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Floristic Diversity and Medicinal Important Tree Plants of Maktabah Jafariyah Campus, Sedrana, (N. G.) India

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Abstract:

The present study was aimed to explore the plant diversity wealth of North Gujarat villages, which is yet to be botanized to make the flora of Gujarat state complete. The result of plant diversity of Maktabah Jafariyah campus includes 228 species of flowering plants, 191 genera belonging to 74 families. Among the 204 species belongs to Dicotyledons and 24 species belongs to Monocotyledons. The most dominant family in the present study area is Fabaceae with 16 species (22%) next to that Asteraceae and Euphorbiaceae comprise 13 species (18%), Caesalpiniaceae includes 12 species (16%), Poaceae contains 10 species (14%), and Apocynaceae 9 species (12%). Amaranthaceae, Mimosaceae and Verbenaceae comprise 8 species (11%), Acanthaceae, Cucurbitaceae, Malvaceae and Solanaceae comprise 6 species (8%) In addition to the floristic study, the present study enumerated the medicinally important tree plants in the which are used to cure various diseases.

Keywords: Floristic Diversity, Medicinal Importance, Tree

Introduction

In the forward of wealth of India late Prime Minister Jawaharlal Nehru truly said that "***Wealth of India is there but people are poor***". Here he means to say that plants wealth of India is abundantly present surrounding us but as a people of this country we do not have full information on the utility of the wealth of Indian known as plant kingdom.

The study area Maktabah Jafariyah Knowledge & Research Academy is geographically located on 23 degrees 58' 12.5" N, 72 degrees 20' 19.02" E with an elevation of 440 feet. The academy is situated in the Sedrana Square of Siddhpur Taluka in Patan district, Gujarat India. Biodiversity constitutes various resources upon which families, communities, and future generations depend for meeting their livelihoods. Human beings are very much associated with the plant kingdom for its survival from the very beginning of its appearance on this earth (Elizabeth and Dowdeswell, 1995). India is one of the mega biodiversity-rich nations in the world where the medicinal plants are part of our

tradition that is even respected today. The main traditional systems of medicine in India include Ayurveda, Unani, and Homeopathy. 75% of the medicinally important plant species in India grows in almost wild condition (Laloo et al., 2006; Kannan and Jeeva, 2008). The WHO defines traditional medicine as approaches, health practices, knowledge, and incorporating plant-based medicines which are applied to treat, diagnose, and prevent diseases (WHO, 2003).

Since time immemorial, ancient people mainly depend on herbal remedies for the treatment of diseases and disorders (Singh et al., 2003). Ethnomedicine is widely practiced among the tribal populations of our nation. (Jain, 2001). There has been keen interest among researchers in the area of medicinal plants and their properties in different parts of India. There are also many reports on the use of medicinal plants for treating various ailments either by tribal people or indigenous communities of India (Saikia et al., 2006). Phytosociological and Ethnofloristic study on Saraswati river bank from Patan to little rann of Kachchh (Seliya, 2011). Rural people also possess knowledge about the uses of medicinal plants (Kumar et al., 2012). Medicinal preparations derived from plants in the simple form of plant parts or in the complex form of crude extract mixtures are active against a number of diseases.

Some people near Maktabah Jafariyah campus used medicinal plants to treat various diseases viz., Cough, Cold, Fever, Headache, Poisonous Bites, Diarrhoea, Malaria, Diabetes, Asthma, Leprosy, Cancer, Jaundice, Dengue Fever, Smallpox, Paralysis etc.

Materials and Methods

The source of materials for this floristic research was the extensive and intensive field collections of specimens from various parts of Maktabah Jafariyah campus. Collections were repeated until full data on flowering and fruiting were gathered. All the specimens are stored in Jafari college of Science & Technology college Herbarium. Apart from the herbarium specimens, the plants are documented through photography. During the field studies, complete specimens with triplicates were collected. Characters such as nature of bark in case of trees, smell of the leaves and flowers, colour of the flowers and fruits, habit and habitat association were also documented. The data such as date of collection, names of the family and species, uses, locality, habitat distribution, leaf, texture and colour of the flowers, fruits, and other related notes were recorded in the field notebook.

