

# Tomato leaf miner

*Tuta absoluta*



Tomato leafminer larva. (Marja van der Straten, NVWA Plant Protection Service, Bugwood.org)



Tomato leafminer adult. (Marja van der Straten, NVWA Plant Protection Service, Bugwood.org)



Exit holes on tomato fruits. (Peter Kodwaran, Ministry of Agriculture Livestock and Fisheries, West Pokot)

Prevention	Monitoring	Direct Control
<ul style="list-style-type: none"> <li>• Use pest-free transplants. Inspect new seedlings carefully before they are transplanted into the field or under shelter</li> <li>• Seal door frames and window frames of shelters, e.g. greenhouses. Plug any openings with insect-proof netting (with mesh less than 1.6mm)</li> <li>• Where possible, cover small plants with transparent plastic (such as polytunnels) to prevent insects from laying eggs on the plants</li> <li>• Remove and destroy broadleaf weeds that act as alternative host plants, e.g. <i>Datura</i>, <i>Solanum</i></li> <li>• Tools should be cleaned after use in infested fields</li> <li>• Avoid rotation with Solanaceous crops such as eggplants, Irish potatoes, tomatoes and capsicum. Rotate with non-host crops such as maize.</li> </ul>	<ul style="list-style-type: none"> <li>• Scout for early insect pest damage on leaves, stems and fruits, especially on the upper third of the seedling.</li> <li>• Look for:                         <ul style="list-style-type: none"> <li>• Eggs on leaves and stems</li> <li>• Mines and droppings on leaves, stems and fruit. Leaf mines are wide, silvery, and gradually become brown and necrotic. Leaf necrosis may result in leaf death or premature leaf drop. Fruit mines cause rotting</li> <li>• Larvae (caterpillars) in mines and fruits. They are green with a black head, their body turning pinkish green as they mature, 0.5-9 mm.</li> <li>• Exit holes on the surface of fruits</li> <li>• Adults underneath leaves: silvery brown moth, 5-7 mm long</li> <li>• Pupae in the soil, on the surface of a leaf, in a curled leaf or in a mine. They are light brown and approximately 9 mm long.</li> </ul> </li> <li>• Use pheromone traps, light traps or sticky traps to detect the pest early</li> <li>• Use one pheromone trap for a plot of less than 3,500m<sup>2</sup> and two traps for larger plots. Place traps at the same height as the crop. Check the trap every week and count the captured adult moths. After counting clean the traps carefully. Ensure the pheromone does not get wet.</li> <li>• The leaf mines created by tomato leaf miner can look similar to the mines created by the American serpentine leafminer, <i>Liriomyza trifolii</i>. However, the <i>L. trifolii</i> adult is a tiny, 1-2 mm long, yellow and black fly and its larvae do not feed in the fruits. Therefore <i>L. trifolii</i> does not leave exit holes on fruits. The <i>L. trifolii</i> larva is whitish or yellow-orange.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove infested tomato plant materials and destroy by burning or burying in holes more than 50cm deep. Do not dump infested fruits at farm edges, collection points or in markets</li> <li>• Destroy plant residues after harvest by burning or burying.</li> <li>• Apply Neem products to the soil, upper surface of leaves or directly on larvae to kill larvae.</li> <li>• Where populations of tomato leaf miner are low (1-3 moths caught per week) use pheromone baited water traps to mass trap adult male moths and reduce the populations</li> <li>• Tomato leaf miner has a number of natural enemies that can be used for biological control, including hemiptera predators, parasitic hymenoptera (e.g. <i>Trichogramma</i> spp.) and mites.</li> <li>• Inspect harvesting containers, field boxes or carts, packaging material and destroy or disinfect if tomato leafminer is suspected.</li> </ul>

Note: Pesticides may be available to control this pest. Please check with the Ministry of Agriculture in your country to find out which pesticides are registered in your country and the local restrictions for their use.