



Department
for Environment
Food & Rural Affairs



Sri Lankan weevil

MYLLOCERUS

UNDECIMPUSTULATUS UNDATUS



Figure 1. Sri Lankan weevil, *Mylocherus undecimpustulatus undatus* adult © Gary R. McClellan

Background

The Sri Lankan weevil *Mylocherus undecimpustulatus undatus* Marshall (Coleoptera: Cucurlionidae), is a polyphagous plant pest native to Sri Lanka. It is also sometimes known as ‘Yellow-headed Ravenous Weevil’ or ‘Asian grey weevil’. It has spread into India and Pakistan where various subspecies of *M. undecimpustulatus* are reported to be among the most serious of all weevil pests in the region, attacking 20 different types of crop including cotton, vegetables, palms, and ornamentals. In the Americas, it was first detected in 2000 (possibly 1995) on *Citrus* sp. in Florida, USA, and spread rapidly through the county (Thomas, 2005).

It was first detected in the Caribbean in one of the UK Overseas Territories (UKOT) in 2016. It is not known how it was introduced to the territory but it may have been transported with turf grass and ornamentals imported from south Florida for landscaping. Sri Lankan weevil poses an economic and environmental plant health risk to all the UKOTs in the Caribbean.

Geographical Distribution

Sri Lankan weevil is native to Sri Lanka and has spread through the Indian subcontinent and been introduced to North America and the Caribbean.

Asia: India, Pakistan; Sri Lanka.

North America: USA (Florida).

Caribbean: UKOT.

Host Plants

Sri Lankan weevil adults are polyphagous feeding on more than 150 plant species including native, ornamental, vegetable and fruit species. They appear to exhibit a preference for Fabaceae. There are several other host plants recorded from the Indian subcontinent which have not been included in the list below because of some taxonomic confusion with the *Myllocerus* species.

Anacardiaceae: *Anacardium occidentale*; *Cupaniopsis anacardiodes*; *Mangifera indica*; *Schinus terebinthifolius*

Aquifoliaceae: *Ilex cassine*

Arecaceae: *Caryota mitis*; *Cocos nucifera*; *Dypsis lutescens*; *Phoenix roebellenii*; *Veitchia* sp.

Asteraceae: *Ambrosia artemisiifolia*

Bombacaceae: *Bombax ceiba*; *Pachira aquatica*

Calophyllaceae: *Mammea sapota*

Chenopodiaceae: *Spinacia oleracea*

Chrysobalanaceae: *Chrysobalanus icaco*

Combretaceae: *Bucida buceras*; *Conocarpus erectus*; *Terminalia catappa*

Compositae: *Baccharis halimifolia*

Cupressaceae: *Platycladus orientalis*

Elaeocarpaceae: *Muntingia calabura*

Euphorbiaceae: *Acalypha wilkesiana*

Fabaceae: *Acacia auriculiformis*; *Albizia lebbek*; *Bauhinia x blakeana*; *Bauhinia* sp.; *Calliandra emarginata*; *Calliandra haematocephala*; *Erythrina* sp.; *Lysiloma latisiliquum*; *Mucuna pruriens*; *Pithecellobium unguis-cati*; *Pongamia pinnata*; *Psophocarpus tetragonolobus*; *Senna surattensis*

Fagaceae: *Quercus laurifolia*; *Quercus virginiana*

Lythraceae: *Lagerstroemia indica*

Malvaceae: *Brachychiton acerifolius*; *Gossypium hirsutum*; *Hibiscus rosa-sinensis*; *Hibiscus tiliaceus*; *Malvaviscus penduliflorus*

Meliaceae: *Swietenia mahagoni*

Melastomataceae: *Tetrazygia bicolor*.

Moraceae: *Ficus aurea*; *Ficus carica*; *Ficus* sp.; *Morus alba*

Muntingiaceae: *Muntingia calabura*

Myrtaceae: *Callistemon* sp.; *Eugenia uniflora*; *Myrciaria cauliflora*; *Syzygium cuminii*; *Syzygium paniculatum*; *Terminalia catappa*

Nyctaginaceae: *Guapira discolor*

Oxalidaceae: *Averrhoa carambola*

Passifloraceae: *Passiflora* sp.

Phytolaccaceae: *Rivina humilis*

Plumbaginaceae: *Plumbago auriculata*

Polygonaceae: *Coccoloba diversifolia*; *Coccoloba uvifera*

Rhamnaceae: *Kragiodendron ferreum*

Rosaceae: *Eriobotrya japonica*; *Prunus persica*

Rubiaceae: *Ixora* sp.; *Spermacoce verticillata*

Rutaceae: *Citrus x paradise*; *Citrus sinensis*; *Citrus* spp.; *Murraya paniculata*; *X citrafortunella microcarpa*

Sapotaceae: *Pouteria sapota*

Sapindaceae: *Acer rubrum*; *Blighia sapida*; *Chrysophyllum oliviforme*; *Dimocarpus longan*; *Litchi chinensis*; *Melicoccus bijugatus*

Solanaceae: *Capsicum* spp.; *Solanum melongena*

Ulmaceae: *Celtis laevigata*; *Trema micranthum*

Verbenaceae: *Duranta erecta*; *Lantana camara*

Vitaceae: *Parthenocissus quinquefolia*; *Tetrastigma* sp.; *Vitis rotundifolia*

There is relatively little information available on the larval host plants but adult beetles have been caught in Florida emerging from the soil beneath mango, lychee, longan and mamey sapote trees. In the laboratory larvae have been successfully reared on pepper and eggplant (listed above) and carrot (*Daucus carota*, Apiaceae) and sweet potato (*Ipomoea batatas*, Convolvulaceae) (not listed above).