The large specimens were trimmed to the size of about 20 cm length, and the excess of leaves and flowers were removed without altering the arrangement and position of leaves, flowers, and fruits. The collected specimens were poisoned by dipping the whole twig in saturated mercuric chloride in ethyl alcohol

solution. The specimens were pressed after spreading out of the leaves and flowers neatly. Some leaves were placed facing up and others facing down to show the characters on both surfaces. The characters of the plant were studied and checked with regional flora such as, Flora of Gujarat state (Shah, 1978), Flora of Bombay Presidency (Cooke, 1905 – 1908), Flora of British India (Hooker, 1872-1897).

Results and Discussion

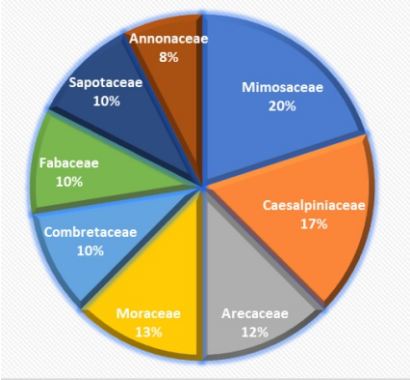

Figure: 1 Dominant families present in the study area

The present study enumerated the medicinally important tree plants 78 species of flowering plants, 64 genera belonging to 37 families. Among the 72 species belongs to dicotyledons and 6 species belongs to monocotyledons. The most dominant family in the present study area is Mimosaceae with 8 species next to that Caesalpiniaceae comprise 7 species, Arecaceae and Moraceae includes 5 species, Combretaceae, Fabaceae and Sapotaceae contains 4 species, Annonaceae, Myrtaceae and Rutaceae 3 species. Apocynaceae, Mimosaceae and Verbenaceae comprise 8 species (11%), Acanthaceae, Cucurbitaceae, Malvaceae, Ehretiaceae, Meliaceae, Salvadoraceae and Verbenaceae comprise 2 species, Anacardiaceae, Balanitaceae, Bignoniaceae, Caricaceae, Casuarinaceae, Cupressaceae, Cycadaceae, Euphorbiaceae, Lythraceae, Magnoliaceae, Malvaceae, Moringaceae, Oleaceae, Pandanaceae, Poaceae, Punicaceae, Rhamnaceae, Rubiaceae, Sapindaceae, Simaroubaceae, Tamaricaceae and Ulmaceae comprise 1 species. The detailed investigation of the flora of present study and their medicinal values is represented in Table 1 and Figure 1. All the obtained information was used for treating different diseases.

Table 1: Floristic Diversity and some Medicinal importance Tree Plants

BOTANICAL NAME	FAMILY NAME	PARTS USED	MEDICINAL USES
Acacia leucophloea Willd.	Mimosaceae	Gum	Bronchitis
Acacia nilotica (L.) Del.	Mimosaceae	Leaves and Bark	Astringent and Cooling
Aegle marmelos (L.) Corr.	Rutaceae	Fruit, Bark	Diarrhoea, Dysentery, Constipation.
Ailanthus excelsa L.	Simaroubaceae	Bark	FEVER, Cough, Asthma and Diarrhoea.
Albizia lebbeck (L.) Bth.	Mimosaceae	Bark, Flower and Seeds	Cough, Asthma, Wounds, Ulcers, Skin Diseases and Leprosy
Alstonia scholaris R. Br.	Apocynaceae	Bark	Fever, Malaria, Diarrhoea, Anorexia
Annona squamosa L.	Annonaceae	Leaf	Unconscious and Eczema
Azadirachta indica A. Juss.	Meliaceae	Leaves and wood	Smallpox and Pesticides, Dandruff

