



Ex Situ Conservation of Medicinal Plants of South Gujarat in the Botanical Garden of B.K.M. Science College, Valsad

KEYWORDS

medicinal plants, botanical garden, ex situ conservation, Valsad.

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ABSTRACT Medicinal plants and traditional medicine play an important role in the health care system of most developing countries. The traditional health care practice is mainly dependent on medicinal plants collected from the wild. In spite of this, the medicinal plant biodiversity is being depleted due to man-made and natural calamities. Moreover, the indigenous knowledge associated with the conservation and use of medicinal plants is also disappearing at alarming rate. Botanical garden of Valsad Science College is one of the best gardens in Gujarat state that actively participate in the conservation of medicinal species by maintaining live specimens in their collections. During last five years we could adorn it successfully conserving 40 species of medicinal plants belonging to 40 genera and 27 families in our botanical garden.

INTRODUCTION:

Valsad district is situated at 72-50' E and 20-35' N in the Southern part of Gujarat. The land of the district, in general, is leveled alluvial plain. The soils are mainly loam and sandy loam with good fertility. There are three distinct weather conditions in the district viz. winter, summer and rainy seasons. Ex situ conservation is the conservation and maintenance of samples of living organisms outside their natural habitat, in the form of whole plants, seed, and pollen, vegetative propagates and tissue or cell cultures. Botanical gardens have collectively accumulated centuries of resources and expertise that now they become a pivotal factor in playing a key role in plant conservation.

MATERIAL & METHODS:

To conserve rare plants of South Gujarat in our Botanical garden, first we tried to collect seeds, drafts or saplings of such medicinal plants from the available out sources. After that we tasted soil and climate required to grow it healthy. Then we sown seeds or drafts of such plants in soil bags, prepared saplings of them and planted the medicinal plants at our garden or if required, in green house.

RESULT & DISCUSSION:

Our botanical garden has been regularly visited and explored by many students from schools, pharmacy, or ayurvedic colleges of all over Gujarat besides non academic citizens. They are given detailed and live exposure to such medicinal plants at our garden with a view point that they could be in the position to identify them so that they can use such plants whenever it is required to them.

Each medicinal plant is introduced with its name plate and other necessary information required to be identified. It is tagged on the plant itself for self study purpose.

List of medicinal plants - propagation in the botanical garden of Valsad Science College

1. *Mimusops elengi* L. (Borasali)

Family : Sapotaceae

➤ Uses:

The bark of this tree is used to treat diarrhea and dysen-

tery. The powder of seeds are pasted with oil and used as medicine.

2. *Asparagus officinalis* Willd. (Satavri)

Family : Liliaceae

➤ Uses:

The root of asparagus is used as diuretic. The young shoot are eaten.

3. *Vitex negundo* L. (Nagod)

Family : Verbinaceae

➤ Uses:

The leaves are mixed with cowdung and massaged in backache. Leaves are also used to treat headache.

4. *Occimum basilicum* L. (Common Basil)

Family: Labiatae

➤ Uses:

The leaves are used to treat gonorrhoea, burning, urine and nephritic affections. The plant is used in fever, cough and gout. The seeds of it also contain refreshing properties.

5. *Aristolochia indica* Lam. (Batakvel)

Family : Aristolochiaceae

➤ Uses:

Dried stem and roots are used for medicinal purpose. Drug is prepared from this plant in small dose. Its used to control diarrhea, fever and irregular menstruation.

6. *Celastrus peniculata* Willd. (Malkakdi)

Family: Celastraceae

➤ Uses:

Root bark is used to treat swelling, burns, tumors and cancers. Its also used in venereal diseases.

7. *Garcinia indica* L. (Kokam)

Family: Guttiferae

➤ Uses:

The gum and resin obtained from the trunk bark used a powerful hydragogue cathartic.

8. *Aloe barbedensis* Mill. (Kuarpathu)

Family : Liliaceae

➤ Uses:

The leaves are used as stomachic tonic, purgative and emmenagogue. The mucilaginous pulp is biuretic, wound healing and used to activate hormone.

