



Pacific Pests, Pathogens & Weeds - Fact Sheets

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Noni shield-bearer moth (431)



Photo 1. Numerous mines in noni leaf caused by *Antispila* species.



Photo 2. Close-up of mines on noni containing larvae of *Antispila* species. Note oval missing areas of leaf cut by larvae before falling out on silken threads to pupate on bark or leaves on soil.



Photo 3. Single mine of *Antispila* species on noni. Note, the expansion of the mine to a blotch.

Common Name

Noni shield-bearer moth. This fact sheet is a draft awaiting identification of the moth. Noni, *Morinda citrifolia*, is a fruit-bearing tree in the coffee family, Rubiaceae, used as a traditional medicine.

Scientific Name

Possibly, *Antispila* species. A moth in the Heliozelidae.

Distribution

Widespread. South Asia (India), East Asia (China, Japan), Africa (Madagascar), North and South America, Europe, Oceania, It is reorded from Australia, and Tonga.

Hosts

Noni; no other host has been recorded for this moth in Tonga.

Symptoms & Life Cycle

The larvae of the moth make extensive mines in the leaves of noni trees (Photo 1). Like other shield-bearer moths, it is likely that eggs are laid into the underside of the leaves, and the larvae eat out (mine) the tissue between the upper and lower epidermis. The mines are at first curled; later, they expand to form blotches (Photos 2&3).

The legless larvae with dark heads are clearly seen within the mines, either one or two being present (Photo 2). When mature, the larvae cut distinctive shield-shaped cases from the leaf, and drop down on a silken thread attaching the case to bark, a leaf or some other object, to pupate, leaving behind a characteristic pattern of scattered holes, approximately 6 mm diameter. The adult is small, metallic, day-flying, with a shiny smooth head. There are incomplete white bands across the wings, broadening to the edges, contrasted against a dark-grey background. The hind wings are heavily fringed.

Impact

Leaves of noni trees are heavily infested with leaf mines, and develop numerous holes. Leaves are so damaged that they likely drop early, but whether the damage impacts on yield of fruit is unknown.

Detection & inspection

Look for the characteristic mines and holes in the leaves.

Management

There is insufficient evidence that the damage by the leafminer is sufficient to warrant control measures.

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Information from Charley Eiseman (2019) *Leafminer of North America* (1st Edition). (<http://charleyeiseman.com/leafminers/>); and Antispila. Wikipedia. (<https://en.wikipedia.org/wiki/Antispila>); and from Miller L *et al.* (2018) A preliminary molecular phylogeny of shield-bearing moths (Lepidoptera: Adeltoidea: Heliozelidae) highlights rich undescribed diversity. *Molecular Phylogenetics and Evolution* 120:129-143.

Produced with support from the Australian Centre for International Agricultural Research under project HORT/2016/185: *Responding to emerging pest and disease threats to horticulture in the Pacific islands*, implemented by the University of Queensland and the Secretariat of the Pacific Community.

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