

A CASE STUDY

Ex situ conservation of rare plants of south Gujarat in the botanical garden of Valsad Science College

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SUMMARY

Botanical garden of Valsad Science College is one of the best garden in Gujarat state that actively participate in the conservation of rare species by maintaining live specimens in their collections, studying wild plants at risk, banking seeds of rare plants and introducing rare plants to the horticultural trade. During last five years we could adorn it successfully conserving 37 species of rare plants belonging to 36 genera and 24 families in our botanical garden.

Key Words : Rare plants, Botanical garden, *Ex situ* conservation, Valsad

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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 means they play a key role in plant conservation. Many of these activities contribute to *Ex situ* conservation, but botanical gardens also play an important

role in *Ex situ* conservation. Among nature's conservation strategies, the cultivation of *Ex situ* in Botanical Gardens is the more immediate and allows the middle and long term survival of risk extinction and rare species. The conservation of such species imposes, first of all, direct observation of principal phases of development of *In situ* and the correct collecting of the propagation material, choosing the fitter and faster multiplicative technique surely offers greater opportunities of conservation of *Ex situ*, with elevated phenotypic and genotypic expressiveness populations and it allows getting a high number of individuals to be re-introduced in origin places, with the purpose to strengthen the consistence of the natural populations and to reduce its vulnerability degree.

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MATERIAL AND METHODS

To conserve rare plants of South Gujarat in our Botanical garden first we tried to collect seed of such plants. Draft of such plants was also collected if required to prepare saplings or new plant of it. 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 rare plants at our garden. We also distributed such plants among interested people to grow such plants in quantity.

RESULTS AND DISCUSSION

Botanical garden of Valsad is spread over 4 acres. The land for this is spared by our management giving full authority

to conserve rare plants and useful varieties of this plant world. This garden has a historical importance from botanical point of view because it endows total 550 varieties of valuable plants. During last five years we could adorn it successfully conserving 37 species of rare plants belonging to 36 genera and 24 families.

To collect such information we explored the forest and

Table 1: List of rare plants - propagation in the botanical garden of Valsad Science College

Sr. No.	Local name	Botanical name	Family
1.	Baval	<i>Acacia nilotica</i> (L.) Willd. Ex Del.	Mimosaceae
2.	Chor Aamlo	<i>Adensonia digitata</i> L.	Bombaceae
3.	Jondhra	<i>Antidesma ghaesembilla</i> Gaertn. Menasu (Tul.) Muell. – Arg.	Eurphobiaceae
4.	Chamoli	<i>Bauhinia foveolata</i> Dalz.	Caesalpinaceae
5.	Safed Shimlo	<i>Bombax insigne</i> Wall.	Bombaceae
6.	Dhupelio	<i>Boswellia serrata</i> Roxb. Ex Colebr.	Burseraceae
7.	Kirmira	<i>Casearia graveolens</i> Dalz.	Flacourtiaceae
8.	Midhan	<i>Catunaregam spinosa</i> (Thunb.)Tirveng.	Rubiaceae
9.	Meccaniamli	<i>Ceratonia siliqua</i> L.	Caesalpinaceae
10.	Gugal	<i>Commiphora wightii</i> (Arn.) Bhandari	Burseraceae
11.	Shisam	<i>Dalbergia latifolia</i> Roxb.	Fabaceae
12.	Patrali	<i>Dalbergia lanceolaria</i> ssp. <i>Paniculata</i>	Fabaceae
13.	Karmal	<i>Dillenia pentagyna</i> Roxb.	Dillniaceae
14.	Netar Sidi	<i>Dolichandrone falcate</i> (Wall. Ex DC) Seem.	Bignoniaceae
15.	Rudrakhi	<i>Eliocarpus sphaericus</i> (Gaertn.) K. Schum.	Elaeocarpaceae
16.	Krishna Vad	<i>Ficus benghalensis</i> var. <i>krishnae</i> (C.DC.) Corner	Moraceae
17.	Gal Gugar	<i>Flacourtia indica</i> (Burm. f.) Merr.	Flacourtiaceae
18.	Sevan	<i>Gmelina arborea</i> Roxb.	Verbinaceae
19.	Varas	<i>Heterophragma quadriloculare</i> (Roxb.) K. Schum.	Bignoniaceae
20.	Dudh Kudi	<i>Holarrhena pubescens</i> (Buch. – Ham.) Wall. Ex A. DC.	Apocynaceae
21.	Bhramarchhal	<i>Hymenodictyon orixense</i> (Roxb.) Mabb.	Rubiaceae
22.	Ravan Tad	<i>Hyphaene dichotoma</i> (White) Furtado	Arecaceae
23.	Warang	<i>Kydia calycina</i> Roxb.	Malvaceae
24.	Chandiva	<i>Macaranga peltata</i> (Roxb.) Muell. – Arg.	Eurphobiaceae
25.	Kapilo	<i>Mallotus philippensis</i> (Lam.) Muell. – Arg.	Eurphobiaceae
26.	Tetu	<i>Oroxylum indicum</i> (L.) Vent.	Bignoniaceae
27.	Kevdo	<i>Pandanus odoratissimus</i> L.f.	Pandanaceae
28.	Kaoti	<i>Parkia biglandulosa</i> Wight and Arn.	Mimosaceae
29.	Kharsinghal	<i>Radermachera xylocarpa</i> (Roxb.) K. Schum.	Bignoniaceae
30.	Chandan	<i>Santalum album</i> L.	Santalaceae
31.	Aritha	<i>Sapindus laurifolius</i> Vahl.	Sapindaceae
32.	Chhini	<i>Securinega leucopyrus</i> (Willd.) Muell. – Arg.	Euphorbiaceae
33.	Bhilamo	<i>Semicarpus anacardium</i> L.f.	Anacardiaceae
34.	Rohan	<i>Soyimida febrifuga</i> (Roxb.) A. Juss.	Meliaceae
35.	Sardol	<i>Sterculia villosa</i> Roxb. Ex DC.	Sterculiaceae
36.	Arjun sadad	<i>Terminalia cuneata</i> Roth.	Combretaceae
37.	Maha neem	<i>Toona hexandra</i> (Wall. Ex Roxb.) Roem. Var. <i>hexandra</i>	Meliaceae