9. *Hibiscus sp.* L. (Jasud)

Family: Malvaceae

➤ Uses:

The seeds are used as tonic, stimulating, stomatic and carminative. The leaf and root paste is used on itches. The oil obtained from flower is used as perfumery.

10. *Azadiracta indica* A. Juss. (Neem)

Family: Meliaceae

➤ Uses:

Every part of tree seeds, juice, leaves and bark are used as medicine. The leaves are bitter and used in skin disease. The bark is tonic and good astringent which is used in fever and skin disease.

11. *Saraca asoka* (Roxb.) de Willd. (Ashok)

Family: Ceasalpiniaceae

➤ Uses:

Dried flowers, seeds and bark of the tree are medicinal. Seeds are used to cure urinary discharges. Dried bark is astringent .

12. *Bombax ceiba* L. (Simdo)

Family: Bombacaceae

➤ Uses:

The resin powder is used in diarrhea. The wood is used in manufacturing the matches. Its bark is also used in skin disease.

13. *Tylophora indica* L. (Damvel)

Family : Asclepiadaceae

➤ Uses:

Dried root of the plant is useful in the treatment of dysentery, asthma and bronchitis. Leaves are also used in coughs.

14. *Hemidesmus indicus* L. (Anantmul)

Family : Asclepiadaceae

➤ Uses:

The root decoction is used thrice a day for one month as blood purifier and skin disease.

15. *Clematis gauriana* Roxb. (Morvel)

Family : Ranunculaceae

➤ Uses:

The root decoction is used in stomatic problems. Leaves are used in diarrhea, dysentery and digestion.

16. *Aegle marmelos* (L.) Corr. (Bili)

Family : Rutaceae

➤ Uses:

The fruit is used as medicine. The unripe fruit is powdered and taken with water in dysentery. Leaves, fruits, and the roots have antibiotic properties.

17. *Terminalia chebula* Retz. (Harde)

Family: Combrataceae

➤ Uses:

The fruit is astringent and laxative. The fruit is used in bleeding and ulceration. Fruit is also used in chronic ulcer, wounds and scalds.

18. *Withania somnifera* (L.) Dunal. (Ashwagandha)

Family : Solanaceae

➤ Uses:

The dried roots are tonic and diuretic. It is useful in sexual and general weakness and rheumatism. The root powder is applied on ulcers and on tubercular glands.

19. *Rauwolfia tetraphylla* L. (Sarggandha)

Family: Apocynaceae

➤ Uses:

The drug is suitable for mild anxiety cases or patient of chronic illness. The root of the plant is also used in disease of bowels and fever.

20. *Embelica officinalis* Gaertn. (Aambda)

Family: Euphorbiaceae

➤ Uses:

The leaves, flowers, seeds and bark have medicinal value. Leaves are astringent. Fruits are good liver tonic. The fruit juice is useful in indigestion, jaundice, anaemia and heart complaints.

21. *Madhuca indica* J.F. Gmel. (Mahudo)

Family : Sapotaceae

➤ Uses:

Leaves are astringent. The flowers are used to treat bronchitis and cough. Bark is administered to cure diabetic problem. Fruits are also edible.

22. *Callotropis procera* L. (Aankdo)

Family: Asclepiadaceae

➤ Uses:

The powdered flower is used in cold and cough. The root, leaf and bark are used in elephantiasis.

23. *Adhatoda vasaka* (L.) Nees. (Ardusi)

Family: Acanthaceae

➤ Uses:

The plant parts are boiled in water and used for bath in the treatment of body inflammation and body ache. The leaf decoction is administered in cough and chronic bronchitis.

24. *Santalum album* L. (Chandan)

Family: Santalaceae

➤ Uses:

The oil extracted from the heartwood of the tree is used to promote urination, inflammation of bladder, gonorrhoea and cough. Seed oil is also used in skin diseases.

25. *Pongamia pinnata* (L.) Pierre (Karanj)

Family: Fabaceae

➤ Uses:

The juice of this plant is used to treat diarrhoea, cough, dyspepsia, flatulence, leprosy and gonorrhoea. The juice of root is used to clean teeth and the seeds paste is used to treat painful rheumatic joints.

