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Crinum latifolium var. *latifolium* L.: An addition to Mangrove Associated Flora of Maharashtra State of India with Special Reference to its Ecological Amplitude

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Summary

Mangrove ecosystem of Maharashtra is neglected as compared to that of on the east coast of India. An extensive floral survey is must so as to document the mangrove associated plant species from coastal Maharashtra. Present paper is a step towards this attempt. *Crinum latifolium* var. *latifolium* L. is a species of wide ecological amplitude; also growing along the mangroves as an associate in Maharashtra. In conformity to this, the present paper provides detailed habitat characteristics and association of the species.

Key Words: *Crinum latifolium var. latifolium* L., ecological amplitude, Maharashtra

Introduction

Biodiversity is often defined as the variety of all life forms- the different species of plants, animals and micro-organisms; the genes they contain and the ecosystem of which they form a part. It is not a fix entity but constantly changing and increasing by genetic changes and evolutionary processes. It may reduce by extension and habitat degradation. The coastal areas particularly the mangrove stands and associated ecosystems are comparatively rich in biodiversity. With respect to the plants, specifically for the coast of Maharashtra these ecosystems are studied for angiosperm species. Much attention is not given to the plants belonging to monocots and lower groups (Gokhale *et al.*, 2010; Gokhale *et al.*, 2011).

Therefore, the authors are engaged in the floristic as well as ecological assessment of these ecosystems to know the plant diversity wealth and possible impacts of environmental degradation. As an example, it is found that *Crinum latifolium* was documented way back by Cooke (1901) as wild in Konkan region of Bombay Presidency. But, the species could not find place in the regional as well as district floras (Kulkarni, 1988; Almeida and Mistry, 1987). This may indicate site specific extinction of the species. Fortunately, the species is located from different habitats of coastal ecosystems of Maharashtra. The present paper reports occurrence of *Crinum latifolium* var. *latifolium* L. from different micro-geographic regions of coastal Maharashtra. It also confirms its place as a mangrove associate.

Materials and Methods

An extensive survey was undertaken in the different micro-geographic areas of coastal Maharashtra (India). Plants of the species were collected and identified using standard literature (Sharma *et al.*, 1996). Habitat characteristics were studied from different micro-geographic areas. For soil analysis standard methods are followed (APHA, 1992; Grasshoff *et al.*, 1983; Trivedy and Goel, 1996). Number of tides was calculated using the standard tide table for the stations on the Maharashtra coast.

Results and Discussion

Crinum latifolium var. *latifolium* L. a member of family Amaryllidaceae is found to be growing at several places along the coastline of Maharashtra. It is bulbous plant; bulbs large, subglobose, 12.5 to 15cm in diameter, neck short, stout; leaves numerous, 60 to 90cm X 7.5 to 12.5cm, lorate, acuminate, bright green with slightly scabrous margin; scape inserted on the neck of the bulb approximately as long as the leaves. Flowers fragrant in 10 to 20 flowered umbles, white, streaked or tinged with purple down middle, perianth tube 7.5 to 15cm long, curved, cylindrical. Anthers grey at maturity. Fruits subglobose, 3.7 to 5cm in circumference.

Its occurrence on the coast of Maharashtra is comparatively rare. It is distributed in the different micro-geographic regions which are ecologically distinct. It grows on the hill slopes, in the forest outskirts, canopy gaps, along the paddy fields and elevated dry lands, along the streams, puddles as well as on sand dunes and sandy beaches. It also grows along the fringing mangrove forest, borderlines of mangroves and even on the islands inundated frequently. Along the mangroves the species is associated with *Excoecaria agallocha* L., *Aegiceras corniculatum* L. Blanco., *Acanthus ilicifolius* L., *Xylocarpus granatum* Koen. and *Cynometra iripa* Kostel. It receives more than 300 tides per annum.

The physicochemical properties of the root zone soil from different habitats of *Crinum latifolium* var. *latifolium* L. are depicted in Table 1. From the values of electrical conductivity

and salinity, it is clear that the species is halophyte. It may grow on slightly waterlogged land but mostly it prefers well drained, slight gravelly soil. According to Dagar and Singh (2007) it is salt tolerant species occurring in Andaman and Nicobar islands of Indian subcontinent. Looking towards the range of physicochemical properties of root zone soil as well as habitat diversity, it seems that the ecological amplitude of the species is very wide. It can be positively utilized in eco-restoration programmes of degraded ecosystems

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Table 1. Range of physicochemical properties of root zone soil of *Crinum latifolium* var. *latifolium* L.

Parameter	Range
pH	6.00 to 7.93
EC (dS m^{-1})	0.93 to 18.19
Chloride salinity %	0.46 to 3.86
Organic carbon %	2.26 to 3.94
Total nitrogen %	0.1 to 0.405
Total phosphorus (mg/ 100gm)	10 to 37.23
Texture	
Gravel %	0.0 to 24.4
Coarse sand %	34.0 to 39.9
Fine sand %	35. 6 to 65.2
Silt + Clay %	0.0 to 0.7

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