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## ENUMERATION OF WILD PLANTS OF MANSAROVAR REGION AND VICINITY; JAIPUR

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### ABSTRACT

This paper deals with the wild plants of Mansarovar region and vicinity. In order to maintain their way of life, urban inhabitants also rely on the natural services provided by the wilderness in protected areas. Indigenous communities have made significant contributions to the creation and maintenance of the environment via the use of their traditional knowledge and practices. Wild plants are part of nature's biodiversity and people living in the vicinity of Mansarovar region use abundant plant biodiversity as purposes of fodder, fuel, food and medicine etc. The dominant vegetation of the study area is *Calotropis procera* and *Parthenium hysterophorus*. A total of 32 wild plants were collected, belonging to 30 genera and 17 families. A list of plant species along with their habits, family and uses are given. As the results shows that herbs share the largest proportion with 16 species followed by shrubs with 7 species along with trees with 9 species. Among the 32 plant species, 23 plant species are used as medicinal, 8 plant species are edible, 6 plant species are used as fodder, 5 plant species are used as fuel and 2 plant species are used as timber.

**Keywords: Wild plants, Biodiversity, Traditional knowledge, Dominant Vegetation**

## INTRODUCTION

Wild plants are plant species that grow and can exist independently of direct human action [1]. Since time immemorial, numerous wild plant species have important economic, ecological, and social values. These plants have great direct economic benefits and are a major source of many marketed goods, such as food, firewood, medicinal plants, cork, etc. They also have high indirect value for non-marketed services, such as regulating water quality, conserving biodiversity, protecting soil, and providing opportunities for recreation [2, 3]. Wild plants are a part of nature's biodiversity. Humans require a variety of traditional and modern remedies from plants because they contain medicinal and other beneficial properties. Nearly 80% of the world's population, as reported by WHO, relies on traditional medicine for primary healthcare and wellness [4]. In times of scarcity, tribal communities that dwell in forested areas mostly depend on a variety of wild plant species for their food sources. They eat the leaves, tubers, fruits, flowers, grains, and seeds of the wild plants. Forests have played an extensive and essential role in enhancing the food security of indigenous groups. Rural residents rely on several wild plant species to provide for their fundamental dietary requirements. The enormous phyto

diversity is used by the tribal people for a multitude of purposes, including food, medicine, fuel, fodder, construction materials, and agricultural machinery [5]. There is a rich variety of plants in Rajasthan, some of which are used for their medicinal benefits [6]. Plants are a rich source of safe and effective medicines and have significant role in folk remedies [7, 8]. A large number of medicinal herbs grow wild in India. Wild plants are used to meet the needs of the poor and tribal people. Some medicinal plants are used as remedies or simple drugs, in the form of powder, juice, paste, or decoction, for both normal and acute problems. A combination of different plant parts is used to make medicines. These are used by rural and tribal people to cure diseases such as cold, cough, fever, pain, skin diseases, diarrhoea, asthma, wounds, snake bite, burn, dysentery, and others [9, 10, 11, 12]. Most of Rajasthan's forest is located to the east of the Aravalli mountain range. In Rajasthan, *Prosopis cineraria* trees are the most prevalent. Due to its several applications, this tree is recognised as a significant natural resource for the rural livelihood of desert residents [13]. Almost every part of this leguminous tree is used for food, fodder, fuel, gum and medicine etc. This includes the green leaves, dry leaves, and dried pods (saangri and kho-kha) [14].

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## MATERIAL & METHODOLOGY

### Study area

Mansarovar is one of the largest southern neighborhoods of Jaipur city in Rajasthan, India. The study area is located at 26° 55' North latitude and 75° 49' East longitude, and it is geographically comes under semi-arid zone of India. It is distinguished by high temperatures, low rainfall, and mild winters; the mean temperature is 36° C, ranging from 18° C in winter (January) to 40° C in summer (June), with a normal rainfall of 600 mm, nearly 90% of which falls during the summer monsoon season, from June to September, and the rest comes from winter cyclones [15]. Mansarovar is a residential area and is located in close proximity to the RIICO Industrial area which is recognized as one of the most important employment centers in the region. Sanganer, Kalyanpura, Dholai and Maniyawas are situated near Mansarovar.

### Methodology

Various sites of the study area were visited during the year 2018 and 2019 in different seasons (rainy, winter and summer) to collect wild plants and whole area was examined. By

interviewing local inhabitants based on a structured questionnaire to get information on local plant names, uses, parts used, and modes of utilisation, ethnobotanical information about wild species was collected. Structured questionnaire was used to interview approximately 10% of the total households which was selected randomly from study area. The questionnaire was including many categories of use: medicine, food, firewood etc. Identification of the collected wild plant specimens was done with the help of flora of Rajasthan-vol. 1-3 [16, 17, 18] (1987-93) and flora of Indian Desert. All the collected wild Plant Specimens was dried and preserved on herbarium sheet.

