



# Phytomonitoring Of Harmful Insects On Nut Plantations In Uzbekistan

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## ABSTRACT

The article provides information on the distribution and development of lush bulbs in the mountain and foothills of Samarkand and Kashkadarya regions. Bioecology of pests, such as big nuts in natural and cultivated walnuts and small walnuts.

**Keywords:**

Greens, pests, walnuts, small walnuts, bioecology.

## Introduction.

The production and sale of walnuts is one of the most profitable areas of agricultural production. Over the past 10 years, walnut production has increased by 39%, and its sales in 2016 amounted to almost US \$ 33.2 billion. This indicator was 2.4 times higher than in 2006 [1]. When growing walnuts, the issues of breeding and productivity of varieties, agricultural technology, as well as measures to combat diseases and pests are relevant.

## Research methods.

Observations and entomological calculations were carried out according to the method of V. Yakhontov, G.Ya. Bei-Bienko, A.A. Zakhvatkin, S.A. Murodov, the density of pests according to the method of Sh.T. Khozhaev [4]. The degree of harmfulness was determined by the method of V.I. Tansky. Monitoring was carried out to identify pests in natural and cultivated walnut plantations.

## Research results and their analysis.

When observing natural and cultivated walnut plantations, it was generally noted that

the species and number of pests was relatively low. This is due to the specific biological properties of the walnut tree and the natural natural conditions of its growth.

In natural and cultivated nut plantations of Uzbekistan, such pests are mainly found as nut worm (*Sarrothrypus muscutana* Ersch.), Apple moth (*Cydia pomonella* L.), large nut aphid (*Panaphis juglandis* Goeze), walnut aphid (*Chromaphis juglandicola* Kalt) and spider mites (*Tetranychus urticae* Koch.) (3).

Walnut aphids (*Aphididae*) are found in almost all walnut plantations in Samarkand and Kashkadarya regions. Trees contain large walnut aphid (*Panaphis juglandis* Goeze) and walnut aphid (*Chromaphis juglandicola* Kalt.). They only infect walnut trees.

The vital activity of walnut aphids takes place on the leaves of the tree and they feed on tissue fluid. Young seedlings are especially strongly affected, as a result of which, leaves fall and dry out.

The large nut aphid (*Panaphis juglandis* Goeze.) Is located on the upper side of the leaves, around the central vein of the leaf in the form of a line, in the form of an elongated

colony. Therefore, in many literatures they are called leaf surface aphids [2]. The nut aphid (*Chromaphis juglandicola* Kalt.) Feeds on the cell sap on the underside of the leaf. They are also called aphids on the underside of the leaf. In many cases, walnut growers do not pay much attention to these pests.

The size of the large walnut aphids is from 3.5 to 4.0 mm, lemon-colored, the head and thoracic part of the winged insect are black. The length of the walnut aphid is up to 1.5-2.0 mm, light yellow, white larvae [2].

Usually, aphids lay eggs in leaf axils, on flower buds, their number depends on the age, the number of young shoots and the phases of tree development. The initial appearance and development of walnut aphids is influenced by the temperature and humidity of the air in March and April. In the southern regions of the country, the air temperature in the mountainous and foothill zones is slightly lower (on average +3 + 4 °C), which somewhat inhibits the development of walnut aphids compared to the plain zone. The average air temperature for the development and reproduction of aphids is 18-25 °C, and the humidity is 60-75%.

It was found that the most optimal temperature for aphid breeding is 22-27 °C. A sharp decrease in the appearance of larvae was noted at temperatures above 35 °C. A decrease in temperature below 10 °C, an increase in precipitation and strong winds negatively affect the development and reproduction of aphids. At the same time, aphids located on the upper side of the leaves bear great losses. During the period when the air temperature sharply rises (end of May, June, July, August) in the walnut plantations of the Samarkand region, a sharp decrease in the number of walnut aphids was observed. In this case, aphids enter the summer dormant period. Morphological and physiological changes take place in their organisms, and adaptation to unfavorable environmental conditions is observed in its bioecology. At this time, their vital activity takes place in the cool parts of the tree. In the mountainous and foothill zones of the Urgut district of the Samarkand region in the

first half of September, the death of aphids in walnut plantations was observed, and in the lowland zones this situation was observed in November. It was noted that aphids were also observed on walnut plantations in the Zhambai district of Samarkand oblast at the end of November.

Walnut aphids are considered adapted to the biological and morphological characteristics of the walnut, which form their development cycle in accordance with the growth and development of the tree. With the formation of primary leaves of the walnut, excretion of the aphid egg is observed. Aphid larvae initially appear and feed on the sunny side of the branches, mobile larvae adhere to the central roots of the leaf surface. They often change their food habitat. This creates the opportunity for them to defend themselves against entomophages. Aphids breed, females fly to other trees and suck young leaves in the form of colonies. On large leaves, due to dense leaf tissues, aphids are located in rare colonies. Usually, winged females of aphids are yellow before linking, and after that they are dark yellow in color. It was noted that in the month of September-October, aphids are dark yellow and reddish-yellow in color. The life activity of females is longer than that of males.

It was found that in the foothill and mountain conditions of the Urgut region of the Samarkand region, nut aphids give from 10 to 15 generations.

## Conclusions.

In the agrobiocenosis of natural and cultivated nut plantations, the distribution, number and harmfulness of aphids is of great importance. Specialized pests - the large nut aphid (*Panaphis juglandis* Goeze) and the nut aphid (*Chromaphis juglandicola* Kalt.) Are widespread in the mountainous and foothill regions of the Samarkand and Kashkadarya regions. Species of aphids differing in bioecological characteristics cause serious harm to the growth and development of the walnut tree. Their distribution and development, as well as their number, is

influenced by the climatic conditions of natural regions - air temperature, humidity and wind speed. When developing aphid control measures, it is important to consider the bioecology of aphids in each region.

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