

PESTS OF ORNAMENTAL TREES OF THE LEGUMINE FAMILY (Leguminosae) IN THE REPUBLIC OF UZBEKISTAN

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Abstract

This article describes in detail the levels of occurrence, bioecological features, and also the distribution of pests in ornamental trees belonging to the legume family.

Keywords. Ornamental trees, biocenosis, pests, aphids, scale insects, Khrushchev, mole crickets, fall armyworm.

Introduction

In the Republic of Uzbekistan, the issue of nature conservation and environmental improvement has become one of the leading directions of state policy. Therefore, in recent years, much attention has been paid to plant protection. The plant world is considered the most important resource in human life, and when used wisely, it becomes an inexhaustible source of raw materials. Plant diversity is an important source of life, an actual and potential resource for all countries. Plants are important in the sustainable development of society, in solving its economic, cultural, aesthetic, and environmental needs.

Cities with more plants have less dust and other mechanical and chemical compounds in the air. In densely populated areas, landscaping should occupy 40% of the area. In schools and kindergartens it should be 50%, in hospitals 60%. In rural areas, there should be at least 100 m² of orchard near each yard. An abundance of plants causes more oxygen in the air, improves mental health and even improves vision. It also maintains air purity, soil moisture, fertility, the presence of a certain moisture in the air, and an increase in the number of light ions.

Therefore, when landscaping cities, usually 70% of the area is allocated for landscaping, that is, avenues, parks, squares, etc. [8]. The most important task of humanity is to preserve and protect the plant world, increase the number of medicinal species, and study beneficial aspects for humans through scientific research. Plant diversity is an important source of life, an actual and potential resource for all countries. Plants are important in the sustainable development of society, in solving its economic, cultural, aesthetic, and environmental needs.

The G20 summit, held in Rome on October 30-31, 2021, adopted a declaration of commitment to plant 1 trillion trees by 2030. The declaration noted that "Trees are one of the main means of combating climate

change” [6]. At this point it should be noted that President Sh.M. Mirziyoyev paid great attention. In particular, the Decree of the President of the Republic of Uzbekistan dated December 30, 2021 “On measures to accelerate landscaping work in the Republic and more effectively organize the protection of trees” [2]. It is noteworthy that the national project “Green Space” was developed on the initiative of President Sh.M. Mirziyoyeva.

In accordance with it, specific tasks are identified to improve the environmental situation and air purity in cities, regional centers and populated areas. As part of this project, it is planned to plant 200 million trees and shrubs per year. Currently, 8% of the territory of our republic is greened; it is planned to increase it to 30% [1]. 27 types of tree seedlings were proposed for planting, based on the climatic conditions of the regions of Uzbekistan. In particular, the project plan includes planting chestnut, oak, Japanese saphora, alder, paulownia, poplar, acacia, maple, mulberry, linden, walnut, quince, grapes, Crimean pine and Virginia juniper.

Taking into account the fact that in the climatic conditions of our republic, trees are severely damaged by pests and diseases in urban and densely populated areas, and the possibilities of using highly toxic insecticides are limited from an environmental point of view, scientific research aimed at solving the above problems has an important scientific impact when carrying out work and practical significance. It was noted that 30-35% of seedlings died as a result of pest damage to the root part of the trees.

Based on the results of their research in 2022-2024, 47 species belonging to 7 genera and 21 families were identified as phytophages in ornamental trees. The most numerous order is Homoptera, making up 58% of the total number of species. The share of representatives of the Lepidoptera family is 18.7%. The number of representatives of other categories ranges from 2.1 to 11%.

Species characteristic of tropical and subtropical regions appeared, first identified in the gardens of the Southern Coast of Crimea. These are *Cydalima perwspectalis*, *Chrysolina americana*, *Cameraria ohridella*, *Aphis nereii*, *Dacus oleae*, *Iceria purchasi*, *Acizzia jamatonica*, *Ceroplastes japonicus*. and *Corynthucha ciliate*. There are 23 widespread and harmful species, of which invasive species predominate, which should be taken into account when developing protective measures [12].

Phyllonorycter robiniella is native to North America. For the first time in the Swiss part of Europe, the white acacia moth was registered in 1983, after which it spread to Austria, Croatia, Slovenia, Romania, Poland, Hungary, Ukraine and other countries. The larvae feed on the leaves of white locust (*Robinea pseudoacacia*) and cause great damage. In some years, this damage can be very large, since all acacia leaves will be completely damaged.

Table Occurrence levels of various pests on ornamental trees

No	English name	Latin name	Occurrence
1	Acacia or alfalfa aphid	<i>Aphis crassivora</i> Koch.	+++
2	Acacia false shield	<i>Parthenolecanium corni</i> Bouche.	++
3	California scale insect	<i>Diaspidiotus Perniciosus</i> Comst.	++
4	Wrinkled bark beetle	<i>Scolytus rugulosus</i> Muell.	++
5	Turanian hairy barbel	<i>Turanium pilosum</i> Rit.	+++
6		<i>Turanium scabrum</i> Kr.	+++
7	Urban barbel	<i>Aeolesthes sarta</i> Sols.	+++
8	Mustachioed Namangan	<i>Xylotrechus namanganensis</i> Heyden.	++

9	Winter scoop	Agrotis segetum Den.et Schiff.	+++
10	Exclamation owl	Agrotis exclamationis L.	++
11	Eastern Prairie Owl	Mythimna separata Walker.	+++
12	Clickers	Elateidae	++
13	Mole cricket	Gryllotalpa gryllotalpa L.	+++
14	Junebug	Polyphylla adspepsa Motsch.	++
15	Junebug	Melolontha afflicta Ball	+++
16	Junebug	Melolontha melolontha L.	++
17	Junebug	Polyphylla tridentata Reit.	+++
18	Junebug	Polyphylla alba Pall.	+
19	Mole cricket	Gryllotalpa unispina Sauss.	+++

Conditional signs: + less; ++ average; +++ massively.

This weakens the trees, they lose their decorative properties and cannot fully perform their landscaping function. A variety of root system pests are present in tree nurseries of the Leguminosae family, the levels of occurrence of which are listed below. Among the above pests, it is noted that the harmfulness of mole crickets is higher than that of other pests [7].

In addition, during research in 2022-2023, 3 species of homoptera were found in the buds and leaves of ornamental trees - *Aphis craccivora* Koch., *Diaspidiotus perniciosus* Comst. and *Parthenolecanium corni* Bouche., 5 species of stem pests; *Scolytus rugulosus* Muell., *Turanium pilosum* Rit., *Turanium scabrum* Kr., *Aeolesthes sarta* Sols., *Xylotrechus namanganensis* Heyden., 3 species of cutworm, *Agrotis segetum* Den.et Schiff., *Agrotis exclamationis* L., *Mythimna separata* Walker, 8 species of root pests: click beetles and mole crickets (table).

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