cultivated area of South Gujarat, especially Valsad, Ahwa and Navsari district and Dadra and Nagar Haveli, consulted people and gone through the literature available of it and after a long and concentrative study, came to the conclusion about such rare or endangered species. Then we study the soil and climate they require to be grown and survive for a long period and then we worked to prepare their saplings sowing seeds or draft to get the plants in quantity to be preserved at our botanical garden or to be distributed among people who are interested to cultivated them on their private land or nearby pastoral area. We too try to people around well informed about theis rare or threatened plants and try to make them convinced that if such plants are very useful to them, before using them they must try to conserved them by planting more saplings of it for the next period or generation. The earlier published reports by Palin (1880), Blatter (1908), Cooke (1908, 1958, 1967), Blatter and Hallberg (1918, 1984), Saxton and Sedgwick (1918), Pandey *et al.* (1983) and Anonymous (1982, 1994) do not describe all rare plant species of the district.

REFERENCES

- Anonymous (1982). Conservation supplement. *Bull. Botanical Survey of India*, **24**: 1-4.
- Anonymous (1994). List of some vulnerable and endangered flowering taxa of India. Department of Agricultural Botany, Junagadh (GUJARAT) INDIA.
- Blatter, E.J. (1908). On the flora of Cutch. *J. Bombay Nat. Hist. Soc.*, **18**: 756-777.
- Blatter, E.J. and Hallberg, F. (1918). Flora of Indian desert. Scientific Publishers, Jodhpur. 13p.
- Blatter, E.J. and Hallberg, F. (1984). The flora of Indian desert. Scientific Publishers, Jodhpur. 160p.
- Cooke, T. (1908). The flora of presidency of Bombay. Vol. **I – III** (Reprinted Ed. In 1958) Calcutta (W.B.) INDIA.
- Cooke, T. (1958). Flora of the presidency of Bombay. Botanical Survey of India. Calcutta (W.B.) INDIA.
- Cooke, T. (1967). Flora of the presidency of Bombay. (Reprint Ed.) Botanical Survey of India. Calcutta, (W.B.) INDIA.
- Palin, C.T. (1880). A list of plants of Kutch. Bombay Gazetteer, Bombay (M.S.) INDIA.
- Pandey, R.P., Shetty, B.V. and Malhotra, S. (1983). In Assessment of Threatened Plants of India (Eds.).
- Patel, R.M. (1971). The flora of Bulsar and its environs. Thesis, S.P. University, Vallabh Vidyanagar (GUJARAT) INDIA.
- Reddy, A.S. (1987). Flora of Dharampur forests. Thesis, S.P. University, Vallabh Vidyanagar (GUJARAT) INDIA.
- Saxton, W.T. and Sedgwick, L.J. (1918). Plants of Northern Gujarat. Records of Botanical Survey of India. 9: 251-262.
- Shah, G.L. (1978). Flora of Gujarat State Part I and II Sardar Patel University, Vallabh Vidhyanagar (GUJARAT) INDIA.
- Vora, H.M. (1987). Floristic survey of Dharampur forest. VALSAD (GUJARAT) INDIA.

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