

Pest control system for greenhouse vegetable crops and field vegetable crops

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Tomatoes

Pest – Late blight *Phytophthora infestans*

Damage

The disease starts from the lowest leaves touching the soil surface, as water-soaked spots concentrated at the tip along the veins.

Control

An important part of disease control is its timely and accurate diagnosis. Before the appearance of symptoms, carry out preventive spraying with contact plant protection products.

Pest – Early blight (brown leaf spots) *Alternaria solani*

Damage

Initially, small dark brown spots are formed on the older leaves. Gradually they expand and, under high humidity, become covered with a dark brown mould. In case of severe spotting, the leaves scorch and dry out.

Control

Maintain an appropriate temperature regime in greenhouses, avoiding high air humidity and prolonged dew retention on plants. When infection is established, carry out several treatments at 7–10 day intervals with registered plant protection products.

Pest – Grey mould *Botrytis cinerea*

Damage

Damage on the leaves appears as light green or yellow-green spots, indistinctly delimited from the healthy tissue. On the underside, the spots are covered with a velvety greyish-white mould.

Control

The pathogen survives as spores on plant residues or on the greenhouse structure. For greenhouse tomatoes, it is essential to ensure a proper air and water regime during cultivation.

Pest – Tomato leafminer moth *Tuta absoluta*

Damage

When examining a damaged leaf against transmitted light, the mine formed between the two epidermises is completely transparent and the larva can be seen inside.

Control

Installation of pheromone, water and light traps. Upon detection of the first mines, the damaged leaves are removed. At low population density, the following can be introduced: *Macrolophus pygmaeus* or *Nesidiocoris tenuis*.

Pest – Greenhouse whitefly *Trialeurodes vaporariorum*

Damage

On the leaves of infested plants, all developmental stages of the pest can be found simultaneously. The larvae are initially mobile, and later attach at one place, moult and turn into immobile nymphs. In case of severe infestation, the leaves turn yellow.

Control

To prevent mass population increase of the pest, yellow sticky traps are placed.

At low population density, the following can be introduced: *Encarsia formosa*, *Eretmocerus eremicus* or *Eretmocerus mundus*.

For chemical control, use products with different modes of action.

Pest – Leaf-mining flies *Liriomyza* sp.

Damage

The larvae cause damage by feeding on the leaf parenchyma. The mines are winding, whitish at first, later turning brownish. They are narrow, long, very often intersect or merge with each other, and the excreta form a narrow line inside.

Control

Use healthy planting material and prevent flies from entering through doors and ventilation openings.

To monitor the flight and population density of the pests, use orange sticky traps.

Pest – Thrips *Thrips tabaci*, *Franklinella occidentalis*

Damage

The larvae cause damage by feeding on the leaf parenchyma. The mines are winding, whitish at first, later turning brownish. They are narrow, long, very often intersect or merge with each other, and the excreta form a narrow line inside.

Control

At low population density, the following can be introduced: *Macrolophus pygmaeus*, predatory bugs of the genus *Orius* or *Amblyseius swirskii*.

Cucumbers

Pest – Downy mildew of cucumber *Peronospora cubensis*

Damage

Irregularly shaped water-soaked spots, delimited by the veins, form on the leaves and soon turn yellow.

Control

Carry out regular ventilation in greenhouses. When the disease is established, treat with systemic fungicides at 7-day intervals.

Pest – Powdery mildew of cucumber *Sphaerotheca fuliginea*

Damage

The pathogen attacks all above-ground organs, but affects mainly the leaves. Symptoms appear as a white powdery coating. The photosynthetic surface is greatly reduced and this affects the yield.

Control

Do not neglect general preventive measures and weed control in and around greenhouses.

At the appearance of the first symptoms, treat with authorised plant protection products.

Pest – Greenhouse whitefly *Trialeurodes vaporariorum*

Damage

In case of severe infestation, the leaves turn yellow. Whiteflies excrete “honeydew”, on which sooty mould fungi develop.

Control

Placement of yellow sticky traps.

At low population density, the following can be introduced: *Encarsia formosa*, *Eretmocerus eremicus* or *Eretmocerus mundus*.

Pest – Thrips *Thrips tabaci*, *Franklinella occidentalis*

Damage

At the puncture sites, small silvery-white spots appear. When flowers and young fruit sets are attacked in the earlier phenophases, they drop off.

Control

Placement of blue sticky traps.

At low population density, the following can be introduced: *Amblyseius swirskii* or predatory bugs of the genus *Orius*.

Pest – Spider mites *Tetranychus sp*

Damage

At high population density, mites form colonies and spin webs on all plant parts.

Control

Inspect plants regularly and do not allow drought in greenhouses. At low population density, the following can be introduced: *Phytoseiulus persimilis*.

Pests of field vegetable crops

Garlic

*Pest – Garlic fly *Suillia lurida**

Damage

The bulb of damaged plants softens, the central leaf wilts, curls spirally, turns yellow and dries out. Later all leaves turn yellow and dry up, and the plants break off when pulled.

Control

The flight of the fly begins when the temperature at a soil depth of 5 cm remains around 1 °C for a certain period. The appearance of the housefly also serves as an indicator.

The first spraying is carried out at the beginning of the fly flight, before egg-laying.