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Early-spring agrotechnical and plant protection practices in seedling production

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Main pests for the period:

Damping-off of seedlings

Aphids

Root-knot nematodes

Mole cricket

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Damping-off of seedlings

True damping-off

Pathogens: Phythium, Phytophtora, Rizoctonia, etc.

Symptoms:

In denser, tender seedlings grown at higher temperature and humidity, rotting of the stem is observed immediately above the soil surface or slightly below it;

The pathogens occur in association. They multiply particularly strongly in moist soil rich in organic matter, at a temperature of about 25 degrees and insufficient light.

False damping-off

Cause: Non-infectious disorder

Symptoms:

In the area of the root collar and slightly above it, the stem becomes threadlike thin and the plant lodges;

The affected tissues are dry;

Saprophytic organisms may penetrate through the damaged area;

It occurs at high temperatures, drought and overheating of the soil surface;

Initially, individual plants are “cut off”. Then the disease spreads to adjacent plants, forming patches of diseased plants. Later they dry up and empty spots remain in the seedbed;

Damping-off can also attack older seedling plants. In them, the bark at the base of the stem dies without affecting the vascular bundles. Such seedlings do not wilt immediately, but stop growing and after some time they wilt and dry up;

Dense, overgrown and tender seedlings are more severely affected by damping-off;

In pepper, damage from this disease is greater at high air humidity and increasing temperatures;

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Plants supplied unilaterally with nitrogen, especially when grown under insufficient light, also have increased susceptibility to the disease.

Control:

Sowing of seeds at optimal density;

Seed disinfection with the product Flowsan FS - 180 ml/100 kg seed against soil-borne pathogens in tomato;

Raising seedlings in disinfected manure-soil mixtures;

For soil disinfection (in the absence of plants) in steel-glass greenhouses, the product Nemasol 510 – 8-10 l/ha can be used against root-knot nematodes, soil-borne pathogens and weed seeds, with the higher dose applied where soil pathogens predominate. It is applied by means of an applicator with rolling, as well as through drip irrigation systems, followed by rolling or covering with polyethylene;

After emergence, an optimal temperature (18-20°C) and soil moisture of about 70% of field capacity should be maintained in the cultivation facilities;

Irrigation should be carried out with small amounts of water in order to avoid short-term waterlogging followed by prolonged drought;

The difference between soil and air temperature should not exceed 6-8 ºC;

Regular ventilation of cultivation facilities and shading when necessary;

Preventive treatments of seedlings can be carried out every seven days at the cotyledon stage in vegetable crops with copper fungicides. Upon occurrence of damping-off, diseased plants are removed, the patches are treated (burned) with a 3% solution of copper sulfate or ammonium nitrate, irrigation is reduced, and healthy plants are treated with authorized systemic fungicides.

Aphids – fam. Aphididae

Symptoms:

As a result of feeding, they cause chlorotic spots and leaf deformation, stunting and wilting of plants;

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Contamination of the leaf surface by the “honeydew” excreted by aphids;

Aphids are also vectors of dangerous viral diseases.

Control:

Upon detection of even a single specimen in the seedbeds with seedlings, immediate treatment with one of the registered plant protection products must be carried out;

The last treatment is carried out immediately before transplanting the seedlings to the field;

Destruction of weed vegetation around and in the seedbeds, which provides a favorable environment for survival and a source of virus infection;

Spraying with registered aphicides.

Root-knot nematodes – Meloidogyne spp.

Symptoms:

Formation of swellings and deformations on plant roots, called galls;

Disrupted sap flow in plants, reduced uptake of water and nutrients from the soil;

In case of severe infestation, growth is delayed, leaf yellowing and wilting begin;

The manifestation of symptoms on the aboveground parts depends on the density of nematodes in the soil and on agroclimatic conditions (temperature, moisture, soil type, etc.).

Control:

Soil analysis of areas intended for raising seedlings and vegetables;

Use of resistant varieties;

Soil disinfection intended for seedling production with registered nematicides against root-knot nematodes in greenhouse vegetables.

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Mole cricket – Grillotalpa grillotalpa

Symptoms:

The pest attacks all vegetable crops grown in hotbeds, greenhouses and in the field. Overwintering individuals become active in spring when the weather warms up, and in cultivation facilities for seedling production they can be found as early as February.

Control:

Proper soil tillage to destroy the tunnels and nests of the mole cricket, as well as to destroy its various developmental stages;

Use of small areas with water traps buried in the soil up to the upper edge of the container or scattering heaps of farmyard manure, where the pest accumulates;

Application of registered ready-made baits.

Garlic fly – Suilia lurida

Damage:

The larva causes damage by boring into the stem, then moving towards the bulb, where it continues to feed;

Plants stop developing, their leaves turn yellow and wilt, stems are hollow, bulbs are softened;

The pest has one generation per year and overwinters as an adult;

The flight of overwintered adults begins very early – February-March;

The garlic fly attacks garlic and onion planted in the autumn.

Control:

Chemical control is directed against the adult, before egg-laying;

It is carried out in February-March, when 5 flies per 10 sweeps with a net are detected;

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Carrying out 2-3 consecutive sprayings at 8-10 day intervals, with mandatory addition of a sticker to the spray solution;

Earlier planting of garlic in the autumn;

Timely implementation of all measures that ensure the development of vigorous plants – crop rotation, weed control, etc.;

Avoid fertilizing garlic with farmyard manure, which attracts flies for egg-laying;

Garlic grown for green leaves is not treated against this pest.