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***Parthenium hysterophorus* L. Sp. Pl.: 988 (1753) A New Introduction to Pakistan**

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Abstract: *Parthenium hysterophorus* L. (Heliantheae: Asteraceae) is reported as a new record from Pakistan. In 1993 only a few plants were present, now this has spread over a large area mostly along the roadsides. The aggressive nature warrants immediate management of parthenium weed so that it does not enter the fields.

Keywords: Parthenium weed, ragweed parthenium, carrot grass, Congress grass

Introduction

A highly vigorous plant forming white flower cover over the infested area in Rawalpindi-Islamabad. This species is definitely a new introduction in the area, the range starts from Attock spreading throughout Punjab, mostly along the roadsides. The aggressiveness of this weed is evident from a few plants in 1993 to almost full coverage of the roadsides by September 1999. It has every potential of spreading into the fields and orchards. The extreme disturbance of the natural habitat in the area may be considered as the main reason for its spread.

The alarming rate of spread is associated with photo insensitivity, high reproduction capacity and seeds without dormancy. *P. hysterophorus*, a drought resistant plant can grow in almost all soil types, but is particularly successful on vertisols (Mahadevappa, 1997). Protecting the natural habitat from being disturbed offers significant resistance to the entry of parthenium weed (Mahadevappa *et al.*, 1992). Large areas of grasslands are degraded, having been converted from dominance by native perennial grasses to the unpalatable, annual, exotic herb *Parthenium hysterophorus* (Fensham, 1999).

According to McFadyen (1995) after 1-10 years exposure to the weed 10% to 20% of the population will develop severe allergic reaction. These may be hay fever, asthma or dermatitis and can be caused by dust and debris from the plant as well as pollen. Several cattle disorders have also been reported (Mahadevappa, 1997).

The genus *Parthenium* L. is distributed in North and Central America, Northern South America, West Indies, one species *P. hysterophorus* L. is a widespread weed (Karis and Ayding, 1994). The origin of *P. hysterophorus* is the South of USA and the West Indies (Hind *et al.*, 1993). Today it is widespread under the tropics of the old world as a weed of arid cultures, fallow lands, waste places and roadsides. *P. argentatum* (guayule) has been utilized as a minor source of rubber (Jeffrey, 1993).

Material and Methods

Plants have been collected from Islamabad-Rawalpindi; 20 September 1993, 6 August 1999, 28 September 1999 for description and identification. Reported from Hind *et al.* (1993).

Results

Description: Annual or perennial, stem 30-110 cm, erect, striated, greenish yellow, rigid. Leaves alternate dark green 10-30 cm,

bi-pinnatisect; hairy on both sides, hairs white adpressed. Margins entire, apex cuspidate. Inflorescence laxly corymbose, small. Involucre bi-seriate, outer oval, inner oblong. Hairy, yellow green, greenish in the upper parts and yellowish below. Capitula hemispherical, white, peduncle 1-2 cm, Rays 5 oval, inner florets infundibuliform 3-5 mm long. Achenes 5, 2 mm long with a pappus of 0.5 mm. Back, pointed at one end, blunt at the other; one surface convex (Fig. 1, 2, 3).

Discussion

Commonly known as ragweed parthenium or carrot grass belongs to the Compositae or Asteraceae one of the largest families of flowering plants. It has achieved a major weed status in India and Australia within the past few decades (Evans, 1997). Reported as common in orchards, canal banks, farm drainage, irrigation channels and a problem is soybean, millets, cotton, rice and wheat (Gupta, 1987). The identification and management of this plant at present will save us from the burden of yet another weed in our crops. The aggressive nature may be responsible for further reducing the already low average yields.

It is an addition to the flora of Pakistan and requires a thorough study. Parthenium weed, because of its invasive capacity and allelopathic properties has the potential to disrupt natural ecosystems (Evans, 1997).

Table 1: Plants growing in association with *Parthenium hysterophorus*

<i>Xanthium strumarium</i> L.
<i>Conyzanthus squamatus</i> (Spreng) Tamamsch
<i>Conyza bonariensis</i> (L.) Cronq.
<i>Conyza</i> sp. (Khalid, 1995)
<i>Carthamus oxyacantha</i> Bieb.
<i>Rumex dentatus</i> L.
<i>Malvastrum coromendelianum</i> (L.) Garcke
<i>Sorghum halepense</i> (L.) Pers.

However, it has been identified as a pesticide source (Hiremath and Ahn, 1997). Sowing parthenium with rice increased grain yield, although there was no allelopathic weed suppression (Kandasamy and Raja, 1999). Leaf extract stimulated silkworms to feed and increased leaf utilization efficiency, ultimately producing bigger cocoons and improving all economic traits (Patil *et al.*, 1997; Singh *et al.*, 1998).



Fig. 1: Flowering branch x 7

Fig. 2: Capitula with 5 ray florets x 11.

Fig. 3: Ventral view of complex ray floret x 11

Coccinella septempunctata L. and *Chrotogonus trichiptris* are the two insects collected from the plants. Several plants (Table 1) have been found in association with parthenium, while *Cannabis sativa* is a naturally growing plant being replaced by this weed.

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