MONILIOSIS OR FRUIT ROT DISEASE OF SEED-BEARING TREES

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Abstract. this article describes the fungi that cause molinosis rot and their distribution. The system of actions against moniliosis disease is shown.

Keywords: Hyphomycetales, fungus, mycelium, soil, flower, fruit, spots, branch, conidia.

A very common and harmful disease of seed fruits. It appears when the fruits turn brown and rot, but it can also cause the death of inflorescences and other parts of the plant. According to the systematic nomenclature of the causative agent, it is correct to call the disease Moniliosis (Fig. 108).

In the territory of the CIS states, seed fruits are affected by four types of immature fungi belonging to the Hyphomycetales order: Monilia fructigena West., M. cinerea Hon., M. mali Takahashi and M. cydonia Schell. More damage to plants by M. fructigena is noted. At first, small brown spots appear on the fruits, which quickly grow and cover the entire fruit. As a result, the flesh of the fruit turns brown, softens and completely loses its taste qualities. On the surface of the brown fruits, yellowish-white pads are formed, which represent the formation of spores of the fungus. They are located in a concentric circle and consist of a large number of conidia separated from short conidial bands in the form of a chain (see Fig. 38). Conidia are oval or round, colorless, 17.5-25x11-15 μm in size, spread by wind, rain and insects, grow by hyphal growth. The fungus develops strongly when the air temperature is 24-280C and the relative humidity is higher than 75%. Fruits are damaged by fruit-eaters, birds, moths, frost, etc. Sometimes the causative agent of the disease enters through the groove of the fruit band, but damage occurs only when there is a drop of moisture.

In moniliosis, browning of fruits is usually observed 3-5 days after damage, and spore formation is observed after 8-10 days. At lower and higher temperatures, as well as when the relative humidity of the air is low, the formation of spores of the pathogen in fruits may not be noted. In such cases, the fruit becomes waxy and has a bluish-black or black color with a shiny tint. Waxy fruits remain on or under the tree throughout the winter, and in the spring become covered with conidial

spore-forming pads and serve as the primary source of infection. In most cases, the causative agent of fruit rot produces conidial spores, so it is included in immature fungi. However, some scientists have noted its bag period in the form of apothecia with bags and bags. The shape of the bag is elongated, the tip is widened, and the base is thinned. Each sac contains 8 one-celled, elliptical, colorless sacspores (12-16.4x5-7 μm). During the bagging period, the fungus is called Monilinia fructigena Honey and is included in the Helotiales order.

In some areas, M. fructigena can cause damage to inflorescences (monilial blight) and wilting of young shoots. As a result, the flowers turn brown and wither without fruiting. In the spring, conidial spores may form on infected branches and serve as a source of infection. M. cinerea can also cause fruit rot and monilial blight on seed crops. Unlike M. fructigena, the fungus M. cinerea forms small (0.5-1 mm) ash-like pads that produce conidial spores on fruits. Monilinia mali fungus appears in early spring on young leaves, sometimes on leaf buds. At first, a red spot appears and quickly turns into a spot, covering the central vein of the leaf. Along the leaf band, the mycelium spreads to the base of the leaf ball and causes its rot. Affected limbs turn brown and bend. Gray conidial spores of the fungus are produced on the underside of the leaf, in the leaf band and inflorescence. Conidia are lemon-shaped, sometimes round, with two polar suckers, colorless, 8.1-19.8x6.5-14 μm in size. They are formed in the form of acropetal chains in dichotomous branched conidiabands. As the leaves begin to fall, the conidia are spread by wind and weeds and damage young buds. The disease can also damage the tips of young branches and unripe fruits. In summer, shiny black sclerotia (1-3 mm in diameter) are formed on the affected nodes (inside and outside), leaves, leaf band and fruit band. In the fall, they fall to the soil along with the affected organs, and in the spring, apothecia with bags and bags of spores are formed from them and serve as a source of primary infection. Haltaspores are elliptic, the tip is rounded, colorless, size 11.2-14.0x5.6-7 μm.

M. cydonia causes moniliosis in beech. Yellow-brown or almost black spots appear on the leaves. On the upper side of the leaves, a gray moldy powder appears, located mainly along the central vein. The fungus produces a chain consisting of round-lemon-shaped colorless conidia (12.5-17.5x10-15 μm). The damage caused by moniliosis is expressed by the death of inflorescences and young branches, as well as the loss of a large amount of yield (20-30%, sometimes 60-70%). Under the influence of moniliosis, fruits die not only during growth, but also during storage.

Events held in nurseries. Nurseries should be established away from orchards, which allows to limit the spread of pathogens common to young and fertile trees. In nurseries, the rotation established for this region is strictly observed. It is not allowed to include crops affected by bacterial root rot (beets, carrots, etc.) in the rotation.

Correct application of mineral fertilizers increases resistance of plants to diseases. On the contrary, their one-sided application (especially nitrogen) slows

down the development of the plant and reduces its resistance to diseases. Therefore, mineral feeding in the plantations is carried out in accordance with the agrochemical analysis of this place according to strict standards.

It is advisable to carry out all measures for the cultivation of healthy planting material free from viral and mycoplasma diseases in nurseries: obtaining virus-free clones, breeding them in isolated conditions from industrial gardens, taking cuttings only from mother nurseries free from infections. For this, plants are approved twice (in May-June and August-September). Diseased plants are destroyed, and healthy ones are specially examined in herbaceous plants in greenhouses against hidden viruses. In this way, chlorotic leaf spot viruses and several viruses can be detected.

The inoculum is prepared from the buds and petals of the investigated trees. As an indicator, resistant varieties of cucumber, succulents (Chenopodium guinoa, Ch. amaranticolar, Ch. foetidum) and tobacco (Nicotiana tabacum) plants are used.

Fruit crops with seeds can be tested by double grafting in greenhouses in winter and spring: a two-eyed cutting of the tree being tested is grafted to an apple or pear seedling, and an indicator cutting is grafted to it. If the indicator shows the presence of infection in valuable varieties, thermal therapy for plants.

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