

Preliminary surveys of the distribution of *Chromolaena odorata* in Bangladesh

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Chromolaena odorata (L.) R.M. King and H. Robinson (Asteraceae), commonly known as Siam weed, is a notorious agricultural and environmental weed, and can cause allergenic effects in humans and health impacts if cattle consume the weed. In preliminary roadside distribution surveys conducted in Bangladesh in 2009, a vast area of land, especially along roadsides, in fallow land and horticultural gardens in the districts of Rajshahi, Jessore, Chittagong, Manikganj, Bandarban, Patuakhali, Faridpur, Mymensingh, Tangail and Dhaka, was infested with *C. odorata*. Detailed surveys to determine the entire distribution of *C. odorata* in the country, a risk assessment of the weed for inclusion in the list of noxious weeds, as well as detailed studies for sustainable management of the weed are required.

KEYWORDS: Siam weed distribution; *Chromolaena odorata*; weed surveys

INTRODUCTION

Siam weed, *Chromolaena odorata* (L.) R.M. King and H. Robinson, a perennial weed, belongs to the family Asteraceae. It is an aggressively invasive terrestrial weed. The plant thrives on disturbed land and readily invades crops, pastures and plantations. *Chromolaena odorata* reaches heights of 3m, but can scramble up trees, into the canopy, to reach 10m (Holm et al. 1977). The plant grows rapidly (20mm/day) and forms dense thickets, which smother indigenous vegetation and increase the intensity of fire (CRC 2003). *Chromolaena odorata* readily invades plantations of cocoa, plantain, oil palm, rubber and other long season crops (Holm et al. 1977). In areas where Siam weed grows, growth of other plants is always hampered (Akobundu 1987). The weed is allelopathic in nature and affects the seed germination and growth of other crop plants (Oke 1988; Adetayo et al. 2005). *Chromolaena odorata* produces a massive quantity of small, light seeds (up to 1 million/plant) which are dispersed mainly by wind and water (Holm et al. 1977), and it can cause allergic reactions (CRC 2003). Cattle may develop toxicity reactions in the stomach when the weed is consumed (Parsons and Cuthbertson 1992).

Chromolaena odorata has been present in Bangladesh for a long time (Fig. 1), with the first record from the 1870s (McFadyen 1988).

MATERIALS AND METHODS

A preliminary survey of the distribution of *C. odorata* was conducted in 16 Districts in six Divisions of Bangladesh (Table 1) during March to May 2009. Highways and main roads of these Districts were searched for *C. odorata*. When the weed was observed at densities of at least one plant per 10m² area, it was recorded as presence of the weed and mapped. Photographic evidence of infestations was recorded.

RESULTS AND DISCUSSION

During the roadside surveys in 2009, *C. odorata* was observed at densities higher than the cut-off in 10 of the 16 Districts surveyed (Table 1, Fig. 2). Infestations of the weed occurred near residences, along roadsides, and in fallow land. The area invaded by Siam weed continues to increase and presents a threat to agriculture and biodiversity conservation in Bangladesh. Awareness about the detrimental impacts of the weed needs to be raised in Bangladesh. A risk assessment should be conducted so that *C.*

Table 1. Districts of Bangladesh surveyed for the presence of *Chromolaena odorata*.

Division	District	<i>C. odorata</i> present? ¹
Barisal	Patuakhali	Yes
Chittagong	Bandarban	Yes
Chittagong	Chittagong	Yes
Dhaka	Dhaka	Yes
Dhaka	Faridpur	Yes
Dhaka	Gazipur	No
Dhaka	Manikganj	Yes
Dhaka	Mymensingh	Yes
Dhaka	Netrakona	No
Dhaka	Tangail	Yes
Khulna	Jessore	Yes
Khulna	Khulna	No
Rajshahi	Bogra	No
Rajshahi	Rajshahi	Yes
Rajshahi	Sirajganj	No
Rangpur	Rangpur	No

¹Yes: densities of at least one plant per 10m² area.