Balanites aegyptiaca (L.) Del.	**Balanitaceae**	**Fruit, Seeds and Leaves**	**Diarrhoea, Leprosy, Acne and Cough**
Bauhinia purpurea L.	Caesalpiniaceae	Leaf	Wound
Carica papaya L.	Caricaceae	Leaf	Dengue Fever
Cassia fistula L.	Caesalpiniaceae	Whole plant	Cancer, Constipation, Diarrhoea, Healing Ulcers, Paralysis
Cassia siamea Lamk.	Caesalpiniaceae	Leaf	Constipation
Casuarina equisetifolia L.	Casuarinaceae	Bark	Diarrhoea
Citrus limon (L.) Burm. F.	Rutaceae	Fruit	Vomiting, Nausea, Indigestion Piles, Scurvy, Dyspepsia, Pyorrhoea and cholera
Cocos nucifera L.	Arecaceae	Fruit	Cholera, stop Vomiting, Diarrhoea
Cordia dichotoma Forst.	Ehretiaceae	Fruits, Bark and Leaves	Coughs, Goitre, Worms, Ulcers and Wounds
Cordia gharaf (Forsk.) E. & A.	Ehretiaceae	Leaves, Bark and Fruits	Boils and Wounds
Dalbergia sissoo Roxb.	Fabaceae	Seed	Itching Problem
Delonix regia (Boj.) Raf.	Caesalpiniaceae	Bark and Flowers	Fever and Diarrhoea.
Derris indica (Lam.) Bennet	Fabaceae	Seed-oil	Skin Diseases
Emblica officinalis Gaertn.	Euphorbiaceae	Fruit	Vitamin - c, Cough, Diabetes, Cold, Laxative, Hyper Acidity.
Eucalyptus globulus Labill.	Myrtaceae	Leaves	Colds, Headache and Rheumatism
Ficus carica L.	**Moraceae**	**Fruits**	**Anaemia, Acidity and Indigestion**
Ficus hispida L. f.	Moraceae	Latex	Leprosy
Ficus rumphii Blume.	Moraceae	Bark and root	Diabetes, Diarrhoea
Gmelina arborea L.	Verbenaceae	Bark and Root	Diabetes, Diarrhoea
Holoptelea integrifolia (Roxb.)	Ulmaceae	Bark	Rheumatism
Lagerstroemia indica L.	Lythraceae	Fruits	Aphthae of Mouth.
Madhuca indica J. F. Gmel.	Sapotaceae	Seed	Rheumatism
Mangifera indica Linn.	Anacardiaceae	Leave, Fruit	Skin Ailments, Asthma, Cough, Diarrhoea, Cholera
Manilkara hexandra (Roxb.) Dub.	Sapotaceae	Seeds, Fruits and Bark	Sexual Debility and Diarrhoea
Manilkara zapota (L.) van Royen	Sapotaceae	Fruits and Bark	Sexual Debility, Diarrhoea, Dysentery and Vomiting, Fever
Melia azedarach L.	Meliaceae	Root-bark	Trichomonas Infection.
Michelia champaca L.	Magnoliaceae	Bark, Leaves and Flowers	Rheumatism, Gonorrhoea and Fevers
Mimusops elengi L.	Sapotaceae	Fruits, Seeds and Bark	Wounds and Ulcers, Jaundice, Stomatitis, Diabetes and Piles.
Moringa oleifera Lam.	Moringaceae	Fruit, Leaves and Bark	Rheumatism, Sciatica and Swellings and Diabetes
Morus alba L.	Moraceae	Leaves and Fruits	Sore-throat and Stomatitis
Murraya koenigii (L.) Spr.	**Rutaceae**	**Leaves**	**Diabetes, Diarrhoea**
Nyctanthes arbortristis L.	Oleaceae	Leaf	Malaria
Peltophorum pterocarpum (DC.)	Caesalpiniaceae	Bark	Psoriasis
Phoenix sylvestris (L.) Roxb.	Arecaceae	Leaf	Intestinal Worm
Pithecellobium dulce C. E. P. Mart.	Mimosaceae	Leaf, Bark, Seeds	Leprosy, Hypoglycaemic
Plumeria rubra L.	Apocynaceae	Root Bark	Blennorrhagia, Leprosy
Polyalthia longifolia (Sonn.) Thw.	Annonaceae	Bark	Fever, skin Diseases, Diabetes
Psidium guajava L.	Myrtaceae	Fruits and Leaves.	Scurvy, Ulcers, Cholera, Vomiting and Diarrhoea

