

Tuta absoluta (Tomato Leaf Miner)

Questions and Answers



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No.	Question	Answer
1.	What is <i>Tuta absoluta</i> ?	<i>Tuta absoluta</i> or the tomato leafminer is a tiny moth which is an insect that has four stages of development. These stages include; egg larva, pupa and adult.
2.	What crops do <i>Tuta absoluta</i> attack?	This pest mainly attacks solanaceous crops (tomato, melongene, peppers) in particular tomato.
3.	What does the pest look like?	<ul style="list-style-type: none">• Eggs: The eggs are tiny, creamy white to yellow and laid on the upper parts of the plant.• Larva: The larva has four stages. The first stage is approximately 0.5 mm long and cream-coloured. It turns yellowish-green with a black stripe at the back of its head. Full-grown larvae are approximately 7.5 mm and greenish-pink.• Pupa: The pupa is light brown and in a cocoon usually attached to the plant or in the soil just under the plant.• Adult: The adult moth is approximately 7mm, dark grey to brown with black spots on the wings. The antennae is long, and the legs and palps (sensory segments near mouth) have black and brown rings.
4.	Why is this insect a problem?	This pest damages plants at all stages of growth (seedlings, immature, mature) by mining and tunneling into buds, stems, leaves and fruits.

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5.	Can this pest cause yield losses?	Yes. The affected fruits become unmarketable and can result in 80 -100% yield losses.
6.	How can this pest spread?	The pest can easily spread by the movement of wind, infested fruits, plants and even packaging material.
7.	How long is the life cycle of the pest?	<p>The tomato leaf miner multiplies rapidly completing its life cycle in 29-38 days (can have approximately 12 generations per year).</p> <p>As temperatures increase, the life cycle is reduce to approximately 30 days.</p> <ul style="list-style-type: none">• Each female can produce up to 260 eggs in her lifetime.• Eggs hatch in 4 – 5 days after being laid.• Larval stages feeds for 13 – 15 days.• Pupation takes 9 – 11days in the soil or on the plant.• Female moths live for 10 -15 days.• Male moths live for 6 – 7 days.
8.	What symptoms are seen on the plant?	<ul style="list-style-type: none">• It feeds on the inner tissue leaving blotchy transparent mines (tunnels).• Mines become brown and necrotic (dead).• Inside the stem appears hollow and brown.

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		<ul style="list-style-type: none">• Fruits show boreholes and mines under and around the sepals with heaps of dark, granular excrement/frass (waste) on the surface.• Holes and mines serve as entry points for other organisms resulting in secondary infections (rots).
9.	How can I control & manage this pest?	<ul style="list-style-type: none">• An Integrated Pest Management (IPM) approach is recommended to reduce and manage the pest population in the field.• This IPM approach encompasses Cultural Practices, Mass Trapping and Chemical Methods.
10.	What are the cultural practices to managing this pest?	<ol style="list-style-type: none">1. Reduce the number of weeds in and around the field since, they can harbour the pest population2. Practice crop rotation, rotating crops outside of the solanaceous family (tomato, peppers, melongene) as crops from cruciferous family (cabbage, cauliflower, broccoli) & leguminous family (bodi, pigeon peas, string beans).3. Do not move infested planting material to pest free areas/fields.

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		<p>4. Apply insecticide, cut down and burn heavily infested plants and fields to reduce the multiplication and further spread of the pest.</p>					
11.	What chemicals are recommended to manage this pest?	<p>The following insecticides (Active Ingredients) are recommended to manage <i>Tuta absoluta</i>:</p> <table border="1"><thead><tr><th>Active Ingredient</th></tr></thead><tbody><tr><td>Abamectin</td></tr><tr><td>Azadirachtin</td></tr><tr><td><i>Bacillus thuringiensis</i> (Bt)</td></tr><tr><td>Chlorfenapyr</td></tr></tbody></table> <ul style="list-style-type: none">• These active ingredients should be alternated in the duration of the crop, to reduce the incidence of the pest developing tolerance or resistance to any of the active ingredient.• The active ingredient should be applied on the plant and also as a soil drench.	Active Ingredient	Abamectin	Azadirachtin	<i>Bacillus thuringiensis</i> (Bt)	Chlorfenapyr
Active Ingredient							
Abamectin							
Azadirachtin							
<i>Bacillus thuringiensis</i> (Bt)							
Chlorfenapyr							
12.	What is a notifiable pest?	<p>The Plant Protection Act (1997) defines a “notifiable disease” or “notifiable pest” as any disease or pest, which the Minister of Agriculture, Land and Fisheries may, by Order from time to</p>					

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		<p>time, declare to be a notifiable disease or notifiable pest within the meaning of the Act.</p> <p>A Notifiable pest status comes with a \$5000.00 fine or a two (2) year imprisonment should a person fail to report this pest/pest damage to the relevant authorities.</p>
13.	Who can I contact if I suspect the pest is present in my field/garden or for any additional information?	<ul style="list-style-type: none">• Research Division – cesentomology@gmail.com• Extension Division – etis.division@yahoo.com• County Agricultural Office in your area.