

## Sweetpotato leafminer (341)

### Common Name

Sweetpotato leaf miner, morning glory leafminer

### Scientific Name

*Bedellia somnulentella*; previously known as *Bedellia ipomoeae*.

### Distribution

Asia, Africa, North America, Europe, Oceania. It is present in Australia, Fiji<sup>1</sup>, New Zealand, and Papua New Guinea.

### Hosts

Sweet potato, *kangkong* (*Ipomoea aquatica*), and *bindweeds* (*Calystegia* and *Convolvulus* species).

### Symptoms & Life Cycle

The damage is done by the larvae. Mines are at first serpentine (snake-like), and filled with frass; they become yellow-brown and later grow in width, forming blotches (Photo 1). At this stage, the larvae protrude from the blotch to defaecate. Later still, holes are produced in the leaves as the blotches are destroyed.

The eggs are laid on the leaves, usually on the underside near the midrib, veins or base of the leaf blade. The larvae are yellowish with pink spots along the back, developing into red rounded projections on all segments. When mature, the larvae are 5.5 mm long. They exit the mines and make a network of silk threads on the underside of the leaf. When not feeding, they move around inside the threads, above the leaf surface. Frass often catches in the web of threads. The larvae pupate there.

Adults are greyish brown, 3.5-4 mm long, with a tuft of light yellow to brown hairs on the head, and wingspan of 8-10 mm (Photos 2&3).

### Impact

Usually, of minor importance. In Fiji, said to be less common than the other sweetpotato leafminer, *Acrocercops prosacta*. Previously, severe outbreaks of *Bedellia somnulentella* occurred towards the end of the sweetpotato season, at the end of the year, in fields sprayed with organochloride pesticides, perhaps because they destroyed ant predators or parasitoids. In the Philippines, serious outbreaks, associated with drought, are said to reduce storage root yields.

### Detection & inspection

Look for the characteristic narrow, snake-like, silvery mines in the leaves, later becoming blotches. Look for the two rows of round projections along the back of mature larvae, as well as their silken threads on the lower leaf surface.

### Management

#### NATURAL ENEMIES

The leafminer is usually under control by parasitoids, of which *Apanteles* species are the most important.

#### CHEMICAL CONTROL

In Fiji, the use of pesticides against this (and other) leafminers is not recommended as the natural enemies are more sensitive to the chemicals than their hosts. Pesticides will make the situation worse, and should be avoided.



Photo 1. Larval mines of the sweetpotato leafminer, *Bedellia somnulentella*.



Photo 2. Adult sweetpotato leafminer, *Bedellia somnulentella*.



Photo 3. Adult sweetpotato leafminer, *Bedellia somnulentella*, showing the fringed fore and hindwings.

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<sup>1</sup>Information from Swaine G (1971) *Agricultural Zoology in Fiji*. Her Majesty's Stationery Office. London; and Sweet potato leafminer (*Bedellia somnulentella*) Plantwise Knowledge Bank. (<http://www.plantwise.org/KnowledgeBank/Datasheet.aspx?dsid=8761>); and O'Sullivan J et al. Sweetpotato DiagNotes: A diagnostic key and information tool for sweetpotato problems. (<http://keys.lucidcentral.org/keys/sweetpotato/key/Sweetpotato%20Diagnoses/Media/Html/FrontPage/FrontPage.htm>); and from Discover Life *Bedellia somnulentella* (Zeller 1847 Morning glory leafminer. (<http://www.discoverlife.org/mp/20q?search=Bedellia+somnulentella>)). Photo 1 Ben Smart *Bedellia somnulentella* UK Moths. (<http://www.ukmoths.org.uk/species/bedellia-somnulentella/mine/>). Photo 2 Mark Dreiling, Bugwood.org. Photo 3 *Bedellia somnulentella* Wikipedia. ([https://en.wikipedia.org/wiki/Bedellia\\_somnulentella](https://en.wikipedia.org/wiki/Bedellia_somnulentella)).

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