

primefact

Exotic Pest Alert: Rice water weevil

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Rice water weevil (*Lissorhoptrus oryzophilus*) is an exotic plant pest **not present in Australia**

This pest is a serious threat to Australia's rice industry

If found it must be reported promptly to the **Exotic Plant Pest Hotline 1800 084 881**

Rice water weevil

Rice water weevil is a pest of rice crops.

Adult rice water weevils can be difficult to differentiate from native weevil species. Seek advice if you suspect that rice water weevil is present.

Description

Adult rice water weevils are 3-4 mm in length. They are greyish brown in colour with a dark marking along the back from the base of the head to the middle of the wing covers (Figure 1).

Damage

Adult rice water weevils overwinter in grasses and leaf litter. They emerge from overwintering in spring and invade rice fields to feed on the leaves of seedlings.

The adult rice water weevil feeds between the veins of rice leaves. The longitudinal feeding scars are white (Figure 2).

Economic damage is primarily caused by the rice water weevil larvae. Larvae feed below the soil on the roots of rice plants. Root damage leads to reduced nutrient uptake and plants turn yellow and may die prematurely.

Plants that survive do not reach normal height and produce less grain than unaffected plants. Maturity may be delayed and grain weights may also be reduced.



Figure 1 Rice water weevil adult (size 3-4 mm)



Figure 2 Feeding scars caused by adult rice water weevil

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Lifecycle

Female rice water weevils deposit their eggs in a leaf sheath at or below the water line.

Eggs are white and cylindrical and less than 0.4 mm long.

First instar larvae are less 1 mm long. Larvae initially feed in the leaf sheath before moving into the soil to feed on the roots. Final instar larvae grow to about 5 mm in size.

Larvae form cocoons attached to the roots and pupate. The pupal stage lasts for approximately 3 weeks at 22°C but will be shorter at higher temperatures.

Adults emerge and either fly to overwintering sites or invade other rice crops.

A complete lifecycle (egg to adult) takes around 11 weeks at 22°C.

Hosts

Cereals (Poaceae family) and rice (*Oryza sativa*) are the primary hosts of rice water weevil.

Distribution

Rice water weevil is native to North America. It is naturally distributed from Mexico to Canada and has spread to many countries in Central America. Rice water weevil has been introduced and become established in Japan, China, Italy and Korea.

In California there is a female only population of rice water weevil which is capable of producing viable eggs without male fertilisation (parthenogenetic). Rice water weevil populations in Japan and the Dominican Republic are also parthenogenetic and were probably derived from the Californian population.

Rice water weevil is not present in Australia.

Actions to minimise risks

Put in place biosecurity best practice actions to prevent entry, establishment and spread of pests and disease:

- practice "Come clean, Go clean"
- ensure all staff and visitors are instructed in and adhere to your business management hygiene requirements
- source propagation material of a known high health status from reputable suppliers
- keep records

Reporting

If you suspect rice water weevil:

Call the Exotic Plant Pest Hotline on 1800 084 881

Email clear photos with a brief explanation and contact details to biosecurity@dpi.nsw.gov.au

An **exotic plant pest** is a disease causing organism or an invertebrate not present in Australia and which threatens agricultural production, forestry or native and amenity plants.

Resources

Plant Health Australia (2009) Pest Risk Review – Rice water weevil

Louisiana State University AgCentre – Rice Insect Fact Sheets – Rice Water Weevil

UC IPM Online: UC Pest Management Guidelines – Rice water weevil (updated 2/09)

Figure 1 courtesy of J. Saichuk, Louisiana State University AgCentre

Figure 2 courtesy of N. Hummel, Louisiana State University AgCentre

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