

KEEPING EXOTIC PESTS OUT OF YOUR GARDEN:

EXOTIC LEAFMINER FLIES IN THE
NORTHERN PENINSULA AREA



**Hort
Innovation**

Why look for exotic leafminer flies?

Exotic leafminer flies are small flies that pose a threat to many vegetable and horticultural crops grown in Australia.

The four species that can cause the most damage are *Liriomyza sativae*, *L. trifolii*, *L. huidobrensis*, and *Phytomyza horticola*. Of these species, only *Liriomyza sativae*, the vegetable leafminer (VLM) is found throughout the Torres Strait and NPA. The other three species are not found in Australia. It is important to keep these other exotic leafminer out.

Within the NPA, VLM has been restricted to Seisia since 2015, but has potentially spread to Bamaga and Umagico as of March 2019. Within Seisia, VLM is a pest of gardens, but does not reach extreme numbers, thanks to limited chemical use and a healthy community of predators (small parasitoid wasps).

What should I look for?

Adult exotic leafminer are very small (1 - 2 mm), black and yellow flies that are difficult to see by eye. Surveillance should focus on the damage they create on plants. They are most damaging as larvae (the immature form of the fly).

- Larvae tunnel through leaves, creating thick white trails, called 'leaf mines' (A).
- Adults feed and inject eggs, creating a stippled appearance on leaves (B).
- Fruits are unaffected, with the exception of bean pods which may show mines (C).

Heavy leaf mining can reduce plant growth or even kill young plants. However leaf mines do not make leaves or fruit unsafe to eat.

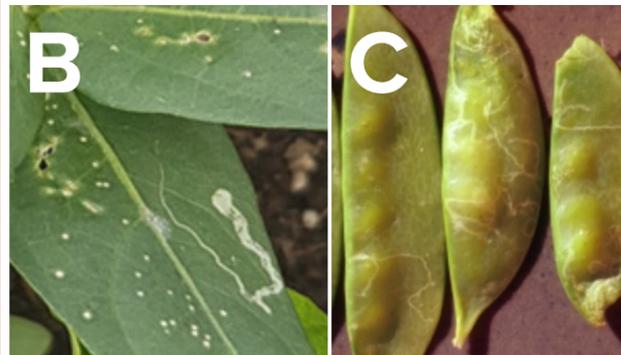


Yellow larvae may be visible at the thicker end of a leafmine

Symptoms in leaves

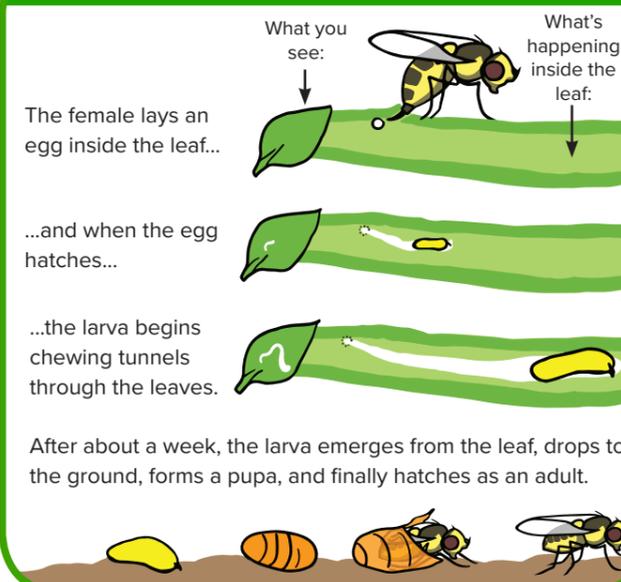


Moderate damage on melons (left) and heavy damage on ornamental flowers (right)



Stippling and mining damage on beans (left) and mining in bean pods (right)

How leaf mines are formed:



If you see leaf mines on the leaves of these veggies outside of Seisia...



You are likely seeing signs of the vegetable leafminer. **If you find leaf mines on these veggies outside of Seisia, this is a sign the flies have spread and should be reported.**

If you are seeing leaf mines within Seisia, this is not unusual, but if you see heavier than usual damage, this may be a sign that something has changed and should be reported.

