> L.	As cooling agent, anthelmintic. astringent, for cleaning throat.
46	<i>Murraya koenigii</i> (L.) Spangel	Root bark and leaves in vomiting, dysentery, antiemetic, purgative, febrifuge, analgesic, graying of hair.
47	<i>Musa balbisiana</i> L.	High Fe for Hb, increase K in blood as brain tonic, contain serotonin called happy hormone, antiulcer.
48	<i>Nerium indicum</i> Mill.	Astringent, expectorant, induces the termination of embryo.
49	<i>Nerium oleander</i> L.	Drugs against cancer, bark for skin disease, leprosy, abortion, root paste for scorpion sting and snake bite.
50	<i>Nyctanthes arbor-tristis</i> L.	Seeds, flowers, leaves as immunostimulant, antileishmanial, antiviral, antifungal, in siatica, rheumatic pain.
51	<i>Ocimum sanctum</i> L.	Used in bronchitis, malaria, diarrhea, skin disease, arthritis, eye disease. Antibacterial, antifungal, analgesic nature.
52	<i>Ocimum tenuiflorum</i> L.	Balancing different process of body, helpful for adapting stress, astringent, promote longevity.
53	<i>Phyllanthus emblica</i> L.	Reduce blood sugar level, cure sore throat, maintain cholesterol level, good for heart.
54	<i>Plumeria alba</i> L.	Root bark as purgative, detergent treat herpes; Bark for syphilitic ulcers; Seeds with haemostatic properties.
55	<i>Polyalthia longifolia</i> Sonn.	Antibacterial, antioxidant, anti-inflammatory, anti-leishmanial, antifungal, antidiabetic, antiulcer.
56	<i>Pongomia pinnata</i> L.	In urine disorder, piles, worm infestation, oil for skin disorder.
57	<i>Prosopis cineraria</i> L.	Astringent. Bark as an antihelmintic, tonic; Treatment for asthma, bronchitis, dysentery, skin disorders.
58	<i>Prunus dulcis</i> (Mill.) D. A. Webb	Rich nutritional value.
59	<i>Psidium guajava</i> L.	Leaves as antioxidants, anti inflammatory agent, antibacterial; Fruits are for weight loss and sugar control.
60	<i>Punica granatum</i> L.	Juice is for heart problem, dental care, cancer anemia, osteoarthritis, stomach problems, and healthy skin.
61	<i>Ricinus communis</i> L.	Anti diabetic, antimicrobial, antifungal, antioxidants, antitumor, central analgesic, anti asthmatic.
62	<i>Rosa canina</i> L.	Diuretic, laxative, headache, digestion, gargle for sore throat; Rose water for healthy skin.
63	<i>Salvadora oleiodes</i> Decne.	Medicine for rheumatism, cough, asthma, scurvy, piles; Flowers for stimulant
64	<i>Saraca asoca</i> Roxb.	Bark has Na, Si, Mg, Fe, Ca, Al, Sr; Bark seeds and flowers for gynecological, uterine problems, diabetes.
65	<i>Syzygium cumini</i> L. Skeels.	Loaded with antioxidants and flavanoids; Dried, powdered seeds for diabetes, minimize cancer risk.
66	<i>Tagetes erecta</i> L.	Anti helminthic, diuretic, stomachic, indigestion, colic, coughs, dysentery, sore ulcers, eczema, rheumatism.
67	<i>Tecomella undulata</i> D. Don	Bark for syphilis and for curing urinary disease, enlargement of spleen, gonorrhea, leucoderma and liver disease.
68	<i>Thephrosia purpurea</i> L. Pers.	Roots for dyspepsia, diarrhea, anti helminthes, antipyretic, leprosy, ulcers, rheumatism, asthma.
69	<i>Thevetia peruviana</i> (Pers.) K. Schum.	Milky sap heart stimulant; Leaf and bark for swollen tissue, amenorrhea.
70	<i>Thuja occidentalis</i> (L.) Franco.	Leaves are antibacterial, antipyretic, antitussive, astringent, diuretic, used to improve hair.
71	<i>Tinospora cordifolia</i> Willd.	For digestion, treat all types of fever, healing of wounds, good tonic for liver and stomach, allergy problems.
72	<i>Typha augustifolia</i> L.	Used in hyper cholesterol; Ash for wounds.
73	<i>Vitex nigundo</i> L.	Leaves and roots for eczema, ringworm, liver problem, spleen enlargement, gout, rheumatic pain, backache.
74	<i>Withania somnifera</i> (L.) Dunal	Tuberous root as astringent, for tissue building, nervous breakdown; Seeds for stomach pain, indigestion.

