

Echinochloa colona

Introduction

Echinochloa colona (L.) Link, Jungle Rice is one of the most serious weeds of rice. It is distributed throughout the rice growing areas of the world. Its prostrate growth habit in the early seedling stages- that of rooting at the nodes to gain space and assuming an erect posture when light is limiting- makes it a very competitive weed for most crops. *E. colona* may be native to the Americas.

Identity

Authority	: (L.) Link
Classification	
Kingdom	: Plantae
Phylum	: Angiospermophyta
Class	: Monocotyledonae
Family	: Poaceae (Gramineae)
Genus	: <i>Echinochloa</i>
Species	: <i>colona</i>
Synonyms	: <i>Echinochloa colonum</i> , <i>E. crus- pavonis</i> (Kunth) (Schult). <i>E. crus- galli</i> , <i>Panicum colonum</i>
Common names:	Jungle Rice, little barnyard grass, arrozde monte, paja arroz, Zacate Pinto, herbe à blé.
Role	: Pest

Morphology

Fournet & Hammerton (1991)

The weed is an annual with spreading shoots ascending up to 50 cm (fig. 1); semi-prostrate, but ascending, much branched annual grass, leaf blade folded in the bud, 15 - 20 cm x 7 mm, entirely glabrous; Ligule absent, replaced by a raised, whitish, V-shaped line; leaf sheaths sometimes reddish coloured; Panicle compact 5-15 cm, 3 - 6 cm, rather thick, crowded racemes, each 1 - 4 cm, usually red-purple, but a green form is sometimes found; spikelets sessile, 3 mm.

Biology & Ecology

Echinochloa colona is propagated by seeds and rhizomes. One plant may produce thousands of seeds. Although it is an annual, it may be vegetatively propagated by production of new roots and shoots at the nodes when it is in a stage of prostrate growth. Weed seeds germinate earlier and are more vigorous than upland rice. The critical period of weed competition occurs 4 to 9 weeks after sowing. This weed removes 60 - 80% of nitrogen applied to the crop. It can reduce tillering in rice by 50% and reduce yield between 18-35%.

The weed is most adapted to humid and waterlogged areas. It is more common to rice, and prefers lowlands up to 1000 m in elevation.

Dispersal/vectors

The seeds often enter rice fields with crop seeds or seedlings. They may be transferred between fields on farm machinery and on mud on the feet, fir, feather and strain of birds, rodents and larger animals. Wild ducks have been reported as dispersal agents. Irrigated fields and rice paddies are often interconnected through a system of canals, which is common to all and may therefore serve as a means of spreading the seeds.

Pest Significance

The weed is a major problem in rice. *E. colona* is the host of *Magnaporthe grisea* and many viruses in rice. The weed is an alternate host of *nematodes e.g.; Meloidogyne incognita*, and viruses which produce abaca mosaic and elojo, hoja blanca disease of rice, tengro, and sugarcane mosaic. It is also an alternate host of *Oebalus* spp. and *Sogatodes* spp. The weed is dominant and very competitive. This could be an indication that it produces allelochemicals.

Management

The weed is best managed in rice crops through the use of herbicides, e.g., fluorochloridone , pendimethalin and propanil. In other crops, the application of gramicides is very effective.

Host Notes

Echinochloa colona is found in waste places, rotation crops, perennial crops and aquatic environments (rice fields).

Main hosts- rice, corn, sugarcane, vegetables, cotton, banana.

Distribution

Echinochloa colona is found throughout the rice growing areas of the world- tropical and sub tropical.

Inspection Procedures:

Jungle rice is a significant weed in sugarcane, rice, corn and sorghum in the Caribbean. Its biggest threat of entry into any country is through contaminated grains to be used as seed material. The principal approach is to prohibit the entry of seeds unless accompanied by the Quality Assurance Seed Certificate, and restricting/confining grains to be used as animal feed or for processing to be confined in bonds or warehouses.

Bibliography

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- Diarra A, R.J. & Talbert, R.E. (1985). Growth, Morphological characteristics of red rice biotypes. *Weed Sci.* **33 (5)**: 703-707.
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- Hoflinger, Scholz, B&H. (1981) Monocot Weeds Document, *CIBA- Geigy* Berlin
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- Smith, R.J. (1981). Control of red rice (*Oryza sativa*) in water seeded rice. *Weed Sci.* **29**: 663-666.

Web Resources -

<http://www.linnaeus.nrm.se/flora/mono/poa/echin/echicol.html>

<http://www.herbaria.harvard.edu/~rangelo/ Neatlas0/Neatlas1/NE1-30>

<http://www.weedscience.org/Case/Case.asp?ResistID=72>

[http://www.pppis.fao.org/GPPIS.exe\\$ShowHost?Host=969](http://www.pppis.fao.org/GPPIS.exe$ShowHost?Host=969)



Fig. 1: Echinochloa colona