Pacific Pests, Pathogens & Weeds - Fact Sheets

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Grass leaf beetle (354)

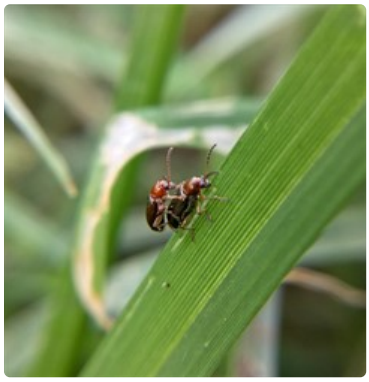

Photo 1. Adult leaf beetle, *Oulema* species.

Photo 2. Hump-backed, black 'blob' of the larvae of *Oulema* species from Fiji.

Photo 3. Damage by the leaf beetle, *Oulema* species to crowsfoot grass, *Eleusine indica.*

Photo 4. Damage by the leaf beetle, *Oulema* species, to barnyard grass, *Echinochloa crus-galli.*

Common Name

Leaf beetle, grass leaf beetle (not an accepted common name).

Scientific Name

Oulema species. The *Oulema* species recorded from Fiji has not been identified. However, the cereal leaf beetle (oat leaf beetle), *Oulema melanopus*, is a major pest of wheat, barley, oat, and millet, worldwide. In countries where it is not yet present, it is considered a pest of quarantine importance. For these reasons, the Fiji species is described here.

Distribution

Unknown. In the Pacific islands, *Oulema* (unknown species) has been recorded only from Fiji.

Hosts

Grasses. In Fiji, the *Oulema* species has been recorded on *Eleusine indica* (crowsfoot) and *Echinochloa crus-galli* (barnyard).

Symptoms & Life Cycle

As the species is unknown, the symptoms and life cycle are taken from accounts of the cereal (or oat) leaf beetle, *Oulema melanopus* and *Oulema rufocyanea.* The appearance of the adult and larva of the *Oulema* species in Fiji is similar (Photos 1&2).

The larvae do the greatest damage by feeding on the surface layers of the leaves, resulting in long skeletonised strips, and causing the

leaves to die early (Photos 3&4).

Eggs are laid along the mid-vein of the leaves. The larvae are white, hump-backed and have black heads. They protect themselves from predators by putting faecal material over the body so that they become shiny black 'blobs'. After passing through four stages the larvae fall to the ground and pupate. The adult is about 5-6 mm long, with a red head and thorax, and black wing cases.

Spread is on the wing; *Oulema* is a stronger flyer.

Impact

Stands of crowsfoot grass are severely damaged by the larvae, such that most of the surface area is destroyed; it is likely that plants damaged in this way would not be able to compete with other weed species, although no studies have been made to check this. Less damage occurs on barnyard grass.

Detection & inspection

Look for the small (5 mm long) distinctive red and black beetle with long antennae, often with the male on top of the female, called 'mate-guarding' - preventing other males from accessing the female. Look for chewed patches on the leaves which turn white, and are noticeable in contrast to the green of remaining healthy parts.

Management as Biocontrol Agents

GENERAL REMARKS

It is only since 2015 that this species of *Oulema* was known to be in Fiji, and there have been no studies on its usefulness as a biocontrol agent for grass weeds, crowsfoot, barnyard, or others. Western Fiji is relatively dry and there are extensive grasslands. Whether or not these grass species will be colonised by the beetle is unknown, but should be monitored.

NATURAL ENEMIES

Nothing is known about the natural enemies of the *Oulema* species found on wild grasses in Fiji. Elsewhere, parasitic wasps are known to reduce populations, and four have been introduced into North America from Europe for the control of *Oulema melanopus*. The level of parasitism is sufficient to keep populations of the beetle under control, avoiding the need for chemical control.

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Information from CABI *Oulema melanopus* (oat leaf beetle) (2017) Crop Protection Compendium. (www.cabi.org/cpc); and from Cereal leaf beetle. Wikipedia. (https://en.wikipedia.org/wiki/Cereal_leaf_beetle). Photos 1-4 Mani Mua, SPC, Sigatoka Research Station, Fiji.

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