## RESULTS

A total of 32 plant species from 30 genera and 17 families were collected from the study area (figure1). 10 plant specimens are trees, 7 are shrubs and 15 are herbs species. Fabaceae (7), Asteraceae (4) and Solanaceae (4) are the 3 predominant families.

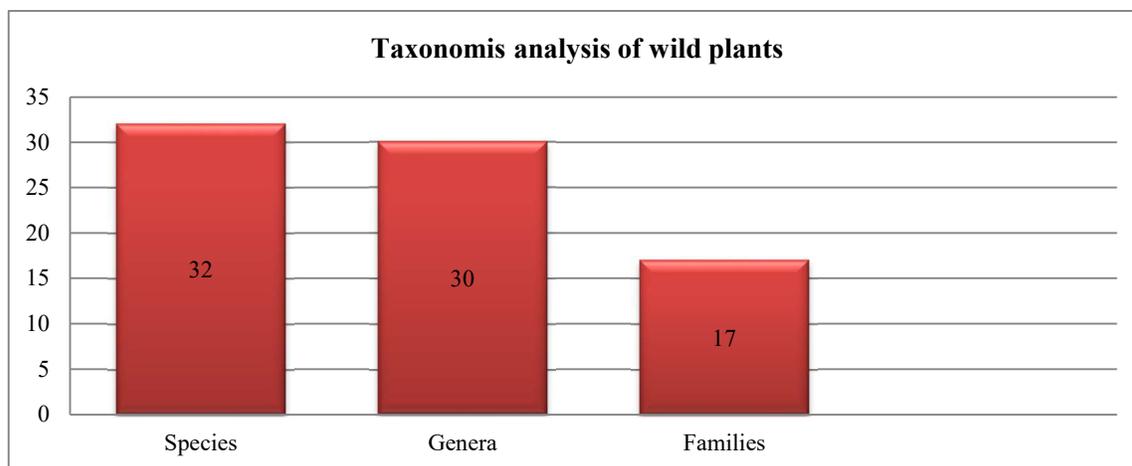


Figure 1: Taxonomic analysis of wild plant

Analysis of habits (**Figure 2**) of wild plants collected shows that herbs share the largest proportion with 15 species (49%) followed by trees with 10 species (30%), and shrubs with 7 species (21%).out of which 10 plant

specimens are trees, 7 plant specimens are shrubs, 15 plant specimens are herbs. The dominant families are Fabaceae (7), Asteraceae (4) and Solanaceae (4).

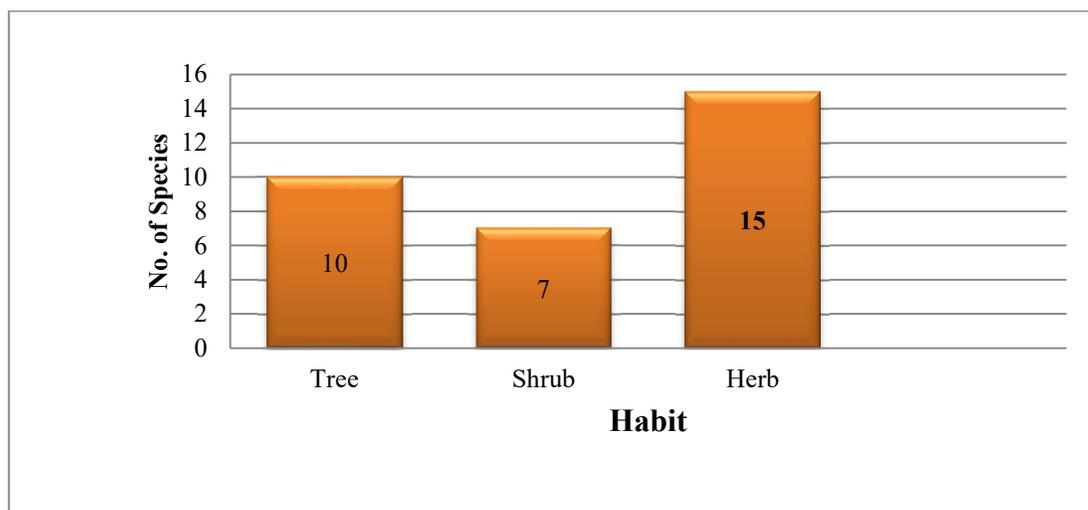


Figure 2: Habitwise distribution of wild plants

The local population uses a variety of wild plants to meet their daily needs of fuel, fodder, agricultural tools, timber and miscellaneous items. Among the 32 species,

23 are used as medicinal, 8 plant species are edible, 6 plant species are used as fodder, 5 plant species are used as fuel and 2 plant species are used as timber (**Figure 3**).

