



Extending Habitat of an Exotic Aquatic Weed *Alternanthera philoxeroides* (Mart.) Griseb. in Maharashtra, India

P. T. Humane, S. R. Somkuwar¹, and Alka Chaturvedi²

Dept. of Botany, Dharampeth M. P. Deo Memorial Science College, Nagpur-440033.

¹Dept. of Botany, Dr. Ambedkar College, Deekshabhoomi, Nagpur-440010.

²Dept. of Botany, RTM Nagpur University, Nagpur-440033.

Corresponding author: aareenpapa_2004@rediffmail.com

Abstract:

Alternanthera philoxeroides belongs to family Amaranthaceae. It is commonly called as 'Alligator weed' and is a perennial aquatic and semi-aquatic plant, native to tropical and subtropical South America. In this paper an attempt is made to show its extending habitat in Maharashtra. This species is an addition to the aquatic flora of eastern Maharashtra especially Vidarbha as well as a threat to it. Earlier it has been reported from Jammu & Kashmir, Orissa and Utter Pradesh, Kolkata, Andaman Island, some parts of south India.

Key Words: *Alternanthera philoxeroides*, Aquatic flora, Extending habitat, Eastern Maharashtra

INTRODUCTION

Alternanthera philoxeroides is a perennial aquatic or semi-aquatic or ambhigious herb native of South America belong to family Amaranthaceae. It is commonly called as 'Alligator weed'. *A. philoxeroides* was introduced in India in the middle of 20th Century, around 1940s, mostly in lakes (Maheshwari, 1965) and in ponds (Cooke, 1996). There are few reports of this plant during the twentieth century but there seems to be a flood of reports from all over India since the last decade, reviewed by Chatterjee and Dewanji (2010). Many of the earlier reports on *A. philoxeroides* show that it spread across climatologically diverse regions of India, like extreme north Himalayan foothills (Negi and Hajra, 2007) and mountainous states of Jammu and Kashmir (Masoodi and Khan, 2012), even some parts of wet rain-fed regions of North-East India (Jain et al., 2007; Singh et. al., 2010), fertile Eastern Plains (Paria and Mukherjee, 1981), drier plains of South Orissa (Panda Anita and Misra Malaya, 2011), Central India (Singh and Pandey, 1998), Western India (Wagh et. al., 1995), tropical Southern India (Reddy et. al., 2008) and even in coastal regions of Andaman Islands (Reddy and Raju, 2005), thus indicating its ability to proliferate throughout the country irrespective of climatic conditions (Pramod et. al., 2008; Masoodi and Khan, 2012).

A. philoxeroides has recently invaded inland aquatic bodies and wetland of Nagpur region of Maharashtra and it was not earlier reported from Vidarbha. Review of literature show only records from the western Maharastra (Pune) (Das, S. K. D.; Sign, N. P., 2006). This indicates it is invading the inland water bodies

of the region like *Eichhornia crassipes* and *Pistia stratiotes*. It is generally distinguished from other similar species of genus *Alternanthera* by its combination of opposite elliptical leaves up to 4 in long, smooth margins, hollow stems with a hairy groove on two sides opposite the leaf-nodes and papery white ball-shaped flowers on stalks.

Similar-looking plants

The four native Australian species of *Alternanthera* are *A. angustifolia* (narrow-leaved joyweed); *A. denticulata* (common or lesser joyweed); *A. nana* (hairy joyweed); and *A. nodiflora* (common joyweed). These are easily distinguished from *A. philoxeroides* because they have sessile flower clusters, whereas *A. philoxeroides* has flower clusters on its stalks i.e. peduncled inflorescence.

The specimens were collected from different aquatic habitats of Koradi Lakes & Kandri mines of Nagpur districts. Efforts were made to collect the plant materials in flowering and fruiting conditions for the correct botanical identification.

DESCRIPTION

Leaves: The spear-shaped leaves are in opposite pairs along the stems and are generally dark green, waxy, glossy and sessile (there is no obvious stalk attaching them to the stem). Leaf size and shape vary considerably with growth habit and conditions. Leaves range from 2 to 12 cm in length and 0.5 to 4 cm in width, usually with an acute tip.

Stems: The stems of this plant are hollow when mature and can be single or branched to form dense mats. Stems may lie flat along the ground or grow vertically. Vertical stems are dark green and can be up to 80 cm long, or longer (up to 2 m) if supported on other vegetation. Prostrate stems can be light green,

yellow or brown to red. The prostrate stems buried in silt found the nodes become

thickened. Stems have pairs of leaves at each node (**Fig. 1 a-c**).



Fig. 1(a): Flowering twig and Inflorescence



Fig. 1(b): Pressed branch



Fig. 1(c): Plant with hollow stem and fibrous roots

Fig. 1 (a-c): *Alternanthera philoxeroides* (Mart.) Griseb

Roots: It has an extensive underground filamentous root system occur at each node along a stem. They are relatively fine and short in water but become thicker, starchy, rhizome-like and longer in soil.

Flowers and Flowering:

Papery white ball-like flowers occur on peduncles (stalks) 1 to 9 cm long. Each ball-like flower is an inflorescence made up of a number of smaller individual flowers. It flowers in mid to late summer, peaking in January in

aquatic situations and earlier (from November to January) in terrestrial situations.

Distribution and Habitat: Native to South America. It is found along the fringes of rivers, Nallahs and Lakes wet banks in the study regions.

Spread: Accidental spread occurs commonly through human activities like earthmoving machinery and watercraft; through the slashing and mowing of infested areas; in mulch, gravel extraction and turf; and even through control activities, etc.

RESULT & DISCUSSION

The *taxon* is recently invaded inland water bodies in Nagpur region of Eastern Maharashtra state, India and not reported earlier from the area. It is now spreading in nearby water bodies and growing vigorously. It is trying to occupy most of the space available in the habitat and destroying other native aquatic flora. The systematic study of *Alternanthera philoxeroides* and other exotic genus of the family Amaranthaceae will allow garden scientists, evolutionists to develop models for revealing evolutionary mechanisms and biogeography in India. This report will be helpful to farmers, students and researchers related to these fields for identification of *A. philoxeroides* weed and its specificity. Further studies may also be done to check their allelopathic effects on same agricultural crops and native plants.

ACKNOWLEDGEMENT

The authors are very thankful to the Science and Engineering Research Board (**SERB**), Department of Science and Technology (**DST**) New Delhi, for providing the financial assistance in the form of major research project.

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