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Study Of Plum Plant Virus Diseases

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Abstract: *The article presents an analytical review of the literature sources of diseases affecting plum and measures to combat them. According to the authors, the most common diseases on the plum are: moniliosis, klasterosporiosis, polystigmosis, coccomycosis, powdery mildew. During the autumn examination of plum plantings in the experimental garden of the laboratory "Fruit, berry and ornamental crops", the most severe lesion was noted by polystigmosis, klasterosporiosis and moniliosis.*

Keywords: *plum, disease, polystigmosis, klasterosporiosis, moniliosis, control measures.*

Olxo'ri O'simligi Virusi Va Virusli Kasalliklarni O'rganish

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Annotatsiya: maqolada olxo'ri kasalliklari va unga qarshi kurash choralariga ta'sir qiluvchi kasalliklarning adabiy manbalari haqida tahliliy sharh berilgan. Mualliflarning fikriga ko'ra, olxo'ri kasalliklari eng keng tarqalgan: monilioz, klyasterosporioz, polistigmoz, kokkomikoz, changli chiriyotgan. "Meva, berry va manzarali ekinlar" laboratoriyasining tajriba bog'ida olxo'ri ekishlarini kuzgi tekshirishda eng kuchli lezyon polistigmoz, klyasterosporioz va monilioz bilan belgilanadi.

Kalit so'zlar: olxo'ri, kasallik, polistigmoz, klyasterosporioz, monilioz, nazorat choralari.

Plum is one of the main fruit and berry crops in the private sector of the Amur region, which ranks second (after cherry) among stone fruit crops.

The main purpose of plums is to produce fruits that are widely used not only fresh, but also for various types of processing.[1]. Plum fruits are distinguished by high taste qualities, contain a lot of sugars, organic acids, mineral salts and vitamins and are important in organizing a balanced human diet.

In the Amur region, the private sector now accounts for more than 90% of the total area of gardens. Therefore, the formation and improvement of the assortment of fruit and berry crops for private gardens is an important task. About 25 types of diseases are common in the gardens of the Amur region.

Diseases sharply reduce the productivity of stone fruit crops, deteriorate the quality of fruits, and often cause the death of fruit-bearing trees, and sometimes entire tracts[4]. That is why it is important to follow preventive measures and begin the fight when the disease manifests itself.

Moniliosis, or fruit rot, is the most harmful disease, widespread almost everywhere (Fig. 1). The disease spreads very quickly, the affected inflorescences and shoots seem to be scorched by fire, which is why the disease is often called monilial burn.

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Fig.1. Moniliosis of plum

In the Far East, the causative agent of moniliosis can form a marsupial stage - a widely specialized imperfect fungus Monilia cinerea Hon. During the summer, it causes damage to shoots and branches of trees and especially fruits. A small brown spot first appears on them, which then quickly grows and covers the entire fruit. Ash-gray pads appear on its surface. Rotten fruits shrink, dry out, and some of them remain hanging on the tree until spring.

Clusterosporiasis, or hole spot, affects various organs of the tree, reducing the yield of plantings and causing premature death of trees[2]. Round light brown spots with a red-brown or crimson border form on the leaves (Fig. 2). After 1-2 weeks, the spots fall out and holes form on the leaves. On shoots and buds, the disease appears in the form of small round bright orange-red spots. Later they crack, a sticky mass (gum) is released from them, flowing down and solidifying on the shoots in the form of a glassy coating of light yellow or black-brown color. The causative agent of clasterosporiasis is the imperfect fungus Clasterosporium carpophilum Aderh.

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Fig.2. Clusterosporiasis.

Red spot, or polystigmosis - with severe damage, leaves fall prematurely, which leads to a decrease in yield and winter hardiness of plants[1]. Red spotting is usually detected in the second half of summer. Pad-shaped yellowish or light reddish spots first appear on the leaves (Fig. 3). Later they become more convex, red and shiny.

Fig.3. Polystigmosis.

The causative agent of the disease is the marsupial fungus Polystigma rubrum DC

According to a number of authors[2, 5, 7, 8]The protection system includes the following measures:

1. High agricultural technology in nurseries and mature plantings.
2. Autumn and spring blue spraying with 3% Bordeaux mixture.
3. Treatment with fungicides after flowering (2-3 times), taking into account the waiting period.
4. Collection and destruction of fallen leaves and fruits. Digging tree trunk circles and autumn plowing between rows.
5. Cultivation of resistant varieties.

