



(Liriomyza huidobrensis) “ South American leaf miner”

General

- Hosts - potato, celery, chicory, rape, lettuce, broccoli, cauliflower, beetroot, artichoke, carnation pea, spinach, sweet lemon, cucumber, peas, green beans, onions, garlic, green peppers, tomato, chrysanthemum, carnation and 24 weed species.
- During the vegetative growth phase of the plant up to 90% of eggs and 60% of larvae are pushed out of the leaf due to the multiplying of plant cells. Therefore during this stage of plant growth only punctures made by the fly and some larvae damage on the older bottom leaves are visible. During and after flowering (± 6 weeks after emergence) vegetative growth decline and lead to a sharp increase in larvae damage.
- Yield losses of 50% and more can occur
- Damaged leaves are infection areas for fungal- and other plant diseases
- Tubers are not attacked by *Liriomyza huidobrensis*.
- It is difficult to break the life cycle of the fly because the pupae are not killed by chemical applications. The potential for new flies to hatch can therefore not be stopped.

Symptoms

- Punctures are made on leaves by the female fly.
- The larvae (2-3mm) feed on the leaves. The bigger larvae more frequently feed around the main artery of the leaf and sometimes enter the petiole. This lead to the leaves dying from the center outwards and sometimes a whole petiole can die.

Life cycle

- It takes ± 3 weeks for the completion of the life cycle during ideal conditions.
- Eggs are lain in some ($\pm 10\%$) of the punctures made by the female fly. Egg to larvae = 2-4 days. Larvae to pupae = 3-7 days. Pupae to fly = 7-14 days. The female flies live 1-2 months and can lie up to 700 eggs in the time but most eggs are lain in the first 4 days.
- Flies live on the plant sap excreted from the punctures on leaves.
- Larvae live on the tissue of the leaves between the leaf epidermis.
- Larvae change into pupae of which most fall to the ground.

Control

- Apply chemicals in 500-litre water per hectare to ensure that all leaves are covered properly.
- Apply Agrimec (abamectin) as soon as punctures made by the flies are observed. Apply 600ml Agrimec per hectare and mix it with 500ml Citrex oil (mineral oil) to protect the abamectin against breakdown by ultraviolet rays. Agrimec should be mixed with the mineral oil in concentrate form before mixing with water. Schedule the application early in the morning or late afternoon to minimise breakdown of the active ingredient before the plant takes it up. Allow enough time after the application of abamectin before the next irrigation is given. Abamectin can be applied up to three times in succession with 7-day intervals.
- If need be the abamectin applications can be followed by two or three applications of Patron (cyromazine) @ 300 grams per hectare.
- The abamectin and cyromazine applications should not be extended to after flowering (\pm 6 weeks after emergence). After flowering non-systemic chemicals should be used as systemic chemicals are not readily taken up after flowering due to less active vegetative growth.
- Suntap (cartap hydrochloride), Dede vap (dichlorvos), Vydate (oxamyl), Hunter (chlorphenapyr), Tracer, Steward (indocsacarb) and Selecron (profenofos) killed the larvae of *Liriomyza huidobrensis* in laboratory tests done on tomato plants. Some of the mentioned chemicals are not registered for the use against *L. huidobrensis* on potatoes and are therefore used at own risk.
- Use "soft" chemicals against the potato tuber moth, aphids and other insect pests when possible to prevent harm to the natural predators of *L. huidobrensis*. When using "soft" chemicals care should be taken not to allow aphids to become a problem in seed plantings.
- Healthy active growing plants will be less prone to damage by *L. huidobrensis* than plants under stress.
- Dede vap (dichlorvos) @ 500 ml/ha can be applied with cyromazine to control flies as well.

References:

- "Nuwe blaarmyner maak amok op aartappels, Diedrich Visser", Chips vol.14 no.3 Mei/Junie 2000, p34.
- "Nuwe plaag bedreig aartappels", Landbou Weekblad, 30 June 2000, no.1154.
- "Potato Diseases", NIVAA, Holland.
- "A Guide for the control of plant pests, 1999", National Department of Agriculture.

Please note that the information in this profile is given in good faith and is the provided to assist the grower in the management and cultivations of the crop. However, final responsibility for this rest with the grower and accordingly liability cannot be accepted for any loss, which may arise.