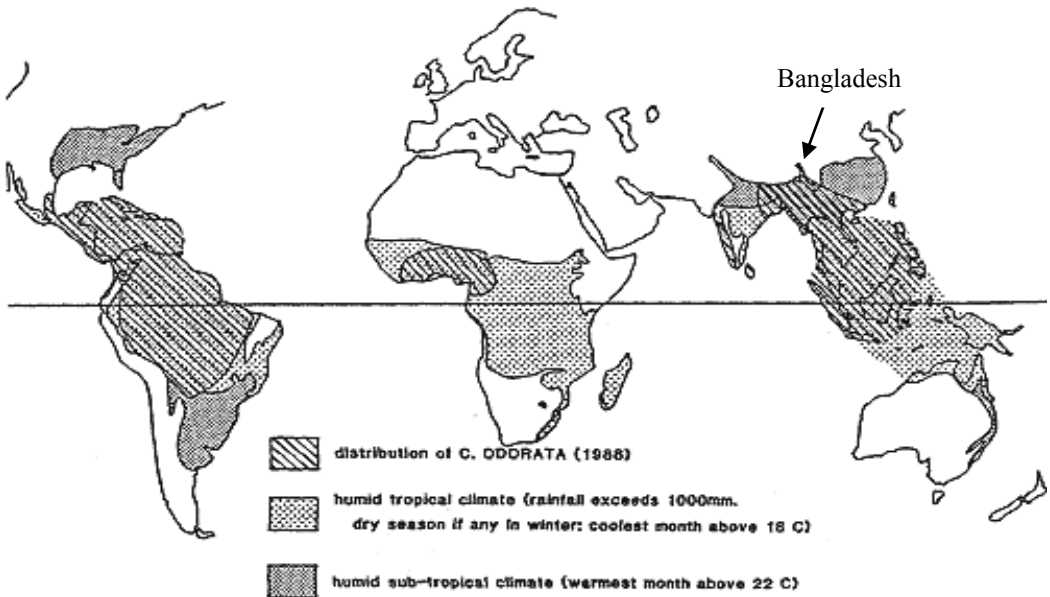


Figure 1. Global distribution of *Chromolaena odorata* (source: McFadyen 1988).

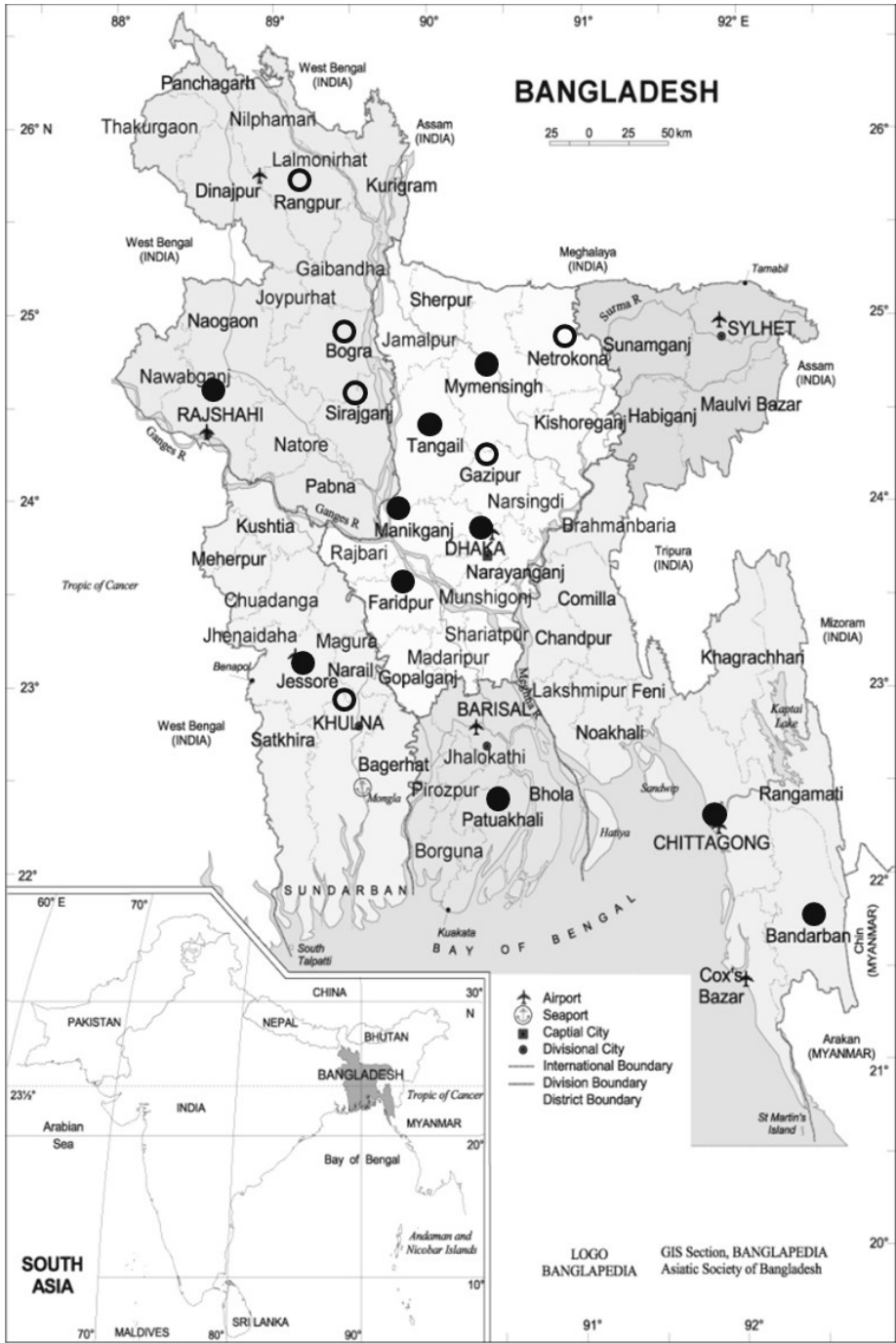


Figure 2. Distribution of *Chromolaena odorata* recorded during 2009 in surveys in Bangladesh. Solid circles indicate Districts that were searched and *C. odorata* was recorded at a density of at least one plant per 10m² area, while open circles indicate Districts searched in which this was not the case.

odorata can be included on the list of noxious weeds in the country. It would also be pragmatic for research on the control and sustainable management of *C. odorata* to be started soon.

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