III. Results

Fig.1 Different life forms of plants 54% Trees, 34% Shrubs, 7% Herbs, 5% Climbers



IV. Discussion And Conclusion

Taxonomically total 74 plant species belonging to 70 genera and 37 families have been collected. From the collected data a plants list of different families with their traditional uses, plant parts used, botanical names, families and specific requirements in temples is made. These plant species have many economic importance and pharmacological uses. The data are also presented in a consolidated table form (Table 2) highlighting their local name, botanical name, family and their habits. Among the total plant species there were trees (54%), shrubs (34%), herbs (7%) and climbers (5%) (Fig.1).

Fabaceae family was the most dominant one (Table 2). Palm tree (*Chamaerops humilis* L.) and Bhang (*Cannabis sativa* L.) are also being maintained in Narbdeshwar Mahadev Temple, Jhalamand and Mahadev Temple, Nandvan respectively.

It was observed that plants with white flowers (*Datura alba* L., *Cestrum diurnum* L., *Catharanthus roseus* L., *Cestrum nocturnum* L. *Jasminac 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., *Cannabis sativa* L., *Eleaocarpus ganitrus* Roxb., *Datura alba* L., *Datura stromonium* 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 stromonium* 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 Ashoka (*Saraca asoca* (Roxb.) Willd) are endangered and vulnerable plant species respectively according to IUCN (International Union for Conservation of Nature, 2013). So these are threatened plant species and should be conserved.

Above collected plant species have many ethnobotanical uses (Table 3).

Medicinal uses of these plants are presented in Table 4. It is recorded during present study that these medicinal plants maintained in different temple yards are used as remedies for various ailments by local people whenever there is requirement. 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 Pal⁹.

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References

- [1] Badoni A, Badoni K. Ethno botanical Heritage. In: Kandari OP, Gusain OP, eds. Garhwal Himalaya; Nature, Culture & Society. Trans Media Srinagar (Garhwal) 2001; 125-47.
- [2] Dhiman AK. Sacred Plants and their medicinal uses. Daya Publishing House, Delhi, 2003.
- [3] Mohanty R, Tripathi BK, Panda T. Role of Temples and Other Holy Places in Plant Conservation of Odisha, India. International Journal of Conservation Science. 2012; 3(4) 301-308.

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- [4] Kumbhar A, Bharat, Dabgar J. To study of Aesthetic values of Some Traditional Worshipping Plants of Dang District. International Journal of Scientific Research April 2014; 3(4)46-47.
- [5] Martin GJ. Ethnobotany: A method manual. Chapman and Hall, London, 1995.
- [6] Bhandari MM. Flora of the Indian Desert. Scientific Publishers, Jodhpur, 1990.
- [7] Sharma NK. (a) Ethno Medico Religious plants of Hadoti Plateau of Rajasthan, A preliminary survey. In: Ethnobotany Trivedi, P.C. (Ed.) Avishkar publishers, Jaipur, India, 2002. Sharma NK. (b) The flora of Rajasthan. Avishkar publishers, Jaipur, India, 2002.
- [8] IUCN, IUCN Red list of Threatened species, Version 2013.1 (www.iucnredlist.org), 2013.
- [9] Chakraborty MK, Pal DC. Plant Conservation through Tribal Deities in some Sacred grooves of Purulia district, West Bengal. Ethnobotany, 2004; 16 99-102.
- [10] Verma V. Text book of Economic Botany. Ane Books Pvt. Ltd. New Delhi, 2009.
- [11] Meena KL, Yadav BL. Studies on Ethnomedicinal Plants Conserved by Garasia tribes of Sirohi district, Rajasthan, India. Indian Journal of Natural Products and Resources, 2010 ; 1 (4), 500-506.
- [12] Neeru M. Medicinal Plants In India. RBSA Publishers, Jaipur, 2010.
- [13] Warriar PK. Indian Medicinal Plant. Universities Press, Hyderabad, 1993.

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