

Reporting and testing for serpentine leafminer

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Serpentine Leafminer

Serpentine leafminer (*Liriomyza huidobrensis*) has been detected on vegetable crops in the Sydney Basin in late October 2020. It had not been detected previously in Australia and is considered an Emergency Plant Pest in Australia. Serpentine leafminer (SLM) is one of several pest leafminer species around the world inflicting significant impacts on horticultural industries.

SLM is a small black fly that feeds and lays eggs on plant leaves. When the larvae hatch they “mine” through the inside of the leaf leaving behind tell-tale serpentine tunnels which are easily visible to the naked eye. SLM pupates on the underside of the leaf (small brown cocoons 1-3mm long) but they can be easily knocked to the ground or fall into crevices of leafy vegetables.

The host range of SLM is extensive including vegetables, ornamentals and many weed species. Effective control of this pest is challenging.

General Biosecurity Duty

Part 3 of the Biosecurity Act (2015) describes how people have a General Biosecurity Duty to prevent, eliminate or minimise the risk of SLM in NSW.



Figure 1 Damage from leafmining and oviposition

People dealing with SLM host plants which have visible signs of leafminer damage must act to ensure they are meeting this General Biosecurity Duty.

Put simply, you must always act to prevent further spread of SLM in NSW, eliminate heavy infestations of the pest and minimise the impacts of SLM in plant production systems.

This duty may be met by any number of means that are considered Best Management Practice for SLM including by not selling heavily infested SLM host plants, through the use of integrated pest management to minimise the impact of SLM in the production system, adhering to industry standards such as BiosecureHACCP or market access

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arrangements like ICA29, or treating host plants with approved insecticides, fumigation or irradiation to prevent spread in host produce.

The General Biosecurity Duty for SLM is a legislative mechanism due to the risk of an adverse effect on the economy and the community that arises from the presence, spread or increase of serpentine leafminer within New South Wales.

Sampling

To better understand the full impact of SLM across the state, NSW DPI encourages reporting or submission of samples of suspect leafminer activity that is:

- outside known areas of the infestation (i.e. beyond the Sydney Basin)
- when damage is significant and observed across many different host plant species.

The serpentine leafminer diagnostic service is free.

Submission forms need to be included with samples so results can be reported back. Please note there are two different forms depending on method of testing. Submission forms can be found on the NSW DPI website:

<https://www.dpi.nsw.gov.au/about-us/services/laboratory-services/sample-submission>

Courier or express post samples early in the week, avoid sending on Thursday or Friday so samples don't spend the weekend in transit. Samples deteriorate quickly in the heat.

You may also report suspected serpentine leafminer by:

- Calling the Exotic Plant Pest Hotline on 1800 084 881

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

If you suspect SLM activity on your property there are two options available for sending in samples for diagnostic testing.



Figure 2 Installed sticky trap

Submitting a sticky trap

If you suspect an exotic leafminer infestation and you can submit a sticky trap for identification:

1. Place a yellow sticky trap in the crop/garden so that the bottom of the trap is level with the top of the plants
2. Leave it out for 5 days
3. Take a plastic A4 sleeve and in black permanent marker write the trap collection date, property address and a contact name and phone number on the front
4. With scissors cut open the sealed outer edges of the plastic sleeve so that it opens like a book
5. Place the sticky trap carefully on one side of the plastic sleeve and close the

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plastic sleeve gently over the trap so you don't squash any insects on the trap

6. Place inside a padded envelope with a completed [Insect Identification Request form](#)
7. Post to:

Attn: SLM
Biosecurity Collections
Orange Agricultural Institute
1447 Forest Rd, Orange NSW 2800

Submitting a leaf sample

If you observe suspect leafminer damage across a range of different host plants and don't have a sticky trap then you can submit a leaf sample for testing:

1. Collect small leaves or parts of large leaves that have obvious, recent leafminer tunnels in them
2. If you find small brown pupae (1-2mm long) on the underside of leaves collect these as well
3. Place the samples in a zip lock sandwich bag. Press the air out and securely zip the lock fully closed
4. Write on the front of the bag in permanent black marker the name of the host plant, date and location address collected and the name of the person who collected it
5. Collect each host plant in a different zip lock bag
6. Place all of the sample bags inside one larger zip lock bag (to ensure all insects are contained) and place inside a padded envelope with a completed [Plant Health Diagnostic Service Specimen Advice form](#)
7. Post to:

Attn: SLM
Plant Health Diagnostic Service
EMAI, Woodbridge Rd
Menangle NSW 2568

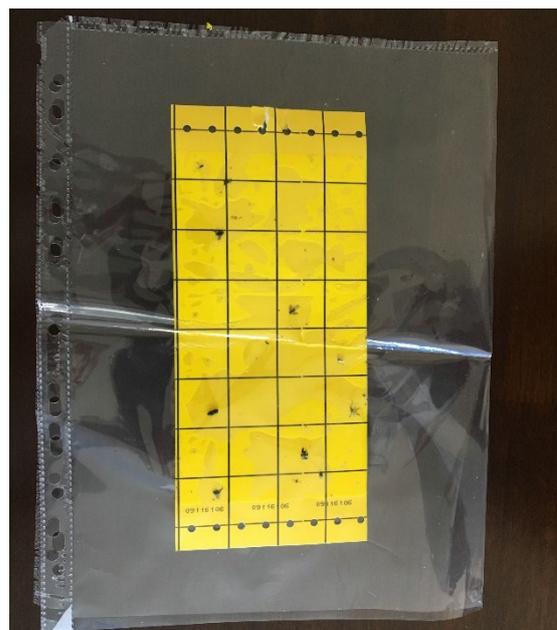


Figure 3 Sticky trap in a plastic sleeve



Figure 4 Leaf samples in a labelled ziplock bag

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