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DOLICHANDRONE SPATHACEA (L.F) K. SCHUM: A THREATENED BIOLOGICAL ENTITY ON THE COAST OF MAHARASHTRA

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ABSTRACT

Dolichandrone spathacea (L.f) K. Schum is one of the narrowly distributed plant species along the coast of Maharashtra and Goa states in India. Its occurrence in the light of its ecological amplitude is studied thoroughly. It is very difficult but badly needed to establish its rank in the mangrove ecosystem. It is routinely used in traditional medicinal systems in the region.

KEYWORDS: *Dolichandrone spathacea.*

INTRODUCTION

The research work on the coastal plants of Maharashtra started in the first decade of 20th century. Initially number of reports were in the form of regional floras. It was the exhaustive work carried out by the pioneer workers at that time. It was the documentation of occurrence with comments on ecological conditions. Later on it is observed that some of the species could not find place in the revision floras. It clearly indicates disappearance of the species, from few or most of the localities. Recently, in 2002, Bhosale *et.al.*[1] reported some of critically endangered mangroves along the coast of Maharashtra. It was the re-discovery of the species from few localities. After this compilation, number of reports appear indicating rich mangrove diversity of Maharashtra coast (Gokhale *et.al.*,[2] Gokhale *et.al.*,[3] Gokhale *et.al.*,[4] Shaikh *et.al.*,[5]) But few mangrove species are not at all found place in any compilation. *Dolichandrone spathacea* (L.f) k.Schum of Family Bignoniaceae is one the prominent species in this

category. Till date it is not reported in regional or state level flora (Cooke,[6] Almeida,[7] Kulkarni,[8] Sharma *et al*.[9]) It is to be noted here that some of the manuals of the mangroves and coastal plants report its presence at regional and state level. It is reported to be growing in Goa state and as a species of coastal plains of Malabar by Kothari.[10] Site specific occurrence and ecology is not reported so far, for the west coast of India in general and Maharashtra in particular. This may be due to abrupt decrease in the number of individuals and habitats of *D. spathacea*. In the present paper occurrence of Dolichandrone *spathacea* (L.f) k.Schum is reported in the light of ecology, on the coast of Maharashtra and Goa states of India.

MATERIAL AND METHOD

With the aim of species documentation and diversity assessment, an extensive field survey was made along the coast of Maharashtra and Goa state of India. Number of estuaries visited and micro geographic regions were screened. The population was monitored for morpho-taxonomy and ecology.

RESULTS AND DISCUSSION

The term mangrove is not much clear. Its definition is variable as per the thinking of a person. There is no any sound base for these definitions. According to some researchers, mangroves are the woody trees while according to Kathiresan[11] the species with specific number of adaptation should consider as mangrove or mangrove associate. In the field, it is observed that all the species growing in estuary or on the boundary of estuary cannot show typical adaptation. Adaptation may be at morphological, anatomical or genetic level. Therefore, they cannot be always observed externally, but overall one can discriminate the species growing in narrow and wide ecological amplitude. Some of the species can grow from terrestrial habitat to mangroves (under estuarine conditions) and vice versa. Abundance of a former group is in the terrestrial habitat while abundance of the later group is in the mangrove area. Therefore one can imagine a buffer in between the two ecosystems or habitats i.e. mangroves and terrestrial communities. While surveying the mangroves and nearby communities it is observed that some of the species are strictly confined to the buffer zone, may popularly known as Back Mangal or Mangrove Associate. Typically these species have narrow ecological amplitude and disappearing very fast. Prima-fasciae *Dolichandrone spathacea* (L.f) k.Schum. falls in this category. The species neither abundantly present in mangrove nor in the terrestrial communities. It inhabits fringing patches along the estuaries, most of the time it favors protected areas with low tidal activities. As a matter of fact it

inhabits borderline of mangrove which can be routinely approached by local inhabitants for day to day requirements. Moreover, in the field it is noted that locally the species is known as 'Karvanji' and used in number of local traditional medicines.

On the coast of Maharashtra and Goa few trees of the *Dolichandrone spathacea* are recorded. These are growing along the borders, in the crop fields in enchroad mangrove land as well as directly on mangrove mud. It is well associated with *Rhizophora mucronata, Avicennia officinalis, Sonerettia alba, Sonerettia caseolaris, Heritierra litoralis, Exoecaria agallocha* as well as *Aegiceros corniculatum*, as per the location i.e. typical mangrove habitat or encroached mangrove land. It shows variation in shoot system. Especially the trunks of old trees on the mangrove habitat are massive at the base and tapering upward. Branching pattern is also somewhat different. It is evergreen or partially deciduous tree. Its stem is grey-brown and fissured in older individuals. Leaves opposite, compound, decussate, imparipinnate and petiolate, young leaves are reddish , leaflets 5-10 X 3-5 cm, ovate in 4-5 pairs with entire margin, presence of hairy domacia on abaxial angles between larger veins is the anatomical peculiarity of *Dolichandrone spathacea*. Flowers large, showy, white coloured, perfect, zygomorphic, axillary,solitory in terminal recimes. Calyx green, inflated, tubular and splitting adaxially. Corolla gamopetalous, trumpet, long, tubular 7-8 mm wide and 10 cm long. Abruptly enlarged into 5 fringed lobes and spreading up to 12 cm in diameter. Perfect stamens 4 inserted in the throat of corolla tube and enclosed by corolla lobes. Pollen fertility is 87% (Gokhale et al.[12]) Ovary superior, slender, cylindrical based on narrow disc, ovary bilocular, ovules many on axile placenta. Pod flattened, pendulus, linear, dehise with two walls to reveal central replum with seeds. Seeds many, non endospermic, oblong – rectangular, 1-5 cm long with soft, corky, winged testa.

According to Chavan and Gokhale[13] the population of *Dolichandrone spathacea* is highly fragmented in the form of a single or very rarely small group of individuals. Habitat modification may possibly the potential threat for the species. Gokhale et al.[12] suggested that the species has small sized population which is narrowly distributed.

Present situation of the species on the coast of Maharashtra as well as Goa and previous worldwide reports of the species, raise some questions like whether the species is rare or becoming rare? What is its exact ecological amplitude? Whether the species is recalcitrant ? What is the rate and pattern of its regeneration? Whether it shows any typical adaptation in relation to habitat? Which is the effective mean of seed dispersal? Whether the species is

deciduous? Whether the species is to be considered as mangrove or mangrove associate or back mangal or simply as a Coastal Biological Entity. However its presence on the coast of Maharashtra definitely increases the value of coastal plant diversity. Further work on this line is in progress to address above mentioned questions.

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