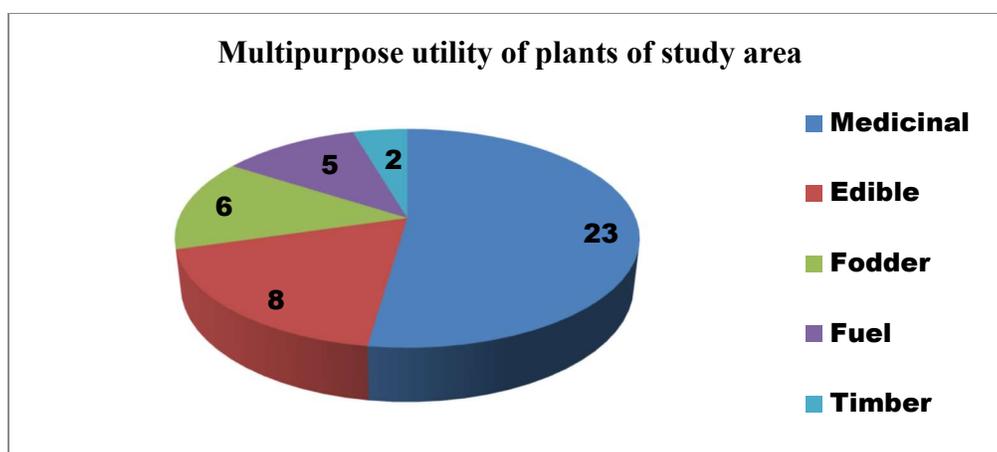


Figure 3: Multipurpose utility of plants of study area

Table 1: List of wild plants

S. No.	Botanical name	Family	Habit	Uses
1	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Shrub	Root and bark used as anti-diabetic, diuretic & aphrodisiac; Seeds are used in cough and urinary disorders.
2	<i>Acacia nilotica</i> Linn.	Fabaceae	Tree	Used as fuel wood; leaf and bark paste for healing wounds.
3	<i>Aerva tomentosa</i> Forssk	Amaranthaceae	Shrub	Used for fuel and fodder
4	<i>Amaranthus viridis</i> L.	Amaranthaceae	Herb	Used as vegetable
5	<i>Argemone mexicana</i> L.	Papaveraceae	Herb	Whole plant – antidiabetic, antimicrobial, antioxidant.
6	<i>Azadirachta indica</i> A. Juss	Meliaceae	Tree	Fruits- edible; stem, leaf, bark- antibacterial, antifungal, antioxidant, antidiabetic.
7	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Herb	Whole plant- used to cure dropsy and asthma.
8	<i>Calotropis procera</i> (Ait.)W.T.Aiton	Asclepiadaceae	Shrub	Leaves – Scorpion bite, joint pain
9	<i>Cassia tora</i> L.	Fabaceae	Herb	Seeds and leaves are used in treatment of skin infections (Itch, ringworm)
10	<i>Dalbergia sissoo</i> .Roxb.	Fabaceae	Tree	Used as timber, fuel wood, fodder
11	<i>Datura stramonium</i> L.	Solanaceae	Herb	Plant juice used for hydrophobia, seeds- poisonous.
12	<i>Eucalyptus radis</i> Endl.	Myrtaceae	Tree	Used as timber, fuel wood
13	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Herb	Whole plant used in treatment of asthma, dysentery, cough and warm infection.
14	<i>Ficus religiosa</i> L.	Moraceae	Tree	Leaf juice used in gastric problems, diarrhea; leaves as fodder; bark – antibacterial, cooling.
15	<i>Heliotropium marifolium</i> Retz.	Boraginaceae	Herb	Leaf juice – used to treat snakebites, scorpion stings
16	<i>Lantana camara</i> L.	Verbenaceae	Shrub	Used as an ornamental plant
17	<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal	Asteraceae	Herb	Used as fodder
18	<i>Moringa oliefera</i> Lamk.	Moringaceae	Tree	Fruits – edible; stem and root used in tumour, swellings and in rheumatic pain.
19	<i>Morus alba</i> Linn.	Moraceae	Tree	Fruit –edible; leaves used as fodder; bark is used to treat cough, wheezing.
20	<i>Parthenium hysterophorus</i> L.	Asteraceae	Herb	Decoction of root is used in dysentery
21	<i>Phyllanthus niruri</i> L.	Phyllanthaceae	Herb	Whole plants for treatment of stomach, kidney, liver and spleen problems
22	<i>Physalis minima</i> L.	Solanaceae	Herb	Stem, leaf, unripe fruit used for treatment of fever, diuretic, dropsy.
23	<i>Prosopis cineraria</i> (Linn.)Druce	Fabaceae	Tree	Fruits, seed are used as vegetable; leaves, bark, flowers- antibacterial, antidiabetic, used in treatment of asthma, dysentery; fuelwood
24	<i>Prosopis juliflora</i> (Swartz.) DC	Fabaceae	Tree	Used as fuelwood, fodder

