

American serpentine leafminer

Lyriomyza trifolii



THE
TERRITORY

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Background

The American serpentine leafminer (ASL) has many different hosts, including cucumber, beans, lettuce, celery, tomatoes, chilli and many other vegetables and ornamentals.

Overseas, the spread of ASL is thought to have occurred through trade in cut flowers. In tropical and sub-tropical areas, ASL is primarily a pest of vegetables. This leafminer poses a serious threat to the Northern Territory's horticulture industries.

Distribution

ASL is native to North America, South America and the Caribbean, but now occurs throughout the world in Africa, Asia, Europe, Oceania, and was recently detected in Torres Strait, Western Australia and the Northern Territory.

Key contact

Contacts are provided to assist you to connect with key staff who work in the Biosecurity and Animal Welfare team.

DITT Entomology
Berrimah Agricultural Laboratories
T: 08 8999 2258
E: insectinfo@nt.gov.au

 Join the Biosecurity Facebook Group @biosecNT
industry.nt.gov.au

Appearance and life cycle

Females insert eggs into the surface of mature leaves below the epidermis in the middle of the plant. They can lay up to 400 eggs in a lifetime. Eggs are 1mm in length, oval and clear when first laid, becoming creamy white as they mature.

When first hatched, the legless larva is colourless, gradually turning yellow as it matures. The larva goes through three instars (growth stages) and grows up to 2mm in length, followed by a pupal stage. When ready to pupate, the larva cuts a slit into the leaf and drops to the soil. The pupa becomes brown as it matures and is up to 2.3mm in length.

Adult males and females are similar in appearance and approximately 2mm in length. The thorax and abdomen are black with a bright yellow scutellum (a spot in the middle of the back). The face, third antennal segment, underside of the body and legs are bright yellow. The eyes are reddish and the wings are clear.

ASL has a short life cycle that may be completed in 14 to 15 days at 28°C, or about 12 days at 35°C. Host type may also determine length of life cycle. At temperatures above 30°C, the larvae experience high mortality.

Damage to the host plant

Major damage is seen as silvery squiggly line patterns on the leaf surface where the larva mines under the epidermis of the leaf, destroying the inner leaf tissue. The mines start to become visible about 3 or 4 days after egg laying and get larger as the larva matures. The mines take on a blotchy appearance as the larva gets to the end of the mine. The frass excreted by this leafminer is distinctive and is deposited on either side of the mine in black strips, which become more grainy near the end of the mine.

Egg laying can also cause damage particularly to the leaf tips and leaf margins, which become speckled. High populations of ASL reduce photosynthesis, and cause leaf drop and wilting in seedlings. The loss of leaves on the plant can cause sunburn on fruit and reduced yield.

The damage also makes the plant more susceptible to introduction of bacterial and fungal diseases.

Adult



Photo: Central Science Laboratory, Harpenden, British Crown, Bugwood.org

Serpentine mine in chrysanthemum leaf



Photo: Central Science Laboratory, Harpenden, British Crown, Bugwood.org

Production nurseries and growers should always check their crops regularly for signs of plant pests and disease. If you suspect an American serpentine leafminer infestation, report it to the department of primary industries or agriculture in your state or territory.

Good on-farm biosecurity practices are vital to preventing incursions of plants the pests and diseases.

The farmbiosecurity.com.au website has helpful information that can be tailored to your property.

Movement of people, vehicle and machinery from, and to, affected farms must be controlled to ensure that infected soil or plant debris is not moved off-farm.

All machinery and equipment should be thoroughly cleaned with a pressure cleaner prior to leaving the affected farm. The clean-down procedure should be carried out on a hard surface, preferably a designated wash-down area, to avoid mud being re-collected from the affected site onto the machine.

If you see any damage that you suspect to be American serpentine leafminer, please call the Exotic Plant Pest Hotline on 1800 084 881.

Specimens for identification can be submitted to DITT Entomology, at Berrimah Agricultural Laboratories, Berrimah Farm. Alternatively, call 08 8999 2258 or email insectinfo@nt.gov.au

For more information, go to industry.nt.gov.au

Department of Industry, Tourism and Trade
T: 08 8999 2006



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