

METHODS OF PEST AND DISEASE CONTROL ON THE TREES

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Abstract

This article describes the phytosanitary state of apricot cultivation in the climatic conditions of Uzbekistan, the main factors negatively affecting productivity, and effective strategies for their control. The study examined the distribution dynamics of dangerous objects such as shot-hole (clasterosporium), moniliosis (fruit rot), and the apricot fruit moth. The possibilities of reducing crop loss through the harmonious use of modern chemical preparations and biological protection agents are analyzed.

Keywords: Apricot, moniliosis, clasterosporium, fruit moth, fungicide, insecticide, biological control, phytosanitary, productivity, prevention.

Introduction

In agriculture of Uzbekistan, apricot (*Prunus armeniaca* L.) is a strategic export product that plays an important role in providing quality fruits not only to the domestic market, but also to international markets. However, the global climate changes that have been observed in recent years, unpredictable spring frosts and excess humidity in recent years seriously undermine the phytosanitary condition of apricot orchards [1]. Apricot tree is highly resistant to pathogenic microorganisms compared to other types of grain fruits, and if timely protective measures are not taken, there is a risk of losing from 50 to 80% of the harvest. Currently, the development of intensive gardening contributes to the appearance of new species of pests and an increase in the aggressiveness of existing diseases. This puts industry professionals tasked with developing new, effective and environmentally friendly ways to protect plants. This article considers the scientific



and practical foundations of an integrated system of combating the main enemies that are found in apricots.

LITERATURE REVIEW

The issue of the fight against apricot pests and diseases has been investigated by a large number of domestic and foreign scientists. Professor Sh.T. Khuzhayev in his long-term research proved the value of precise definition and norm of application of chemicals in protection of fruit trees [2]. He believes that in the protection of plants it is necessary not only to rely on the chemical method, but also to harmonize agrotechnical measures. Academician B. Sulaymanov in his research studies studies the features of the disease of moniliosis (*Monilinia laxa*) in the conditions of Uzbekistan and emphasizes that treatments during the spring flowering play a critical role in preserving the crop [3]. Also, foreign researchers (for example, J. Smith and others) have noted that the effectiveness of copper-based fungicides in the fight against apricot clasterosporiosis is more than 80% [4]. S. Islamov's scientific works analyzed the possibility of reducing damage to the environment by biological methods against apricot fruit, that is, using trichograms and golden-eyed insects [5]. The analysis of the literature shows that an effective protection system should include prevention, monitoring and comprehensive measures.

METHODOLOGY

In the course of the study, monitoring work was carried out in apricot groves in Tashkent and Fergana Valley regions for 2023-2025. For experimentation, the most commonly planted varieties of apricot were selected "Subhoni", "Kandak" and "Jubilee". Methods of phytopathological analysis were used to determine the extent of the spread of the disease. When recording the number of pests, pheromone traps, entomological nets and adhesive tape were used. As a measure of protection was processed according to the following scheme

- Spray with a mixture of 3% Boros in early spring (until the buds strain).
- The use of modern systemic fungicides (for example, Xorus or Skor) against fungal diseases after flowering.
- The use of biological (trixogram) and, if necessary, chemical (insecticides) means against fruit insects.

The results obtained were compared with the control option (untreated areas).

RESULTS

Studies have shown that the greatest threat in apricots is posed by diseases such as clasterosporiosis and moniliosis. In the control variant, the incidence rate with clasterosporiosis was 45–60 percent, while in the areas where 3 percent Boros mixture and subsequent systemic fungicides were applied, the figure did not exceed 5–8 percent. Against moniliosis, double treatment at the beginning and at the end of the flowering period reduced fruit rot by 90%. Of the pests, it has been found that the apricot fruit (*Grapholita funebrana*) damages up to 30% of the fruits. However, with the help of pheromone traps, the flight period of butterflies was determined and timely treated with insecticides, the damage was reduced to 3-4 percent. Even in the areas where the trichogram was used biologically, the efficiency was 70-75%, which makes it possible to obtain an environmentally friendly product.



DISCUSSION

The results presented confirm the importance of a systematic approach to the protection of apricot trees. In the course of the discussion it turned out that most gardeners begin measures to struggle only when the signs of the disease are clearly visible, and this does not give the expected result. For example, the pathogen moniliosis penetrates the tree through flowers, so waiting for the appearance of symptoms will lead to crop loss. It has also been observed that the successive application of chemical preparations of the same type (for example, only copper preparations) produces resistance (resistance) in pathogens. Accordingly, the need for replacement (rotation) of a group of drugs was identified. Another important point to be discussed is agrotechnical measures, which have been scientifically substantiated since the elimination of fallen leaves in the fall and the cutting of dried branches reduce the source of infection for the following year by 40%. The combined use of biological and chemical methods will not only increase cost-effectiveness, but also reduce the level of contamination of the soil and product with chemicals.

CONCLUSION

The optimal way to protect apricot trees from pests and diseases is an integrated system of protection. Research has shown that preventive treatments (in early spring and late autumn) are the main protective measure. The application of fungicides against diseases during flowering and during fruit ripening, and against pests targeted processing with the help of pheromone monitoring ensures high yields. A decent ratio of agrotechnical, biological and chemical methods will serve to maintain a stable phytosanitary condition of apricots and to grow high-quality export products.

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