

Rottboellia cochinchinensis

Introduction

Corn grass, *Rottboellia cochinchinensis* (Lour.) Clayton, is native to India and has spread throughout the tropics and subtropics. It is believed that it was introduced to the Caribbean from Southern Asia. It has been recorded as a weed in 18 crops in 28 countries (Holm *et al.*, 1977). Corn grass is an extremely vigorous competitor in cereal crops. It is capable of extremely rapid growth and can dominate a crop over a very short period of time.

Identity

Authority	: (Lour.) W.D. Clayton
Classification	
Kingdom	: Plantae
Phylum	: Angiospermophyta
Class	: Monocotyledonae
Order	: Asterales
Family	: Poaceae (Panicoideae)
Tribe	: Andropogoneae
Genus	: <i>Rottboellia</i>
Species	: <i>cochinchinensis</i>
Synonym	: <i>Rottboellia exaltata</i>
Common names:	Corn grass, itch grass, Raoul grass, sancarana, paja peluda
Role	: Pest

Morphology

Corn grass is a tall, erect and strongly tufted annual grass (Fig. 1). The plant has a solid stem; lanceolate leaves with detectibly scabrid margins; culms obtusely angular, smooth, 1 to 3 cm; leaf sheaths, spreading; long sharp, tubercle-based, siliceous, fragile, irritating hairs that break off on contact; ligule short, fringed with hairs; blades linear-lanceolate, flat, wide and rough on both surfaces but sometimes smooth below, very rough along the margins; inflorescence a solitary raceme at the terminus of the culm and each branch of the culm; spikes cylindrical, 8 to 15 cm long, about 3 mm in diameter, mostly solitary, narrowed upwards, glabrous, sheathed at the base, readily breaking into hard cylindrical joints 6 to 7 mm long; spikelets sometimes sterile; sessile spike 5 to 7 mm; pedicelled spikelets variable, 3 to 6 mm; grain obliquely ovate, strong at apex with flat backside. It can be distinguished from other tall grasses by the branching habit, the irritating hairs and the unusual flowering heads.

The weed has a wide ecological range. It is found in waste places and open fields on deep soils on low to middle elevations. It is propagated by seeds enclosed in spike joints.

Dispersal / vectors

Dispersal seems more related to agricultural practices than the spikelet weight. In Central America, corn grass is dispersed with rice seeds. It is not easily scattered by wind. Spikelets are spread by water, poorly cleaned crop seeds, and harvesting machinery. Birds and mongoose can spread the weed.

Management**Cultural control**

A judicious crop rotation programme may provide a favourable solution.

Biological control

The use of mycoherbicides – isolates of *Puccinia* spp. are being tested.

Chemical control

This weed is not readily controlled by herbicides. However, in the cropping situation, particularly with corn, rice and sugarcane, it poses a challenge. The weed has shown tolerance to the triazines. The use of selective herbicides e.g. glyphosate has given good control.

Pest Significance

Corn grass can cause significant problems as it is capable of extremely rapid growth and is very competitive. This weed is one of the most dominant in sugarcane, maize and upland rice in the Caribbean. Infestation of the weed in maize can result in 60 – 70 % yield reduction. The irritating hairs of the weed make harvesting difficult.

The weed is an alternate host for the following plant pathogens, nemas and insects:

- i. *Puccinia rothboelliae* (rust)
- ii. *Cercospora* sp.
- iii. *Pyricularia setario nisikade* (leaf spot)
- iv. *Curvularia cymbopogonis*
- v. *Sphacelotheca aphiuri* (smut)
- vi. Maize streak virus.
- vii. *Meloidogyne javanica*
- viii. *M. incognita* var. *acrita*
- ix. *Diabrotica* sp.
- x. *Euscyrtus concinnus*

Inspection Measures:

The weed seed is easily identifiable in contaminated crops such as wheat, rice, and corn. Strict adherence to certified seeds is the main strategy to preventing entry of the weed.

Host Notes

Sugarcane, maize, upland rice, banana, cowpea, cassava, peanut and yam are the crops mainly infested.

Distribution

Countries seriously affected by the weed include the states of Florida and Louisiana, USA, Malaysia, Zimbabwe, Australia, Colombia, Cuba, Indonesia and the Philippines, the Caribbean states and South East Asia.

Bibliography

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Web Resources -

<http://www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB/6701de01.htm>

<http://www.cirad.fr/presentation/en/program-eng/ sugar/rapanu98/pdf/racas62-69.>

<http://www.nri.org/projects/093.htm>

<http://www.image.fs.uidaho.edu/vidе/descr700.htm>



Fig. 1: *Rottboelliae exaltata*