

In April in vegetable greenhouses

Author(s): проф. д-р Стойка Машева, ИЗК "Марица" Пловдив; гл.ас. д-р Дима Маркова; проф. д-р Винелина Янкова, ИЗК "Марица" в Пловдив

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I. Diseases

Early blight of tomato

Pathogen – *Alternaria* spp.

Symptoms/Damage

Leaf spots are dark brown to black with a concentric structure. The spots on the other above-ground parts are similar. Infection of the flower pedicels causes flower drop. The spots are covered with a dark coating of the

fungal sporulation.

Life cycle

The fungus prefers older leaves that have completed their growth.

It develops under conditions of high relative humidity.

Control

- Maintaining an optimal temperature-humidity regime in the cultivation facilities;
- Regular ventilation of the facilities;
- Treatment with PPP upon occurrence or in the presence of favourable conditions;
- Authorised products: Acrobat Plus WG 200 g/da; Vitene Triplo R 400-450 g/da; Dithane DG 200 g/da; Dithane M-45 200 g/da; Difcor 250 EC (valid until 21.12.2020) 50 ml/da; Zoxis 250 SC 70-80 ml/da; Captan 80 WG 150-190 g/da; Karyal Star 60 ml/da; Quadris 25 SC 0.075%; Ortiva Top SC 100 ml/da; Pencozeb 80 WP 200 g/da; Pencozeb 75 WG 210 g/da; Polyram DF 0.2%; Ridomil Gold MZ 68 WG 0.25%; Sancozeb 80 WP – 200 g/da; Score 250 EC (valid until 31.12.2020) 0.04%; Sinstar 70-80 ml/da; Tazer 250 SC 80-100 ml/da; Cidely Top 100 ml/da.

Grey (Botrytis) rot of tomato

Pathogen – Botrytis cinerea

Symptoms/Damage

All above-ground parts of the plants are attacked. The spots are water-soaked and later become necrotic, covered with abundant grey-brown mycelium and sporulation of the fungus.

Life cycle

The conidia of the fungus are spread by air currents and cause new infections. The fungus can also exist as a saprophyte in the soil.

Control

- Maintaining optimal air humidity in the seedling compartment. Regular ventilation;
- The infested plant parts are collected in bags and destroyed outside;
- Upon appearance of the first spots, treatment with PPP is carried out;
- Authorised PPP: Difcor 250 SC (valid until 31.12.2020) 50 ml/da; Captan 80 WG 150-190 g/da; Prolectus 50 WG 80-120 g/da; Signum WG 100-150 g/da; Switch 62.5 WG 100 g/da.

Leaf mould of tomato

Pathogen – Fulvia fulva

Symptoms/Damage

The first signs are pale spots on the upper side of the leaves. Their lower side becomes covered with a velvety brown coating. Under favourable conditions the plants become defoliated.

Life cycle

It is preserved as mycelium on the structures, on plant residues in the soil and on the seeds. Spores germinate at air humidity above 95%. Optimum temperature 20-25⁰C.

Control

- Cleaning the structures and soil from plant residues and weeds;
- Growing resistant varieties;
- Optimal stand density;
- Optimal temperature-humidity regime;
- Regular ventilation of the cultivation facilities;
- Balanced fertilisation;
- Upon appearance of the first spots – treatment with PPP, mainly the lower side of the leaves.
- Registered PPP: Zoxis 250 SC 70-80 ml/da; Signum WG 100-150 g/da; Sinstar 70-80 ml/da; Cidely Top 100 ml/da.

Powdery mildew of cucumber

Pathogen – Podosphaera xanthii, Erysiphe cichoracearum

Symptoms/Damage

Spots covered with a white powdery coating are observed on the upper and lower surface of the leaves, on the petioles and on the stem.

Life cycle

Favourable conditions for development are: disturbed temperature-humidity regime; unbalanced nitrogen fertilisation; reduced light.

Control

- Maintaining an optimal temperature-humidity regime;
- Treatment with PPP upon appearance of the first spots;
- Authorised products: Bayfidan 250 EC (01.12.2020 – grace period for sale and distribution) 0.02%; Vivando 20 ml/da (0.02%); Domark 10 EC 50 ml/da; Zoxis 250 EC 70 ml/da; Indar 5 EW 100 ml/da; Karamat 2.5 EW 200 ml/da; Collis SC 40-50 ml/da; Quadris 25 SC 0.075%; Custodia (valid until 31.08.2020) 50-100 ml/da; Legado 80 ml/da; Miklofil 20-60 ml/da; Ortiva Top SC 100 ml/da; Ritual 20-60 ml/da; Sivar 80 ml/da; Systhane 20 EW 37.5 ml/da; Systhane EcoZome EW 65-165 ml/da; Topaz 100 EC 35-50 ml/da; Phytosev 200 ml/da; Flint Max 75 WG 20 g/da; Cidely Top 100 ml/da.

II. Pests

Aphids

Taxon – Fam. Aphididae

Symptoms/Damage

They cause chlorotic spots on the leaves and deformations;

They contaminate the leaf surface with “honeydew”;

Sooty moulds developing on it contaminate the leaves and impede photosynthesis; they are vectors of viral diseases.

Life cycle

They develop on the apical young tissues and often form dense colonies. They have a high reproductive capacity.