Punica granatum L.	**Punicaceae**	**Seeds, bark**	**Diarrhoea and Stomatitis.**
Salvadora oleoides Decne.	Salvadoraceae	Leaves, Seeds oil	Rheumatism, Piles and Constipation
Salvadora persica L.	Salvadoraceae	Leaves and Seeds oil	Rheumatism, Piles and Constipation, Tooth Brushes.
Sapindus laurifolius Vahl.	Sapindaceae	Seed	Paralysis
Sesbania grandiflora (L.) Pers.	Fabaceae	Leaf	Liver Disorders, Bronchitis
Syzygium cumini (L.) Skeels	Myrtaceae	Seeds	Diabetes
Tamarindus indica L.	Caesalpiniaceae	Leaves fruits and seeds	Diarrhoea, Asthma, Wounds, Ulcers, Jaundice, Tumours, Ringworms, Ulcers and Diabetes
Tecoma stans (L.) H. B. & K.	Bignoniaceae	Root	Snake Bites
Tectona grandis L.f.	Verbenaceae	Bark	Cough and Dysentery
Terminalia arjuna (Roxb.) W. & A.	Combretaceae	Bark	Heart Diseases and Bone -Fracture
Terminalia bellirica (Gaertn.) Roxb.	Combretaceae	Seed, Bark	Cough, Insomnia, Dropsy, Vomiting, Ulcer, Trifala.
Terminalia chebula Retz.	Combretaceae	Seed	Trifala, Wound Ulcer, Leprosy, Inflammation, Cough.
Thespesia populnea (L.) Sol. ex Corr.	Malvaceae	Leaves bark and Stem	Cough, influenza, Headache, Diabetes, Gonorrhoea and Breast Cancer
Thuja occidentalis L.	Cupressaceae	Leaves	Coughs, Hepatitis
Zizyphus mauritiana Lam.	Rhamnaceae	Fruit and Leaves	Cutaneous Disease and Bilious Affections

Acacia leucophloea

Azadirachta indica

Albizia lebbeck

Cassia fistula

Annona squamosa

Casuarina equisetifolia

Cocos nucifera

Mangifera indica

Punica granatum

Tamarindus indica

Zizyphus mauritiana

Terminalia arjuna

References

- Cooke, T. (1905 – 1908) The Flora of the Presidency of Bombay. Taylor and Francis, London.
- Elizabeth M, Dowdeswell D. (1995). In Global Biodiversity Assessment. UK: UNEP, CUP; p. 80-9.
- Hooker, J. D. (1872-1897). *Flora of British India.* Vol. I-VII. London.
- Jain SK. (2001) Ethnobotany in modern India, Phytomorphology. Gold Jubilee Issue Trends Plant Sci; 51:39-54.
- Kumar S, Jena P.K., Tripathy P.K. (2012) Study of wild edible plants among tribal groups of similipal biosphere reserve forest, Odisha, India; with special reference to *Dioscorea* species. Int J Biol Technol; 3:11-9.
- Laloo R.C., Kharlukhi L, Jeeva S, Mishra B.P. (2006) Status of medicinal plants in the disturbed and the undisturbed sacred forests of Meghalaya, northeast India: Population structure and regeneration efficacy of some important tree species. Curr Sci; 90:225-32.

- Saikia A.P., Ryakala V.K., Sharma P., Goswami P., Bora U. (2006) Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. J ethnopharmacology; 106:149-57.
- Sedgwick L.J. (1918) Plants of Northern Gujarat. Calcutta superintendent Government printing, India.; Vol. IV. No. 7.
- Seliya A. R. (2011) Phytosociological and Ethnofloristic study on Saraswati river bank from Patan to little rann of Kachchh; Research thesis submitted at HNGU, Patan.
- Shah G.L. (1978) Flora of Gujarat State, Sardar Patel University, Vallabh Vidhyanagar, Part I & II
- Singh A., Mehta S., Singh H.B., Nautiyal C.S. (2003) Biocontrol of collar rot disease of betelvine (*Piper betle* L.) caused by *Sclerotium rolfsii* by using rhizosphere-competent *Pseudomonas fluorescens* NBRI-N6 and *Pseudomonas fluorescens* NBRI-N. Curr Microbiol; 47:153-8.
- Singh U., Singh S., Kochar A. (2012) Therapeutic potentials of antidiabetic nutraceuticals. Phytopharmacology; 2:144-69.
- WHO (2003); World Health Organization, Traditional medicine. Fact sheet N°134.