...or if you see leaf mines on the leaves of these veggies anywhere...



While vegetable leafminer may attack these plants, they are not highly favoured by VLM in the NPA. However, they are favoured by other exotic leafminer. So damage in these plants may be signs of a new exotic leafminer, and should be reported.

...collect a sample and report the damage!

Snap

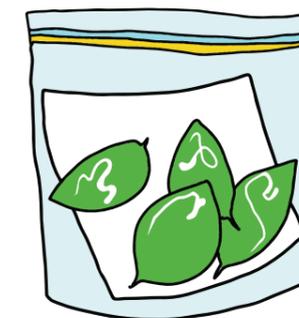
a photo of the damage

Collect

damaged leaves into a sealed plastic bag, label, and store in a cool, dark place

Call

The Exotic Plant Pest Hotline (1800 084 881)



Where and when do I look?

Exotic leafminer are expected to be most active from May to October. Exotic leafminer will feed on the leaves of many different vegetable plants, as well as some weeds. Different species of leafminer flies prefer different plants.

The vegetable leafminer, which is currently present in Seisia, will attack tomato, broccoli, capsicum, chillis, cucumber, zucchini, pumpkin, green beans, snake beans, passionfruit, lettuce, spinach, and onions, as well as ornamental flowers including marigolds and petunias. They will also attack several weeds and ornamental plants including siratro, castor bean, *Crotalaria*, and yellow bells.

Other exotic leafminer, not yet present in the NPA, will also attack these same vegetables, but have different favourites. So if you see unusual amounts of damage on any of your garden veggies, you should report this to the Exotic Plant Pest Hotline.

How do I look for exotic leafminer?

Check for leafminer in your garden by:

1. **Scan:** Scan the leaves of your garden vegetables for white leaf mines or stippling.
 - Try to spend about a minute checking each square metre of your garden.
2. **Snap:** Take a photo of the damaged plant, and if you can, record a GPS point.
3. **Collect:** Take a sample of the damage:
 - Collect as many affected leaves as you can into a large plastic freezer bag, along with a piece of paper towel. Seal the bag, partially inflated, and label the bag using a smudge-proof permanent marking pen with the following information:
 - Your name; contact number; date; address, town, postcode; plant type
 - Place the labeled bag in a dark cool place or a refrigerator.
4. **Call:** Immediately report the suspicious damage to **The Exotic Plant Pest Hotline (1800 084 881)** for further instructions.

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Can traps be used?

Yellow sticky traps, available from garden supply stores, can attract adult exotic leafminers, but these traps are not expected to be as effective as visual surveillance for early detection. If you find suspicious damage, you can hang the yellow sticky traps nearby. Do not leave the traps out for longer than two weeks. After collecting the traps, store folded, sticky side inwards, in a sealed plastic bag in the refrigerator (not the freezer).

How to report

If you think you have detected an exotic leafminer, preserve a specimen and phone **The Exotic Plant Pest Hotline on 1800 084 881**. This will put you in touch with biosecurity officers in your area.

**IF YOU SEE ANYTHING UNUSUAL,
CALL THE EXOTIC PLANT PEST HOTLINE**

1800 084 881

Other information

What can be confused with exotic leafminer?

Several native leafminer fly species in the NPA can create leaf mines that look extremely similar to the exotic leafminer. This includes:

- *Ophiomyia* flies on Alyse clover weeds (A)
- *Tropicomyia* flies on passionfruit/native trees (B)
- *Ophiomyia* flies on beach Naupaka (C)

If you are not sure if what you have found is caused by an exotic or a native leafminer, always report it to the Exotic Plant Pest Hotline on 1800 084 881, to be safe!



Left: Yellow sticky traps can attract exotic leafminer flies, and can be placed near suspicious damage to try and catch an adult.
Right: Close up of an adult vegetable leafminer on a sticky trap.

Not exotic leafminer



If you have any questions about vegetable leafminer or other exotic leafminer flies, please get in touch with:

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**Hort
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