

Exotic herbs and specific invaders of Puducherry Coramandel coast South India

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SUMMARY

Diversity, density of exotic herbs and the extent of invasion of exotic invaders (*Parthenium hysterophorus* L., *Sida acuta* Burm.f., *Sida rhombifolia* L., *Croton bonplandianus* Ballion and *Lantana camara* L.) in disturbed and undisturbed areas of Puducherry coramandel coast, South India have been investigated. A total of 33 exotic herbs belonging to 33 species, 32 genera and 22 families were noted. Of these *Sida acuta* Burm.f., predominantly colonize (244 individuals/.1 ha). The density of *Parthenium hysterophorus* L. is intense in disturbed areas than in undisturbed one. The extensive invasion of these weeds directly or indirectly interfere the ecosystem of the native species composition.

Key words : Exotic herbs, Ecological probe, Invaders, and Disturbance.

The dispersion of plants from country to country may pave way in highlighting the concept of exotics. Thus, exotics are plants, which are not indigenous to India (Matthew, 1991). The exotics, which successfully establish themselves in a new locality, are called invaders. The invaders contribute directly to biodiversity deterioration and hence there is a need to venture into mechanism of invasion and tremendous ability to reproduce and displace native species in its favored habitat. In addition to elevated seed production and dispersal, evidence now suggests invasive have less amount of DNA and can thus divide and multiply more quickly than non-invasive. Invasion is directly associated with primary habitat destruction and disturbance by anthropogenic activities. Disturbances may reduce number of abundant species, and increases open spaces sometimes, making other resources available that can be exploited by less common species or invaders (Thompson *et. al.*, 1998).

The present study aims at listing out the existing herbs in Puducherry unlike herbs woody speices are not successful invaders (Matthew, 1991). The degree of disturbance and its impact on invasion of five predominating invaders viz., *Parthenium hysterophorus* L., *Sida acuta* Burm.f., *Sida rhombifolia* L., *Croton bonplandianus* Ballion and *Lantana camara* L. have been discussed in this study.

MATERIALS AND METHODS

The present survey on exotic herbs and invaders was conducted in urban and in the outskirts of Puducherry. Puducherry is a Union Territory of peninsular India, with

a flat terrain of an average elevation of about 15 m above sea level on the coramandel coast of the Eastern Ghats, South India, which are almost in a semicircle between 11 46' and 12 3' North latitude and between 79 36' and 79 53' of the Eastern longitude (Fig. 1). The place experiences a hot tropical maritime type of climate characterized by annual rainy days range of temperature, humid weather and moderate rainfall. The annual rainy days for the latest four years (1999-2004) were 52 and the mean rainfall was 1678.4 mm. The annual maximum temperature was 33.38 C and minimum was 23.75 C for the same period (Kadavul and Kamalam, 2004). These regions are embedded respectively in South Arcot and Thanjavur districts of Tamilnadu. The Union Territory spread over 250 Sq. Km. Nearby South Arcot district of Tamilnadu.

The exotic herbs were screened and collected after extensive field trips from September 2003 to January 2004. They were compared with the data from the floras such as An Excursion Flora of Central Tamilnadu Carnatic (Matthew, 1991), The Flora of the Presidency of Madras, (Gamble, 1915-1938) and Flora of Tamilnadu (Henry and Nair, 1983).

The quantitative analysis of invaders viz., *Parthenium hysterophorus* L., *Sida acuta* Burm.f., *Sida rhombifolia* L., *Croton bonplandianus* Ballion and *Lantana camara* L. were analysed at two types of vegetations and designated as disturbed and undisturbed. The disturbed area characterizes with intense human interactions and pollution and the undisturbed area thick vegetation and biodiversity where the human invasion is feeble. From the chosen sites, (0.1 ha area) sampling was done on 10

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