Control

- The last treatment with PPP is carried out immediately before planting at the final site;
- Authorised aphicides: Closer 120 SC 20 ml/da; Ampligo 150 ZC 40 ml/da; Biscaya 240 OD 0.06%; Deca EC/Desha EC/Dena EC, Poleci, Decis (valid until 31.10.2020) 50 ml/da; Deltagri 30-50 ml/da; Decis 100 EC (valid until 31.10.2020) 7.5-17.5 ml/da; Calypso 480 SC 0.02%; Confidor Energy OD 0.06%; Kohinor 200 SL 0.05%; Mavrik 2 F 0.02%; Masai WP 15-25 g/da; Meteor 0.08-0.09%; Mospilan 20 SP 0.0125%; Mospilan 20 SG 25 g/da; Nexide 015 CS 0.02%; Picador 20 SL 0.05%; Sivanto Prime 45 ml/da; Scatto 30-50 ml/da; Sumi Alpha 5 EC/Sumicidin 5 EC/Oasis 5 EC 0.02%; Tepeki 10 g/da; Fury 10 EC 15-20 ml/da.

Greenhouse whitefly

Pathogen – Trialeurodes vaporariorum

Symptoms/Damage

During feeding the whiteflies excrete “honeydew”, as a result of which the leaves become sticky and sooty moulds develop on them, which impede photosynthesis. In addition to direct damage, they also transmit dangerous viruses.

Life cycle

They usually develop on the lower side of the leaves. There are 10-12 generations per year.

Control

- Upon appearance of the first individuals, treatment with PPP is carried out;
- Authorised PPP: For tomato and cucumber: Admiral 10 EC 0.05%; Brait 50-112.5 ml/da; Vaztak Nov 100 EC 0.03%; Deca EC/Desha EC/Dena EC, Poleci, Decis (valid until 31.10.2020) 50 ml/da; Decis 2.5 EC (valid until 31.10.2020) 0.05%; Confidor Energy OD 0.08%; Krisant EC 75 ml/da; Meteor 0.08-0.09%; Mospilan 20 SP 0.02%; Mospilan 20 SG 35-40 g/da; Mulligan 25-95 ml/da; Naturalis 75-100 ml/da; Natur Breaker 75 ml/da; Piretro Natura 75 ml/da; Proximo 50-80 ml/da; Sivanto Prime 56 ml/da.
- Placement of yellow sticky boards.

Thrips: onion thrips and western flower thrips

Pathogen – Thrips tabaci; Frankliniella occidentalis

Symptoms/Damage

When attacking leaves, petioles, flowers and fruits, small whitish spots with dark dots are formed. The attacked generative organs are deformed, dry up and fall off.

Life cycle

They develop at high temperatures and low air humidity;

Western flower thrips attacks mainly the flowers;

They transmit tomato spotted wilt virus;

They develop several generations per year, and under greenhouse conditions they reproduce continuously.

Control

- Upon appearance, immediate treatment with PPP;
- Authorised PPP: Deca EC/Desha EC/Dena EC, Poleci, Decis (valid until 31.10.2020) 30 ml/da; Dicarzol 10 SP 556 g/da; Lamdex Extra 42-80 g/da; Meteor – 0.06-0.07%; Naturalis (valid until 30.04.2020) – 75-100 ml/da; Sineis 480 SC – 10-37.5 ml/da; Fury 10 EC – 0.015%.
- Placement of blue sticky boards.

Tomato leaf miner

Pathogen – Tuta absoluta

Symptoms/Damage

It makes short and wide mines on the leaves, in which the larvae can be seen;

Secondary diseases develop on the damaged fruits.

Life cycle

The moths are active at night and hide during the day.

Under favourable conditions it can develop up to 10-12 generations.

Damage is caused by the larvae.

Control

- Upon detection of the first individuals, treatment with PPP is carried out.

Authorised 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; Bermektin (valid until 30.04.2020) 50-100 ml/da; Voliam Targo 063 SC 0.08%; Confidor Energy OD 80 ml/da; Coragen 20 SC 14-20 ml/da; Mospilan 20 SP 0.02%; Neem Azal T/S 0.3%; Picador 20 SL 0.05%; Rapax SBS (valid until 30.04.3030) 100-200 ml/da; Sineis 480 SC 10-25 ml/da; Warrant 20 SL (valid until 31.07.2020) 50 g/da.

- Placement of pheromone traps and black sticky boards.

Two-spotted spider mite

Pathogen – Tetranychus urticae

Symptoms/Damage

Under heavy infestation the leaves are covered with webbing. The pest sucks sap and at the puncture site a pale green speck is formed. Later the spots merge, the leaf becomes mottled and dries out.

Life cycle

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 and in the soil.

Control

- Maintaining optimal soil moisture (avoiding drought);
- Regular field inspections;
- Cleaning weeds in and around the greenhouses;
- Upon appearance and established economic thresholds (cucumber - 5% infested plants; tomato - 10%) treatment with PPP should be carried out;
- Authorised products: Apollo 50 SC 30-40 ml/da; Bermektin (valid until 30.04.2020) 50-100 ml/da; Acaramite 480 SC 20-25 ml/da; Valmec 15-100 ml/da; Vertimec 018 EC 60 ml/da; Zoom 11 SC (valid until 31.07.2020) 12.55-50 ml/da; Laota (valid until 30.04.2020) 15-100 ml/da; Masai WP 15 g/da (for cucumber); Naturalis (valid until 30.04.2020) 100-200 ml/da; Neem Azal T/S 0.3%; Nissorun 10 WP 75 g/da; Floramite 240 SC 40 ml/da;

Only PPP at the registered dose, included in the “List of products for plant protection authorised for placing on the market and use”, published on the website of the BFSA, shall be applied.

PPP shall be purchased only from traders holding an authorisation for the activity and included in the list of companies authorised to carry out the activities of wholesale trade in plant protection products, retail trade in plant protection products in agricultural pharmacies, repackaging of plant protection products and carrying out fumigation and disinfection of areas, premises and plant production against pests, published on the website of the BFSA.