Plum is one of the most valuable fruit crops in Amur gardens. Exceptional frost resistance and resistance to sunburn make the plum suitable for open-wintering crops in both amateur and industrial plantings. The high taste qualities of the fruit allow plums to be used for fresh consumption and for technical processing. The studied local varieties of plums: SVG-11-19, M-10, Ussuriyskaya, Lyudmila, Blagoveshchensky prunes, have not previously been assessed for resistance to the most dangerous diseases and tests on the effectiveness of fungicides have not been conducted. Their successful cultivation in commercial plantings is possible subject to careful disease control.

Considering the very wide distribution of clasterosporiasis, monisia and polystigmosis on plums, it is planned to identify the effectiveness of fungicides and the frequency of their treatment in the fight against a complex of diseases, and to evaluate variety-rootstock combinations for resistance to them.

Although plums are hardier than many fruit trees, they are not immune to diseases. It is attacked by viral, fungal and bacterial infections, and is harmed by parasitic insects. Let's find out what problems threaten plum trees and how to deal with them.

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Fungal diseases of plum

These diseases are easily transmitted from plant to plant. Favorable conditions for infection are high humidity and dense crown. Fungi actively spread in warm and humid summers, taking root in the tissues and creating a mycelium, they quickly destroy the tree, feeding on its fruits, leaves, and shoots. The fight against fungal diseases is carried out using special preparations - fungicides.

Coccomycosis

The fungus mainly affects leaves, less often fruits and shoots.

Causes. Occurs when there is high humidity and decreased immunity of the plant.

Symptoms Around July, spots of red-brown or purple-violet color appear on the foliage. As they grow larger, they merge. On the reverse side of the leaves there is white-pink pubescence. Having turned yellow and brown, the foliage quickly falls off. The fruits dry out before they have time to develop.

Treatment. After harvesting, the tree is treated with 1% Bordeaux mixture. 1% copper oxychloride will also work.

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Prevents coccomycosis by timely destruction of fallen leaves - the pathogen overwinters in it. In autumn, the soil near the trunk is dug up.

Rust

Appears in the middle of summer, affecting the foliage of a tree. A tree affected by rust weakens, loses its immunity and frost resistance.

Symptoms Brown spots appear on the leaves. If you do not deal with the problem, the spots turn into spore-bearing pillows. The leaves fall off, and fungi overwinter in them.

Treatment. There are no plum varieties that are 100% immune to rust, but each has its own susceptibility.

Standard prevention of fungal diseases (cleaning and burning residues, etc.) and planting varieties resistant to this disease - Anna Shpet and Renklod green - will help you avoid rust.

Brown spot

The second name of the disease is gnomoniasis. It affects many plants. You can lose up to 50% of the harvest.

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Causes. Unfavorable weather, reduced immunity. Spores spread in the usual ways for fungi

Symptoms In spring, red-brown and ocher spots appear on the foliage, purple along the edges. The foliage on both sides is covered with black dots - fungal spores. The spots, growing in size, cover the entire leaf, which curls and falls off. The fruits do not have time to ripen, become deformed and spoil

Treatment. Spraying before flowering with copper sulfate 1% (take 100 g of sulfate per 10 liters). After 2 weeks, when the tree has finished blooming, use 1% Bordeaux mixture. If the tree is heavily infected, then 2-3 weeks before harvesting the tree is sprayed again.

Prevention consists of digging up the soil, timely cleaning and destruction of fallen leaves.

Plum pockets

Excited by a vocal fungus. Plums become like bags. The fungal spores overwinter on the tree - it penetrates cracks in the bark and hides under the scales of the buds.

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Causes. Appears during prolonged cold springs accompanied by high humidity. Fungal spores, having penetrated the flowers, infect them and damage the ovaries.

Symptoms The disease deforms and spoils the fruit. Fungus grows and develops inside them. It sits in a “pocket” - hence the name of the disease. There are no seeds in the affected fruits. This type of fungus is only “interested” in fruits – it is not found on other parts of the plant. During the season, the disease appears only once: no fruit - no problem

Treatment. In autumn - sanitary pruning. Burning affected shoots in early summer. Collecting and destroying rotten fruits is done before the spores spread. For prevention - spraying with Bordeaux mixture 3%. The first is before the buds open, the second is before flowering, the third is after flowering.