25	<i>Ricinus communis</i> L.	Euphorbiaceae	Shrub	Leaves, seed oil used in treatment of backache, joint pain
26	<i>Solanum nigrum</i> L.	Solanaceae	Herb	Fruit – edible
27	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Herb	Whole plant useful in bronchitis, blood purifier and in the treatment of boils, pimples
28	<i>Tridax procumbens</i> Linn.	Asteraceae	Herb	Leaves – anticoagulant, antifungal, insect repellent
29	<i>Withania somnifera</i> (L.) Dunal.	Solanaceae	Shrub	Leaves – antipyretic, anthelmintic; seeds and fruits-diuretic; root- useful in cough, dropsy
30	<i>Xanthium strumarium</i> L.	Asteraceae	Herb	Roots and leaves used as diuretic, antirheumatic, appetizer, anodyne
31	<i>Ziziphus mauritiana</i> Lam .	Rhamnaceae	Tree	Fruits – edible; leaves used as fodder
32	<i>Ziziphus nummularia</i> (Burm) Wt.&Arn	Rhamnaceae	Shrub	Fruits – edible ; leaves used as fodder; root powder is used in treatment of uterine prolapsed

*Tephrosia purpurea* (L.) Pers*Aerva tomentosa* forssk*Ricinus communis* L.*Tridax procumbens* Linn

## DISCUSSION

Wild plants are still used whenever and wherever they are accessible. These wild plants are essential for food security of native communities. The current study is providing baseline data on the variety and traditional uses of wild plants identified in the study region. Due to its flavor and medicinal qualities, people are interested in consuming them [19, 20]. Since ancient times, forests have provided shelter and food to man. Around 20% of the plants that naturally exist in the forests are directly useful to humans. In India around 600 plant species are estimated to have food values. Indigenous communities consume wild edible plants as raw food, roasted, cooked or boiled and these are important source of fats, proteins, minerals and vitamins [21, 22, 23]. *Cordia dichotoma* (lasora), *Ziziphus mauritiana* (ber), *Capparis decidua* (Ker), *Ziziphus nummularia* (Bordi), *Salvadora oleoides* (Jal), *Prosopis cineraria* (Khejri), *Balanites aegyptiaca* (Hingota), etc. which play an important role in the nutrition of children in rural and urban areas [24, 25]. The availability of medicinal plants in Rajasthan's dry and semi-arid regions has been drastically reduced due to the over-harvesting and exploitative trade of medicinal plants, which has resulted in rapid deforestation. Numerous plants are used in

the ayurveda medical system to treat a variety of ailments like Alzheimer's disease, skin disease, AIDS, cancer, depression, rheumatism nervous disorders, leprosy, urinary stone track and diabetes. The herbal medicines used in Rajasthan (India) *Embllica officinalis* Gaertn, *Datura metel* L., *Eclipta alba* L., *Eugeniajambolana* Lam., *Ficus benghalensis* L., *Kyllinga Monocephala* Rottb and *Gloriosa superba* L [26, 27, 28]. Many wild plant species like *Bauhinia racemosa*, *Anogeissus pendula*, *Diospyros melanoxylon* are used as animal feed and these forage species are crucial, especially during the lean season when green forage is scarce. In rural areas the use of wild plants for fodder green or dried is still prevalent. A significant household activity in the study region is the gathering of fuel wood many plant species like, *Azadirachta indica*, *Acacia nilotica* and *Prosopis juliflora* primarily serves as the source of energy for cooking [29, 30].

## CONCLUSION

Wild plants are still used whenever and wherever they are accessible. Some wild edible plants have better nutritional value than numerous conventional vegetables and fruits, making them significant and affordable sources of proteins, lipids, vitamins, and minerals. Many medicinal

plants such as *Tribulus terrestris* L., *Ricinus communis* L., *Tridax procumbens* L., *Boerhavia diffusa* L etc. are present. The expansion of the invasive species like *Parthenium hysterophorus*, *Prosopis juliflora*, has created a significant influence on local species. Rapid rate of urbanization, industrialization, population growth and agricultural development have prominent pressure on vegetation and land water

### CONFLICT OF INTERES

No conflict of interest.

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