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 underside 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 parasites 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

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate/100 gal**</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avid*</td>
<td>8 oz</td>
<td>1</td>
</tr>
<tr>
<td>Avid</td>
<td>8 oz</td>
<td>2</td>
</tr>
<tr>
<td>Avid*</td>
<td>8 oz</td>
<td>3</td>
</tr>
</tbody>
</table>

**Beneficial release**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate/100 gal**</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conserve*</td>
<td>22 oz</td>
<td>4</td>
</tr>
<tr>
<td>Citation*</td>
<td>2.66 oz</td>
<td>5</td>
</tr>
<tr>
<td>Citation</td>
<td>2.66 oz</td>
<td>6</td>
</tr>
<tr>
<td>Citation</td>
<td>2.66 oz</td>
<td>7</td>
</tr>
</tbody>
</table>

**Beneficial release**

<table>
<thead>
<tr>
<th>Product</th>
<th>Rate/100 gal**</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conserve</td>
<td>22 oz</td>
<td>8</td>
</tr>
</tbody>
</table>

*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**

- **Non-treated**
- **Citation Treatments**
- **Avid**

*Number of mines per leaf after third weekly treatment.
Citation applied at 2.66 oz and Avid at 8.0 oz per 100 gallons.

Trail 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.

Contact your Syngenta territory manager or call 1-866-SYNGENTA (796-4368) to contact the Syngenta Customer Center

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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.