If the disease is not treated, it can take away more than 50% of the harvest.

Clusterosporiasis

The fungus affects all above-ground parts of the tree. The fungus overwinters in tree wounds; it can also take a liking to shoots and buds.

Causes. The ways of spreading spores are through the air, insects, and equipment.

Symptoms Brown spots with a reddish edge are visible on the leaves. Holes appear in place of the spots. Due to the through holes in the leaves,

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cleasterosporiasis is also called hole spot. There are also spots on the shoots, the bark cracks, the foliage dries, the buds turn black, and the flowers fall off - the tree simply dies. The fruits first become covered with spots, then puff up, and gum flows from the spots. The fruits dry out and decrease in size.

Treatment. The tree needs regular spraying. At the initial stage of bud bursting, the tree is treated with 1% Bordeaux mixture. Repeat - during the appearance of buds. The next treatment is after flowering. The fourth - a couple of weeks after the tree fades. The last, fifth spraying is 3 weeks after removing the plums. In case of severe infection - with damage to the shoots, it is recommended to treat the tree again - after the leaves fall, but not 1%, but 3% with Bordeaux mixture.

Preventive measures: remove and burn fallen leaves and fruits in a timely manner, dig up the soil in the tree trunk circle, remove diseased branches, lubricate wounds.

Stone fruit moniliosis (gray rot)

The full official name of this dangerous disease is monilial stone fruit burn. But among gardeners it is more often called gray rot. The disease is caused by the

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fungus monilia, which overwinters on shoots and unharvested fruits. The disease threatens the death of the tree.

Causes. The tree becomes infected during flowering - during temperature changes. Fungal spores, penetrating through the pistil deep into the plant, gradually infect all its parts.

Symptoms The flowers and adjacent leaves dry out. The branches crack and thick sap begins to flow from them. A tree affected by moniliosis looks like it has been burnt. The shoots turn brown, wither, and thickenings appear on the bark. Fruits grow from the surviving flowers, but they are also affected by fungal spores. On plums, the disease is most manifested by fruit rot - they rot right on the branches. There are gray thickenings on the skin.

Treatment. Treatment with copper or iron sulfate 1% and Bordeaux mixture 1%. All rotten plums are destroyed, and the trees themselves are again treated with 1% Bordeaux mixture.

To prevent moniliosis, gardeners collect and burn fallen leaves, fruits and shoots, fight pests, repair wounds and damage to the bark, and whiten the trunk.

Witch's broom plum

Often called bushiness or plum growth. At the site of the lesion, all parts of the plant are affected.

Causes. The development of the disease is facilitated by damage to plants, including those caused by insect pests.

Symptoms In places where the fungus is localized, thin, sterile shoots grow en masse. Branching shoots look like brooms. On diseased shoots, the leaves become smaller and quickly fall off. At the end of summer, a gray coating appears on the leaves - these are fungal spores.

Treatment. Shoots affected by the fungus are cut off and burned. The tree is sprayed with Bordeaux mixture 3% until buds form. When the plum blossoms, spray again with 1% Bordeaux mixture. You can also treat the plum with fungicides.

Ordinary sanitary measures help to avoid the disease - timely removal and destruction of affected shoots, digging up the soil, and preventive spraying with Bordeaux mixture.

milky shine

It affects the branches - they die, and then the tree itself dies.

Causes. Transmitted from infected trees. It affects trees that are frozen in winter and those with bark damage.

Symptoms The leaves, becoming silvery and brittle, dry quickly. On the darkened bark, a fungus appears in the form of plates of different colors. These formations are firmly attached to the bark, their width is 3 cm.

Treatment. Absent. It is necessary to increase the frost resistance of the plum, insulate it for the winter, whiten the trunk, and lubricate the cuts with garden varnish.

It is recommended to buy seedlings from trusted sellers - in reliable nurseries, and destroy infected plants in a timely manner.

Fruit rot

The symptoms are similar to moniliosis (gray rot), but only affects fruits – those that have damage.

Causes. The fungus spreads intensively in damp, rainy weather.

Symptoms Brown spots appear on plums, quickly growing and covering the entire surface of the fruit. Symptoms of rot appear in July, when plums are pecked by birds and eaten by insects.

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