

# System for pest control in greenhouse vegetable crops at the end of April and the beginning of May

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## Seedling Production

*Pest – Damping-off of seedlings Rhizoctonia solani, Pythium de Baryanum etc.*

## Damage

The risk of damping-off of seedlings continues to exist. Watery spots appear on the stems at the base of the plants. They quickly encircle the stem like a ring and it is constricted.

## **Control**

Regular ventilation and irrigation only with tempered water.

When diseased plants appear, they should be removed. The remaining plants should be irrigated with fungicides authorised for use.

**Pest – Grey mould *Botrytis cinerea***

## **Damage**

The pathogen attacks all above-ground parts of the plants. It is preserved in a number of perennial hosts, in plant residues and as mycelium and sclerotia in the soil.

## **Control**

When symptoms appear and conditions are favourable for the development of the disease, treat twice at 7–10-day intervals with registered plant protection products.

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

## **Damage**

At a high level of infestation, the leaves dry out prematurely. The spots on the stems of young plants are initially small, later they enlarge, acquire a concentric pattern and become lighter in the centre. Sometimes they encircle the stem in a ring and cause dieback of the apical parts.

## **Control**

In seedling production sites, a good air and water regime should be ensured. Preventive treatments should be carried out with contact fungicides, and in case of established infection two to three treatments should be applied with registered plant protection products with systemic action.

**Pest – Aphids *fam. Aphididae***

## **Damage**

The larvae and adults cause damage. They suck sap from the leaves, stems and floral parts and form dense colonies. At the feeding sites, the leaves turn yellow and become deformed. During feeding, aphids excrete “honeydew”.

## **Control**

Upon detection of even a single specimen in the seedling beds, immediate treatment is required with one of the insecticides registered for use. The last treatment is carried out immediately before transplanting the seedlings to the field.

**Pest – Mole cricket** *Gryllotalpa gryllotalpa*

## **Damage**

A polyphagous species that gnaws through the roots of plants and the base of the stem, destroying the sprouts. It makes tunnels in the soil, lifts the plants and they dry out.

## **Control**

Soil cultivation helps destroy the tunnels and nests of the pest. On large areas, registered ready-made baits should be used.

**Pest – Millipedes** class *Diplopoda*

## **Damage**

They cause damage by gnawing the roots and the stem. The affected plants have slow growth and their roots rot.

## **Control**

The ready-made baits authorised for mole cricket control also affect the population density of millipedes and woodlice.

**Pest – Woodlice** class *Malacostraca*

## **Damage**

The damage to the plants is expressed in gnawing of various shapes and sizes.

## **Control**

The ready-made baits authorised for mole cricket control also affect the population density of millipedes and woodlice.

## **Tomatoes**

**Pest – Late blight** *Phytophthora infestans*

### **Damage**

In addition to the leaves, disease spots can also be observed on the stems, leaf petioles and fruit peduncles. They are large, irregular in shape, initially watery and later necrotic. A fungal growth is rarely observed on them.

### **Control**

Before symptoms appear on the leaves, spray preventively with contact plant protection products.

After the first symptoms appear, use authorised systemically acting fungicides.

**Pest – Grey mould** *Botrytis cinerea*

### **Damage**

Around the peduncle of ripening fruits, grey-brown spots develop, which enlarge and cause complete rotting. On all affected parts, under humid conditions, a grey mouldy growth develops.

### **Control**

A good air and water regime of cultivation should be maintained. The lowest two to three leaves should be removed to ensure free air access. When disease symptoms appear, treat with registered fungicides.

**Pest – Leaf mould** *Cladosporium fulvum*

### **Damage**

Damage occurs only on the leaves, where light green or yellowish-green spots are observed, indistinctly delimited from the healthy tissue. On the underside, the spots are covered with a velvety, greyish-white growth.

**Control**

The pathogen is preserved as spores on plant residues or on the greenhouse structure. High relative air humidity and rising temperatures are favourable for the development of the disease.

**Pest – Tomato leafminer moth** *Tuta absoluta*

**Damage**

Young larvae attack leaves, stems, flowers and developing fruits. The galleries in the stems cause deformations and slow down plant growth, and the flowers drop. Damage to the fruits is expressed as perforations and mines in the form of tunnels. Developing fruits become deformed.

**Control**

The most reliable and easiest way to detect the pest is by using pheromone traps. Control must begin immediately after the first captured moths are detected and should include traps for mass trapping, destruction of all plant parts and spraying with authorised insecticides.

**Pest – Leaf-miner flies** *Liriomyza sp.*

**Damage**

The larvae mine the leaves without affecting the two epidermises. The mines on the leaves are long and narrow, and the excrement forms a narrow, dark, interrupted line inside the mines.

**Control**

To monitor the flight and population density of the pests, orange sticky traps should be used. For chemical control, products with different modes of action should be used.

**Pest – Greenhouse whitefly** *Trialeurodes vaporariorum*

**Damage**

Under heavy infestation, the leaves turn yellow. During sap sucking, the larvae cannot utilise the sugars and excrete them in the form of “honeydew”. It contaminates the leaves.

## **Control**

When chemical control is necessary, in order to avoid the development of resistant populations, insecticides with different modes of action should be used.

**Pest – Spider mites** *Tetranychus sp.*

## **Damage**

They suck sap from the leaves and small pinpoint spots appear at the puncture sites. Spider mites prefer older leaves with lower water content, but at high population density they attack the entire plant.

## **Control**

To ensure effective control against mites, drought stress in the crop must not be allowed.

At low population density, *Phytoseiulus persimilis* can be introduced.

If necessary, spray with one of the authorised acaricides.

## **Cucumbers**

**Pest – Powdery mildew of cucumber** *Sphaerotheca fuliginea*

## **Damage**

The fungus develops year-round in protected cultivation facilities. Under severe infestation, flowers fall off. The fruits wilt and, although rarely, may become covered with a powdery coating.

## **Control**

Moderate temperatures and low light intensity promote the development of the disease.

When powdery mildew appears, treat with authorised plant protection products.

## **Pest – *Fusarium rot Fusarium solani***

### **Damage**

At the base of the stem, rotten dark brown tissue is observed. Under high humidity, the rotten tissues are covered with a barely visible white or creamy growth.

### **Control**

*Fusarium rot* develops at high temperatures accompanied by soil drought.

During the growing season it spreads through the soil, irrigation water and diseased plants.

## **Pest – Thrips *Thrips tabaci, Frankliniella occidentalis***

### **Damage**

At the feeding sites, small light yellow spots with numerous black or brown dots – the pest's excrement – are formed.

### **Control**

Regular inspection of the areas. Placement of electric-blue sticky traps and spraying with authorised plant protection products.