



MANAGEMENT OF LEAF MINER IN POTATO

KALRO/NAVCDP Factsheet No. 096



Potato crop free of leaf miner



Emerging larvae (maggots) tunnel between the upper and lower leaf surfaces



Leaf miner infested leaves

Description

Leaf miners are small, yellow and black flies approximately 1.5 - 2 mm in long. Potato leaf miners live for approximately 1 - 2 weeks and each adult can lay up to 400 eggs. Eggs hatch in about 3 days and the emerging larvae (maggots) tunnel between the upper and lower leaf surfaces. The cream-coloured to orange larvae are legless and are never found outside their tunnels within the leaves. The result is that mostly small and medium-sized tubers are produced. Reduction in yields of up to 70% has been reported.

Damage/ Identification

- A female leaf miner punctures several plant cells with her ovipositor and then sucks up the cell contents leaving empty cells visible as white dots in the leaves
- The female deposits eggs through the hole beneath the leaf epidermis
- The larvae that hatch from these eggs mine through the leaf
- The mines which are pale cream, often run alongside or in the veins but, they may also crisscross the leaf
- The larvae and the tunnels they make can be seen mainly on the underside of the leaf. The larvae pupate either on the leaf or in the soil.

Management

The following measures are recommended for the management of leaf miners in potato crops:

Monitoring

Check for presence of leaf miner damage and keep track of the population in order to take appropriate and timely action. This is particularly important when weather conditions become hot and dry. Scouting/inspection 1 - 2 times a week helps in determining which life stage (egg, crawler, pupae or adult) is present. The following approaches can be used:

- Use yellow sticky cards for quick plant inspections to determine if populations are increasing or decreasing.
- Use pest-infested indicator plants to monitor leaf miner populations.

Cultural practices

- Use certified seed
- Use yellow sticky cards to capture the adult flies and to monitor their population.

Practise field sanitation by removing infested foliage from plants or fallen plant residues on the ground

Bio-pesticides

Apply commercially formulated biopesticides such as the ones based on *Bacillus thuringiensis* (Bt) (e.g. Baciguard 16 WDG, Bio-T-Plus), Nucleopolyhedrovirus (NPV) (e.g. Helitec SC), *Metarhizium anisopliae* (e.g. Biomysis Mean 1.15% WP, Mazao Campaign OD) and neem (e.g. Ozonem 1% EC).

Use of synthetic pesticides

- Chemical spraying should target young adults before they can lay eggs on the leaves are noticed on the crop; spray as soon as pest is spotted. Control becomes increasingly difficult once larvae tunnels into the leaf between the two epidermal layers.
- Apply insecticides containing abamectin (e.g. Alonze 50EC, Summit 120SC) or imidacloprid (e.g. Nuprid 200 SC) or lambda-cyhalothrin (e.g. Viking 50CS, Pentagon 5%EC, Duduthrin, Voltage 5EC).

Note: Agrochemicals should be used in consultation with professional practitioners and considering existing cautionary/safety measures, particularly the manufacturer's instructions.

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Disclaimer: The content of this publication is for general information to potato farmers and technical staff only and no person should act, or fail to act on the basis of the information herein without professional advice from crop health experts.

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