

Pests in the vegetable garden in April

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Дата: 20.04.2022 *Брой:* 4/2022



In the greenhouse, the early production of tomatoes and cucumbers has already been planted.

It is necessary to conduct regular monitoring for early detection of the occurrence of diseases and pests and for preventive plant protection, in compliance with the Economic Injury Levels (EIL). Yellow, light blue and black sticky traps are hung for the detection and capture of flying forms of small insects (greenhouse whitefly, aphids, tomato leaf miner). Pheromone traps can also be used to determine the onset of flight of the tomato leaf miner, as well as to reduce its population density. Infested leaves, petioles with disease spots, aphid colonies, egg clusters, larvae, mines, etc. are collected and removed from the greenhouse for destruction.

PESTS

Greenhouse whitefly (*Trialeurodes vaporariorum*)

It has 10-12 generations per year. The larvae, nymphs and adults cause damage. They usually develop on the underside of the leaves. During feeding, whiteflies excrete honeydew, as a result of which the leaves become sticky and sooty mould fungi develop on them, which impede photosynthesis. In addition to direct damage, they also transmit certain viral diseases.

Control

To monitor the occurrence and density of greenhouse whitefly, use yellow sticky traps; At low population density in greenhouses, the biological control agent *Encarsia formosa* may be released. Treatment with plant protection products (PPP) at EIL for tomatoes 10 adults/1 plant, for cucumbers 5 adults/plant.

Registered PPP

Abanto 75 ml/da; Azatin EC 100-150 ml/da; Brai 50-112.5 ml/da; Limocid 400 ml/da; Closer 120 SC 20-40 ml/da; Chrisant EC 75 ml/da; Minecto Alpha 125 ml/da; Natur Breaker 75 ml/da; Neemik Ten 390 ml/da; Oikos 100-150 ml/da; Orocid Plus 80-800 ml/da; Pyreguard 75 ml/da; Prev-Gold 160-600 ml/da; Requiem Prime 500-1000 ml/da; Sivanto Prime 56 ml/da; Naturalis 75-100 ml/da.



Aphids (fam. *Aphididae*)

They develop on the apical, young parts of the plants and often form dense colonies. They have a high reproductive capacity. They cause chlorotic spots on the leaves and deformations. They contaminate the leaf surface with honeydew, and the sooty mould fungi that develop on it soil the leaves and hinder photosynthesis. The plants lag in their development. They are vectors of viral diseases.

Control

Upon detection of the first specimens in the seedlings, treatment with PPP should be carried out; The last treatment is carried out immediately before planting in a permanent place; Destruction of weed vegetation in and around greenhouses, which is a reservoir for the survival of aphids and a source of virus infection.

Authorized aphicides

Azatin EC 100-150 ml/da; Ampligo 150 ZC 40 ml/da; Delmur 50 ml/da; Deltagri 30-50 ml/da; Closer 120 SC 20 ml/da; Mavrik 2 F 20 ml/da; Neemik Ten 390 ml/da; Oikos 100-150 ml/da; Sivanto Prime 45 ml/da; Tepeki/Aphinto 10 g/da; Flipper 1-2 l/da; Shirudo 15 g/da.

**Thrips (*Thrips tabaci*; *Franklinella occidentalis*)**

On the affected plant organs (leaves, flowers and fruits), small whitish spots with dark dots, the pest's excrements, are formed. At higher population density, the spots merge, the leaves become mottled, the spots coalesce and sometimes drying is observed. The generative organs of plants attacked in the early stages of their development are deformed, dry up and fall off. Tobacco thrips are found mainly on the leaves, less often on the flowers. Favourable conditions for its development are high temperatures and low air humidity. Western flower thrips mainly attacks the flowers. Thrips are vectors of tomato spotted wilt virus (bronzing virus).

Control

For monitoring, use blue sticky traps, which, in greater numbers, reduce the pest population density; Maintain optimal air humidity in the facilities; Upon occurrence, treat with PPP at EIL for tomatoes 1 adult/1 flower, 3 adults and larvae/1 leaf; for cucumbers 1 adult and larvae/flower, 3-5 adults and larvae/leaf.

Authorized PPP

Azatin EC 100-150 ml/da; Dicarzol 10 SP 556 g/da; Exalt 200-240 ml/da; Limocid 800 ml/da; Minecto Alpha 100-125 ml/da; Neemik Ten 390 ml/da; Oikos 100-150 ml/da; Requiem Prime 500-1000 ml/da; Sineis 480 SC – 10-37.5 ml/da, Naturalis 100-150 ml/da.



Tomato leaf miner (*Tuta absoluta*)

The moths of the pest are active at night and hide among the leaves during the day. The larvae cause the damage. They prefer leaves the most, but they also attack the fruits. The moth makes short and wide mines on the leaves, in which larvae and excrements can be seen, located at one end. The damage to the fruits provides an opportunity for the development of diseases that cause their rot. Damaged fruits have no commercial appearance.

Control

Use pheromone traps and black sticky boards for timely detection of the pest, for reducing its population density and for taking adequate control measures. At low density, one of the biological control agents *Macrolophus pygmaeus* or *Nesidiocoris tenuis* may be released. Treatment with PPP is carried out at EIL when 10% of the leaves have mines.

Authorized PPP

Avant 150 EC 25 ml/da; Alverde 240 SC 100 ml/da; Altacor 35 WG 8-12 g/da; Ampligo 150 ZC 40 ml/da; Affirm 095 SG 150 g/da; Voliam Targo 063 SC 80 ml/da; Delmur 50 ml/da; Exalt 200-240 ml/da; Coragen 20 SC 14-20 ml/da; Minecto Alpha 100-125 ml/da; NeemAzal T/S 0.3%; Neemik Ten 390 ml/da; Oikos 150 ml/da; Rapax SBS 100-200 ml/da; Sineis 480 SC 10-25 ml/da.



Two-spotted spider mite (*Tetranychus urticae*)

In case of heavy infestation, the leaves are covered with webbing. The pest sucks sap and at the puncture site a pale green spot is formed. Later, the spots merge, the leaf becomes marbled and dries up. They prefer older

leaves with reduced water content, as well as senescent, drought-stressed plants. In greenhouses they can develop up to 20 generations per year. They overwinter on plant residues in the soil.

Control

Maintain optimal soil and air humidity (do not allow drought); Regular field inspections; Removal of weeds in and around greenhouses; Upon occurrence and established economic thresholds (cucumbers - 5% infested plants; tomatoes - 10%) treat with PPP.

Authorized products

Apollo 50 SC 30-40 ml/da; Bermectin 50-100 ml/da; Akramite 480 SC 20-25 ml/da; Apache EW 30-100 ml/da; Butik 30-100 ml/da; Valmec 15-100 ml/da; Vertimec 018 EC 60 ml/da; Voliam Targo 063 SC 80 ml/da; Zoom 11 SC 12.55-50 ml/da; Requiem Prime 500-1000 ml/da; Laota 15-100 ml/da; Naturalis 100-200 ml/da; NeemAzal T/S 0.3%; Nissorun 10 WP 75 g/da; Danitron 5 SC 100 ml/da; Flipper 1-2 l/da; Floramite 240 SC 40 ml/da; Shirudo 15 g/da.