**Liriomyza huidobrensis**

**Taxon**  
*Liriomyza huidobrensis* (Blanchard, 1926)  
**Family / Order / Class / Phylum**  
Agromyzidae / Diptera / Insecta / Arthropoda

**COMMON NAMES (English only)**  
Serpentine leaf miner  
Pea leaf miner  
South American leaf miner

**SYNONYMS**  
*Agromyza huidobrensis* (Blanchard, 1926)  
*Liriomyza cucumifoliae* (Blanchard, 1938)  
*Liriomyza langei* (Frick, 1951)  
*Liriomyza dianthi* (Frick, 1958)

**SHORT DESCRIPTION**  
Adult small, 1.3-2.3 mm long, compact-bodied fly, of greyish-black colour; larvae headless maggot up to 3.3 mm in length, yellow-orange at maturity. Larvae are leaf miners on a wide range of hosts, especially economically-important vegetables and ornamental plants in both glasshouses and outdoors. Recent molecular research found evidence for a cryptic species, *Liriomyza langei*, within the species complex known as *Liriomyza huidobrensis*. Both species are at present not distinguishable by external characters.

**BIOLOGY/ECOLOGY**

**Dispersal mechanisms**  
Adult flight range is limited. Long-range dispersal (eggs, larvae) with human-transported infested plant material, including cut flowers. The vase life of chrysanthemums is sufficient to allow completion of the life-cycle.

**Reproduction**  
Under laboratory conditions, a female lays about 100 - 130 eggs in total but as much as 250 eggs have been observed. Eggs are laid into the leaf tissue. Larvae tunnel within the leaf tissue forming characteristic mines, then cut a semi-circular opening in the tissue and drop to the soil to pupate. The life cycle could be as short as 14 days at 30°C or as long as 64 days at 14°C. Generations follow in quick succession as long as the growing conditions of the host-plant provide suitable food.

**Known predators/herbivores**  
Braconids (*Opius dissitus*), eulophids (*Hemiptarsenus, Pnigalio, Neochrysocharis, Asecodes*).

**Resistant stages (seeds, spores etc.)**

**HABITAT**

**Native (EUNIS code)**  
F5: semi-arid and subtropical habitats in pre-saharian Africa

**Habitat occupied in invaded range (EUNIS code)**  
I1: Arable land and market gardens, I2: Cultivated areas of gardens and parks; glasshouses.

**Habitat requirements**  
Optimal temperatures for feeding and egg laying range between 21°C and 32°C. Egg-laying is reduced at temperatures below 10°C. All stages are killed within a few weeks by cold storage at 0°C and above 40°C.
DISTRIBUTION

Native Range
South America

Known Introduced Range
Central America, most of Asia (China, Taiwan, India, Thailand, Singapore, Indonesia), Asia Minor, Africa (Kenya, Reunion, Mauritius, Seychelles); present outdoors in southern Europe (including Sicily and the Canary islands), but mainly a glasshouse pest in northern Europe.

Trend
In many European countries it was recorded in 1989. From the nineties onwards the species has been spreading with imported ornamentals.

MAP (European distribution)

Legend

<table>
<thead>
<tr>
<th>Known in country</th>
<th>Known in CGRS square</th>
<th>Known in sea</th>
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<tbody>
<tr>
<td>Eradicated</td>
<td>Eradicated</td>
<td>Extinct</td>
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INTRODUCTION PATHWAY
Passive transport with plant trade including vegetables, cut flowers and nursery stock

IMPACT

Ecosystem Impact
Unknown

Health and Social Impact

Economic Impact
A serious pest for the floriculture industry where leaf-miner damage directly affects the marketable portion or in vegetable crops where the leaves are sold as the edible part, i.e. spinach, beet greens, Asian greens, lettuce and leeks.

MANAGEMENT

Prevention
Sticky traps can be used to monitor adult flies. Crop rotation is an effective pest management tool as is avoiding varieties which are highly susceptible to leaf-miner infestations (e.g. some chrysanthemums) in greenhouses. There is little information about leaf-miner tolerance of vegetables in the field.
Mechanical
In field vegetables, cultivation of crop debris or removal of infected plant material is recommended.

Chemical
*Liriomyza huidobrensis* adults are resistant to conventional insecticides. At present, the only effective insecticides are translaminar insecticides (abamectin, cyromazine, neem and spinosad), which penetrate the leaves to affect the leaf-miner larvae.

Biological
Parasitoid wasps, e.g., *Diglyphus isaea* and *Dacnusa sibirica* are available for control in greenhouse crops. These parasites will not be effective for vegetables growing in the field. However there may be natural parasites present that can reduce the population.

REFERENCES


OTHER REFERENCES

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