



MEASURES TO COMBAT DISEASES AND DISEASES OF POTATOES

Axmedov Otabek,

Karakalpak Institute of Agriculture and Agrotechnologies, assistant.

Hayitboyev Doniyor

Karakalpak Institute of Agriculture and Agrotechnologies, assistant.

Annotation: *Disease Causative agent - mycoplasma. The disease is transmitted by the insect when it feeds, as well as through nodules. Viral, viroid, and mycoplasma diseases are widespread in all potato-growing zones of the world, but their infection in the northern regions is less frequent than in the southern regions.*

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Among potato diseases, mainly potato tuber spinning (Gothic). The pathogen is a potato tuber spindle virus (VVKK-KTUV). The disease spreads through contact, by cutting tubers, through agricultural tools during inter-row cultivation, as well as through mites, aphids, beetles, and through seeds and pollen. The yield of infected plants decreases by up to 85%.


Plants affected by this disease become short, the number of stems in the bush decreases, and lateral branches, especially lower ones, begin to grow strongly. Branches and leaves grow at an acute angle to the stem and appear to adhere to it.

This gives the plants a Gothic form. The Gothic style is determined by signs of decreased flowering strength and shortening of leaf blades. In plants infected with gotia, the tuber becomes smaller and takes on a long, elongated or spindle-shaped form, brown spots appear, and cracks are also observed above the tuber.

Stolbur wilting. The causative agent is mycoplasma. The disease is transmitted when the insect feeds, as well as through nodules. The main infector is the cancer cricket. It is not transmitted through leaf sap. A tuber affected by Stolbur wilt often does not bear fruit.

At the tips of the leaves, chlorosis appears at the edges, growth slows down, and small leafiness develops, possibly turning crimson. The leaves are narrowed in width, sharply pointed, hard, curved towards the middle root, or curved like a groove. Chlorosis spreads throughout the plant's entire body.

The internodes contract, buds in the leaf axils grow, and the formation of hollow roots is observed. Plant growth slows down or stops. In the second half of the growing season, the leaves on the stem stalks begin to wilt, which dries up the plant. The resulting tubers are relatively soft, distorted, wrinkled, and in most cases give a



filamentous outgrowth. Such tubers either do not germinate or, even if they germinate, form weak plants. At high temperature, the symptoms of the disease intensify.

Demon broom. The pathogen 1072 _f is mycoplasma 1, transmitted through nodules and cancerous crickets, not by contact. Chlorosis is observed on the apical leaves of infected plants, the growth of the main stem is significantly slowed, and large, thin stems with numerous small, colorless leaves are formed. The plant takes on the appearance of a short, branched bush. The number of leaves in the leaf litter decreases.

Nodules are numerous, but very small, forming numerous filamentous stems at the end of the growing season. In some cases, the flowers turn bluish. The disease is observed when the temperature is high.

Disease control measures. Viral, viroid, and mycoplasma diseases are widespread in all potato-growing zones of the world, but their infection in the northern regions is less than in the southern regions, high temperatures and a large number of disease-carrying insects in this region create favorable conditions for re-infection of the plant, reducing the probability of infection and yield.

It has been established that if 1% of plants are infected with dangerous viruses, the yield decreases by 0.5-0.6%. Epidemics of viruses occur in the year of the appearance of a large number of infectious aphids and contribute to the rapid spread of viruses. Potato viral diseases are not directly controlled.

The development of viruses can be prevented by destroying the infectious period of the infected plant, which is the source of the virus. The main source of infection is the infected plant. In a plant formed from an infected mother tuft, the yield decreases. Therefore, all measures to combat viral diseases should be aimed at growing healthy seed potatoes.

In the cultivation of food potatoes, it is possible to combat viral infections by regularly purchasing certified seeds and planting disease-resistant varieties. The number of potato generations (reproduction) grown on farms depends on climatic conditions, variety resistance, and the preventive measures taken.

Cultivation of resistant potato varieties is considered one of the economically and environmentally beneficial measures in the fight against viral diseases. The resistance of the variety to certain viruses and their strains is its characteristic feature.

It is necessary to create varieties resistant to a complex of diseases. By cultivating resistant potato varieties in large areas, the overall infectious background can be reduced to a certain extent. In the fight against viral diseases in areas where food potatoes are grown, the elimination of weeds, which are the source of many viruses, and the fight against infectious aphids are of great importance.



The infectious chain of viral diseases of potatoes can be broken to a certain extent by preventive agrotechnical measures. Elimination of the stem prevents viruses that are transmitted from the stem to the anthill with the help of sucking aphids. The timing of bale removal depends on the ripening of the variety, resistance to viruses, and weather conditions.

In order to reduce infections, it is necessary to select tubers with a shape and color characteristic of the existing variety, reject diseased tubers, reduce inter-row cultivation that contributes to viral infection, optimal phosphorus fertilizer feeding, pre-sowing seed preparation that accelerates seedling formation and plant growth at the beginning of the growing season.

It is important to implement measures that help reduce viruses in plants, such as maintaining uniform stem thickness per hectare and achieving good plant development. Functional (non-parasitic) diseases.

These diseases arise as a result of sharp deviations from the norm of environmental factors. These changes lead to disruption of normal physiological processes of plants and the appearance of disease symptoms.


Against functional diseases, first of all, it is necessary to take measures to provide the plant with sufficient light, nutrients, water, and temperature for growth, development, and tuber formation. In the climatic conditions of Uzbekistan, the following functional diseases of potatoes are most common. Blackening of the tuber flesh occurs as a result of overheating during storage, lack of oxygen, as well as lack of potassium fertilizer during the growing season.

Nodule rust disease - when cutting infected nodules, a rust-brown spot measuring 1-20 mm appears along the cambial ring. Then they enlarge, fuse together, and the flesh of the tuber turns brown. It reduces the starch content in the tubers, deteriorates the taste and commercial appearance.

Early-seeded and late-harvested varieties harvested in mid-June are susceptible to rust disease. In some cases, 50-60% of the harvest is affected by this disease. To reduce this situation, it is necessary not to delay the sowing and harvesting of early varieties. Changes in the size and shape of nodules are the result of disruption of the water and nutrition regime. If watering is delayed, nutrients do not reach the tubers, their growth stops, some parts of the tubers age and lose their growth ability.

With irrigation, growth is restored in most tubers, especially in large ones, and some parts begin to grow. As a result, their shape changes, forming clumsy, crooked tubers. If soil moisture is insufficient, young tubers of some varieties age and lose their growth capacity. When irrigated, they sprout and produce additional stems, forming secondary small tubers that grow similarly.





Deformation reduces the commercial quality of the tubers. In some varieties, the number of modified tubers reaches 25-30% or more.

In addition, the amount of waste increases to a certain extent when detoxified tubers are removed. Infected tubers absorb nutrients from the main tubers to form stems and secondary tubers, as a result of which they stop growing and become inedible (glass-like). Due to the formation of secondary tubers, the number of small non-commercial tubers increases, and the yield decreases due to them.

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