26. *Acacia catechu* L. (Kher)

Family: Mimosaceae

➤ Uses:

The bark decoction is taken in the morning and evening for three days in stomachache. It is administered in case of gum trouble and chronic diarrhoea.

27. *Butea monosperma* (Lamk.) Taub. (Kesudo)

Family: Fabaceae

➤ Uses:

The flowers and leaves are astringent, depurative, diuretic and aphrodisiac. These are used to cure burnt parts and pimples.

Bark is used for tanning.

28. *Cassia tora* L. (Kuvadiyu)

Family: Caesalpiniaceae

➤ Uses:

The seed paste is used in the treatment of ringworm and itch. The crushed seeds with water is used for cough. It also possess fairly good percentage of anthracene compound.

29. *Gloriosa superba* L. (Vachhnag)

Family: Liliaceae

➤ Uses:

Tubers are used as medicine. The tubers possess abortifacient, stimulant and anthelmintic properties. It is used to treat leprosy.

30. *Abrus precatorius* L. (Chanothi)

Family: Fabaceae

➤ Uses:

The leaves, seeds and roots are useful. The leaf juice used to treat hoarse senses. The leaf juice also apply on painful swelling of body.

31. *Mucuna prurita* (L.) Dc. (Kavach)

Family: Fabaceae

➤ Uses:

Seeds and roots are medicinal. Seeds and roots are effective nerve tonic. These are diuretic. These are also used to treat kidney trouble and dropsy.

32. *Ailanthus excelsa* Roxb. (arduso)

Family: Simaroubaceae

➤ Uses:

Bark, trunk and roots are medicinal. It is used in stomach problem and dysentery. The root bark is used to cure epilepsy, heart trouble and asthma.

33. *Balanites aegyptica* (L.) Del.

Family: Balanitaceae

➤ Uses:

The seeds are used to treat cuts and wounds. In the modern medicine so far no effective remedy is helpful in zoster disease

34. *Lagerstroemia lanceolata* Wall. (Jarul)

Family: Lythraceae

➤ Uses:

Roots are astringent, stimulant and febrifuge. The bark and leaves are purgative and seeds are narcotic. The gum is sweet and edible.

35. *Gmelina arborea* Roxb. (Shevan)

Family: Verbenaceae

➤ Uses:

Roots, bark and flowers are used as medicine. Flowers are used in treating leprosy and skin diseases.

36. *Uraria picta* Desv. (Pithwan)

Family: Fabaceae

➤ Uses:

Whole plant is used as medicine. Roots are stimulating, alternative, carminative and blood purifier. Its also used in skin disease.

37. *Sterculia urens* Roxb. (Kadayo)

Family: Sterculiaceae

➤ Uses:

Gum is obtained from plant and used as medicine. Gum is used in diabetes, gout, stangury and dysentery.

38. *Parkinsonia aculeata* L. (Ram baval)

Family: Caesalpiniaceae

➤ Uses:

Whole plant is used as medicine. Paste of root is used on swelling. Decoction of leaves is used in cough and in fever.

39. *Careya arborea* Roxb. (Vakumbha)

Family: Barringtoniaceae

➤ Uses:

Bark, leaves and flowers are used as medicine. Bark is acrid and astringent. Flowers are used in ulcers.

40. *Holarrhena antidysenterica* (L.) Wall. (Kadvo indrajav)

Family: Apocynaceae

➤ Uses:

Bark, seeds and leaves are used as medicine. It is carminative, stimulating, digestive and tonic. It is used in chronic bronchitis, burns and ulcers.

CONCLUSION:

Each Biology Department, Botanist or medicinal plant interested person must grow and conserve such important species so that in future, next generation would be able to use it. We could do it because of our management, Ministry of Environment, New Delhi and UGC as both these external funded agencies have helped us sanctioning our major and minor research projects respectively. As medicinal complications due to using antibiotic medicine have been increasing day by day people are diverted to use or sometimes exploit medicinal plants to cure their disease. We are trying to make the people aware of the use of medicinal plants and at the same time conservation of such plants. To some extent, we become successful.

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