

Controlling leafminers on ornamentals



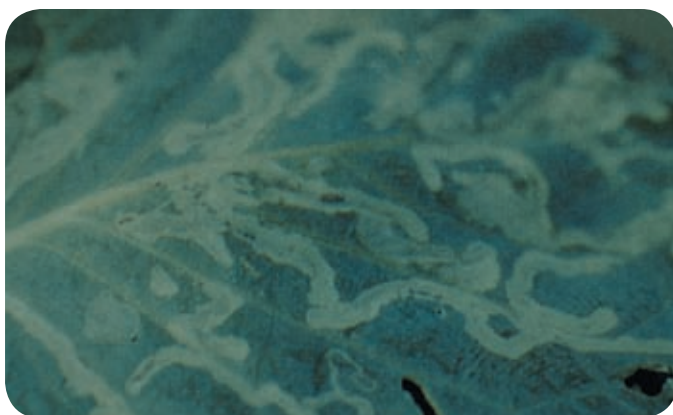
Leafminer biology

- Leafminers are a common US horticultural pest.
- Pea leafminer (*Liriomyza huidobrensis*) and serpentine leafminer (*Liriomyza trifolii*) are the most pervasive species that feed on horticultural crops; lepidopterous leafminers are often found in nurseries.
- They belong to the order of true flies—Diptera.
- Adults are of similar size to fruit flies.
- Larvae develop through three instars (stages).

Damage to ornamentals

Leafminers cause crop damage by:

- Puncturing leaves with ovipositor
- Feeding larvae leaving an opaque “mine” or “trail”
- Depositing eggs under the leaf surface



Detection and control measures

Early detection and treatment are important to controlling leafminers.

Detection

- Inspect new plants for mines. (Pea leafminer activity occurs on the undersides of leaves, serpentine leafminers operate on the upper surface of leaves).
- Monitor adult leafminers with yellow sticky cards.

Control

- Keep area free of weeds since they can serve as alternate leafminer hosts.
- Use screens to prevent adult leafminers from migrating into greenhouses.
- Discard infested plants.
- Fumigate or steam planting beds prior to planting to eliminate leafminer pupae or delay planting for two weeks to allow adults to emerge and die.
- At least monthly, rotate insecticides with various modes of action to manage resistance—do not apply the same insecticide to successive generations.
- Release *Diglyphus* spp., *Dacnusa sibirica*, and other beneficial leafminer parasitoids prior to population buildup (requires leafminer larvae).
- Add lime under benches to reduce adult emergence from pupae that fall into these areas.

Sample Greenhouse Leafminer Program

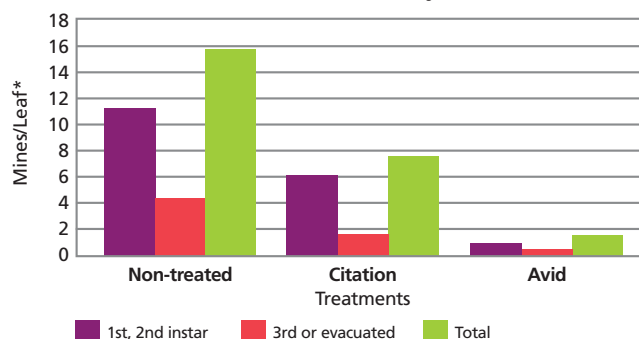
Product	Rate/100 gal**	Application
Avid®	8 oz	1
Avid	8 oz	2
Avid*	8 oz	3
Beneficial release		
Conserve™	22 oz	4
Citation®	2.66 oz	5
Citation	2.66 oz	6
Citation	2.66 oz	7
Beneficial release		
Conserve	22 oz	8

Apply weekly. Start over at first application (if needed).

*Wait 7–10 days after Avid application before releasing beneficials.

**Review labels for recommended rates and application frequency.

Leafminer Control on Chrysanthemum



*Number of mines per leaf after third weekly treatment.

Citation applied at 2.66 oz and Avid at 8.0 oz per 100 gallons.

Trial conducted by J. Bethke, UCR, Riverside, CA

● Effective control with Avid®, Citation®, and Scimitar® GC

Avid® miticide/insecticide

- Translaminar penetration allows Avid to deposit an active ingredient reservoir inside the plant cuticle.
- Unique chemistry and MOA make Avid ideal for rotation.
- It is rainfast within hours of application.
- It has little odor and leaves no unsightly residue.
- It is formulated for easy application with standard equipment.



Citation® insect growth regulator

- Economical, effective control of leafminers.
- Indoor and outdoor use.
- Compatible in integrated pest management programs.
- Does not harm beneficial insects.



Scimitar® GC

- **Scimitar GC is a Restricted Use Pesticide**
- Fast-acting, long-lasting control of lepidopterous leafminers.
- Water-based capsule suspension.
- Pyrethroid formulation that can be used on a wide range of plants.



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Contact your Syngenta territory manager or call 1-866-SYNGENTA (796-4368) to contact the Syngenta Customer Center and learn more about leafminer control.

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