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Eureka Journal of Agricultural Science & Bio-Innovation (EJASB)

ISSN 2760-4969 (Online) Volume 2, Issue 2, February 2026

https://eurekaoa.com/index.php/7

MAJOR DISEASES OF HAZELNUT (CORYLUS AVELLANA L.) IN THE CONDITIONS OF UZBEKISTAN AND MEASURES FOR THEIR CONTROL

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Abstract

Hazelnut (Corylus avellana L.) cultivation in Uzbekistan is increasingly expanding due to its high nutritional value and economic significance. However, fungal and bacterial diseases are widely distributed and have a significant negative impact on plant growth, development, and yield. This study examines the major diseases affecting hazelnut under Uzbekistan's climatic conditions, including powdery mildew (Phyllactinia guttata), leaf spot (Gloeosporium

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coryli), bacterial blight (Xanthomonas arboricola pv. corylina), and root rot (Armillaria spp.). Disease symptoms, causes of spread, and effects on productivity are analyzed. Recommendations for effective control measures, including preventive practices, agrotechnical interventions, and chemical treatments, are provided. The implementation of a scientifically based protection system ensures sustainable development and high yield of hazelnut plantations in the region.

Keywords: Hazelnut, disease, plant, control measures.

Introduction

Achieving high and stable yields in hazelnut cultivation primarily depends on effective protection of plants from pests and diseases. Pests damage hazelnut leaves, shoots, flowers, and fruits, leading to a reduction in both yield quantity and quality. Therefore, timely identification of harmful organisms and the application of scientifically based control measures are considered highly relevant. In this regard, the Resolution of the President of the Republic of Uzbekistan No. PQ-344 dated September 30, 2024, particularly Appendix 3, outlines tasks for the establishment of fig, hazelnut, and olive plantations during 2024–2027, including the planting of 1 million fig, olive, and hazelnut seedlings in household plots across the country during 2025–2028.

Hazelnut (Corylus avellana L.) is one of the valuable nut crops, distinguished by its high nutritional value and economic efficiency. In recent years, special attention has been paid to expanding hazelnut production in Uzbekistan. However, the spread of various diseases in hazelnut plantations has negatively affected plant growth, development, and productivity. Therefore, studying hazelnut diseases and developing effective control measures against them is of great scientific and practical importance.

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Materials and Methods

Hazelnut plants cultivated in the foothill and relatively high-humidity regions of Uzbekistan were selected as the objects of the study. Disease identification was carried out based on visual observations, phytopathological analysis, and a review of relevant scientific literature.

Under the climatic conditions of Uzbekistan, the major diseases widely distributed in hazelnut (Corylus avellana L.) include:

Powdery Mildew (Phyllactinia guttata). Powdery mildew is characterized by the formation of a white, powdery coating on hazelnut leaves. The disease mainly develops during the summer under conditions of high humidity and elevated air temperatures. As a result, the photosynthetic activity of leaves decreases, leading to a reduction in yield.

Control measures. Removal and destruction of infected leaves, and application of sulfur-based and modern fungicides.

Leaf Spot (Gloeosporium coryli). Brown and black spots appear on the leaves, and in cases of severe infection, the leaves dry out and fall prematurely. This disease negatively affects the overall physiological condition of hazelnut plants.

Control measures. Strict adherence to agrotechnical practices and treatment with copper-containing preparations.

Bacterial Blight (Xanthomonas arboricola pv. corylina). The disease affects leave, shoots, and young branches. Infected tissues darken and dry out, and in some cases, entire shoots may die.

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Control measures. Sanitary pruning, removal and destruction of infected plant parts, and the use of bactericidal preparations.

Root Rot (Armillaria spp.). This disease mainly occurs in heavy-textured soils with excessive moisture. Damage to the root system may result in plant wilting and death.

Control measures. Improvement of drainage systems, planting of healthy seedlings, and careful site selection.

Conclusion

In Uzbekistan, hazelnut plants are primarily affected by fungal and bacterial diseases, which significantly reduce yield. The integrated use of preventive measures, agrotechnical practices, and chemical protection methods has proven to be highly effective in controlling these diseases. A scientifically based protection system ensures the sustainable development and productivity of hazelnut plantations.

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