Description

Adult Sri Lankan weevils are mostly white with dark-mottling on the wing cases (Figs 1 and 8) and a pale yellowish head (Figs 1, 6 and 7). They vary in length from 6.0 to 8.5 mm, with the females being larger than the males. Diagnostic characters include the toothed femora (front and middle femora are bidentate (Fig. 2) and hind femora tridentate (Fig. 3)), humeri (shoulders on the anterior edge of the wing cases) are broader than the prothorax (Fig. 4) and strongly angled (Fig. 5).

There are 8 described and several undescribed whitish weevils in the Caribbean in the genus *Atripus* which could be confused with Sri Lankan weevil. The Little leaf notcher, *A. floridanus* Horn, is probably the most similar in appearance but can be distinguished by the femora which lack teeth, the humeri are not angled, and the elytra are greyish to white, with smaller black marks formed by perforations on the elytra. Neal (2013) and O'Brien, Haseeb & Thomas (2006) provide detailed descriptions with excellent illustrations to aid identification.

The eggs (Fig. 8) are ovoid, white or cream-colored at first, gradually turning brown when they are close to hatching, and less than 0.5 mm in length. They are usually laid in clusters of 3-5. The larvae (Fig. 8) are beige-white with a reddish brown head, legless, C-shaped and up to 4 mm long. The pupae are cream coloured and darken with maturity.



Figure 2. Adult Sri Lankan weevil foreleg showing teeth on the femur © C. Malumphy



Figure 3. Adult Sri Lankan weevil hind leg showing teeth on the femur © C. Malumphy



Figure 4. Adult Sri Lankan weevil showing elytra are wider than thorax © C. Malumphy



Figure 5. Adult Sri Lankan weevil with angled humeri © C. Malumphy



Figure 6. Adult Sri Lankan weevil profile showing yellow head © C. Malumphy



Figure 7. Adult Sri Lankan weevil dorsal view showing yellow head © C. Malumphy



Figure 8. Life cycle of the Sri Lankan weevil: eggs, larva, pupa, and adult life stages.
© Holly Glenn, University of Florida.

Biology

Sri Lankan weevils are sexually reproductive and each female may lay up to 360 eggs over 24 days directly on organic material at the soil surface. The first instar larvae emerge after 3-5 days. There are four larval instars which burrow into the soil and feed on plant roots for approximately one to

two months. The larvae pupate in the soil for approximately one week. In the laboratory, the life cycle is completed in less than two months so there can be several generations each year if the climate is suitable.

Dispersal and Detection

Adults may crawl short distances over the host plant or fly to locate a new host. Long distance dispersal is likely to be due to anthropogenic activities, for example, larvae and pupae may be moved in plant trade in the soil of potted plants and the adults may hitch-hike with host plants and non-host materials.

Adults are active during the day and relatively conspicuous (Figs 1 and 10) but if they detect your presence they feign death and drop to the ground. The first visible evidence of the weevil's presence is usually the characteristic feeding damage to the foliage or flowers (Figs 9-10). The adult beetles chew inwards from the leaf margins causing leaf notching (other weevils cause similar damage). The damage is most noticeable when plants are producing new foliage and high populations of the weevil may cause almost complete defoliation. Intense feeding may cause plant decline or stunting, or even mortality of young seedlings. With healthy plants, however, the feeding damage is likely to be cosmetic and the plants will recover. The larvae feed on the roots and are often overlooked until the host plant is showing signs of wilting and poor growth.



Figure 9. Adult Sri Lankan weevil feeding damage on *Terminalia catappa*. © Susan Halbert, FDACS - Division of Plant Industry.



Figure 10. Sri Lankan weevil adults on *Bauhinia blakeana* © Anita Neal, University of Florida

Economic Impact

Leaf-feeding adults damage the foliage of ornamental plants, fruit trees, and vegetables, whereas the larvae injure root systems. Due to its feeding habits, the Sri Lankan weevil could negatively affect subtropical and tropical fruit, ornamental, and vegetable industries. The potential economic impact to the horticulture industry in nurseries, landscape services, and horticultural retailers in Florida has been estimated to reach billions of dollars. Botanical gardens have reported damage and require control measures. The weevil could also have an environmental impact due to its adaptability to new hosts although there is insufficient information to assess this risk.

Advisory Information

Traditional management methods such as the use of pesticides provide only limited control of this pest. Chemical control of the adults is difficult because of their ability to fly, hide, or feign death and drop to the ground. Chemical control of the eggs, larvae, and pupae is more difficult due to their location on or in the soil. Before using any pesticide the appropriate government body or plant protection service needs to be contacted to check the current regulation.

Adult weevils can be removed from plants by vigorously shaking a branch over an open, inverted umbrella or a tray. The collected weevils can then be placed into a container of soapy water. Disking the ground in orchards may help suppress the numbers of larvae and pupae.

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Date: 31st January 2017. Version 1.

Acknowledgments: This datasheet was commissioned by the GB Non-Native Species Secretariat (www.nonnativespecies.org) and funded by Department of Environment, Food and Rural Affairs.