

FUNGAL DISEASES OF POTATO VARIETIES AND MEASURES TO COMBAT THEM

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Abstract: This article discusses the negative impact of fungal diseases on plant growth, development and yield, the most common fungal diseases of potatoes and methods of combating them. In addition, the efficiency of potato cultivation can be increased by using new technologies, disease-resistant varieties, good soil management and the use of harmless chemicals.

Key words: Fungi, variety, *Alternaria solani*, wilt, black spot, control, agrophysics, stem.

Introduction. Potato (*Solanum tuberosum*) is one of the most widely consumed vegetables in the world and is an important crop for the national economy. Along with its worldwide distribution and role in the diet of the population, potato cultivation also faces a number of environmental and agrophysical problems. One of these is the diseases that affect potato varieties, especially fungal diseases. Fungal diseases can significantly reduce the efficiency of potato production. The problem of preventing and controlling these diseases is a pressing issue for farmers around the world. This article discusses the most common fungal diseases of potato varieties, their effects and methods of prevention.

General classification of fungal diseases in potato varieties. Fungal diseases are one of the most common and serious diseases that pose a threat to potato plants. Fungi that damage potato plants are mainly divided into two types: internal (damaging the root system and above-ground part of the potato) and external (damaging the leaves, stems and fruits of the potato). Fungal diseases negatively affect the growth, development and yield of the plant.

The most common fungal diseases of potatoes are:

1. *Phytophthora infestans* — the most dangerous and widespread disease of potato plants. These fungi damage potato leaves and stems.
2. *Fusarium* spp. — damage the potato root system, prevent fruit ripening, and weaken the plant.
3. *Rhizoctonia solani* — causes rot and senescence in potato roots and stems.
4. *Alternaria solani* — appears as black spots on potato leaves.

These diseases can significantly reduce the yield and quality of potatoes, so their timely detection and treatment are very important.

Phytophthora infestans and its effects. *Phytophthora infestans* is the most common and serious fungal disease of potatoes. This fungus damages the leaves and stems of the plant, disrupting their normal photosynthesis process, as a result of which the plant weakens and the yield decreases. The initial symptoms of the disease are the appearance of black or brown spots filled with liquid on the leaves. The second stage of the disease development is damage to the stems and root system of plants, which can lead to the complete loss of the potato crop.

The mechanism of spread of *Phytophthora infestans* is mainly accelerated by high humidity and cold temperatures. The following methods are recommended to limit the spread of the disease:

1. Removal of damaged plants and destruction of their remaining parts.
2. Use of chemicals - treatment of plants with fungicides.
3. Fermentation and sanitation measures - ensuring good air circulation in the fields.
4. Biological control methods - using harmless microorganisms to protect plants from disease.

Fusarium spp. (Puva) and its effects. *Fusarium* spp. is another important fungal disease of potatoes. This fungus damages the potato root system, resulting in rotting of the plant's roots and stunting of the plant. *Fusarium* disease develops mainly in warm and humid conditions, which is why it is

widespread in warm climates. The disease develops latently in potato tubers, stems and fruits, and subsequently leads to the death of the plant.

As a symptom of Fusarium disease, red or pink spots and rotting areas appear on potato tubers. This disease stops the growth of potatoes and reduces the yield. The following methods are recommended to prevent Fusarium disease:

1. Selection of potato varieties — selection of Fusarium-resistant varieties.
2. Treatment with fungicides — using special chemicals
3. Control of Fusarium fungus.
4. Soil improvement — ensuring good drainage and maintaining soil sanitation.

Rhizoctonia solani and its effects. Rhizoctonia solani is another fungus that causes root and stem rot in potatoes. This disease is especially harmful to newly planted plants. The fungus kills the plant by drying out the roots and stems. The main symptoms of the disease are the appearance of small, hard, black spots on the stems and roots. The following methods are used to prevent and treat Rhizoctonia solani:

1. Use healthy and disease-free seeds.
2. Disinfect the soil with microbial and chemical agents.
3. Provide ample irrigation and good drainage.

Conclusion

Fungal diseases of potato varieties, especially Phytophthora infestans, Fusarium spp. and Rhizoctonia solani, can seriously reduce yield and quality. Therefore, it is necessary to use agronomic, chemical and biological methods to control fungal diseases in potato cultivation. The efficiency of potato cultivation can be increased by using new technologies, disease-resistant varieties, good soil management and the use of harmless chemicals. The use of combined measures

and modern agronomic knowledge for farmers is necessary to combat these diseases.

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