



ECOLOGICAL - GEOGRAPHICAL DISTRIBUTION OF APHIDS (HOMOPTERA APHIDINEA, APHIDIDAE) IN THE FERGANA VALLEY

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Article history:	Abstract:
Received: 2 nd April 2021 Accepted: 22 th April 2021 Published: 8 th May 2021	This article describes the most common aphid insects in the Fergana Valley. It also provides information on their distribution, damage, ecology and geographic distribution, as well as their location in vertical regions.
Keywords: gardening, cotton growing, Central Asia, aphids, species composition, biology, medicinal, melliferous, landscape, vertical belt, air humidity, cuticle, cherry, mesophyll.	

INTRODUCTION

Fergana Valley is an important economic region for horticulture and cotton growing in Central Asia. Aphids cause significant damage to the industrial, melons and fruit crops cultivated here, sharply reducing the yield and quality of products,

In cultural landscapes, despite the protective measures undertaken, the harmfulness of aphids still remains quite high. In natural cenoses, aphids are one of the most common groups of insects, Hence the importance of studying their species composition and biology in knowledge of the aphidofauna of the Fergana Valley and, in particular, in the development of control measures and increasing the effectiveness of defense systems against these pests.

MAIN PART

Along with this, the wide distribution in the studied region of formations of medicinal, melliferous, essential oil and other plants raises the problem of protecting them from the harmful activity of aphids,

Cognition of the mechanism of control of the number of aphids in agrocenoses is inextricably linked with the study of the ecological characteristics of species, especially harmful to agricultural crops.

The solution to these problems is impossible without studying the fauna of these insects, their distribution over vertical soil-climatic plant zones, from the study of the geographical distribution of species, knowledge of the formation of individual groups, as well as the solution of other issues. The theoretical interest of the conducted studies is also due to the fact that the aphid fauna of the Fergana Valley is located at the junction of the aphid faunas of Central and Central Asia, the Hindu Kush, and, to a certain extent, the European-Siberian region.

The fauna and biology of aphids in the Fergana Valley, their eco-long-geographical distribution over landscape zones and vertical belts have been sufficiently well studied by A. Mukhammadiev and M. Akhmedov, M. Yunusov. The distribution of aphids on the territory of the Fergani Valley reflects their ecological features: attitudes towards temperature and humidity, soil characteristics, phytocinosis and other features of landscape zones and belts.

The role of the Fergana Valley aphids as an important component of the entomo fauna of natural and cultural cenoses is shown. A number of new species and subspecies of aphids have been identified. Species of aphids previously unknown in the fauna of Central Asia have been discovered, and a number of unknown morphs of aphids have been identified. It was stated that the aphid fauna of the Fergana Valley is a peculiar component of the aphid fauna of Central Asia. It is shown that the improvement of biological systems for fighting the most harmful aphids should be based on the knowledge of the biological and ecological characteristics of widespread species. On the example of aphids, the main directions of management of the harmful entomofauna of typical agrocenoses of the region are proposed.

In turn, the habitat of aphids can be determined by the ecological characteristics of plants with which these species of aphids are primarily associated. Let us consider some of the main landscape zones and vertical belts, characterized by a certain set of ecological species of aphids adapted to them.

Low-grass semi-savanna with early development of ephemeroïd plants and semi-shrubs are characterized by the presence of xerophilous aphid species that have adapted to high temperatures, dry air and moisture deficit in

fodder plants. These are *Masrosiphoniella ferganensis*, *Asyrthosiphon mordvilkovi* Nevs, *Sitobion avenae* F. on herbaceous plants, *Brachyunguis lycii* (Nevs) B. *harmalae* Das. On shrubs.

Sandy hyperxerophilic light forests adjoin the savanna floor, bordering on the zone of tugai vegetation of natural valleys. They are characterized by the species *Brachyunguis tamaricophilus* Wevs., *Xerophilaphis saxaulice* Wevs, *Brevicorynella quadrimfuculata* Wevs. etc. Species belong to the typical inhabitants of the tugai.

Lambraaphis pruinosa Narz. On turanga poplar, *Capitophorus elaeagni* Guere, on sucker, *Aphis fabae* Scop, on kend kra, etc. For the foothill steppes and the zone of arid woodlands (altitude 800-1200 above sea level), semi-xerophilous aphids are characteristic, possessing, to varying degrees, developed xeromorphic signs, sclerotization of the thoracic and abdominal segments, and a brilliant cellular sculpture of the integument. Aphids *Brachycaudus pilosus* (Mordv.ex Nevs.), Living on semi-xerophilous almonds and cherries (*Amygdalus*, *Cerasus*), of the *Prunoidae* group have a strongly sclerotized cuticle, shortened appendages of the body *Brachycaudus Shaposhnikovii* Warz lives on leaves and a lesser shoot of curls sclerotization. *Aphidura bozhkoae turanica* (Ahm.ex Junus.,) Inhabiting the warty cherry (*Cerasus verrucosa*) is the most characteristic of the aphid complex named. A high degree of sclerotization in combination with the cellularity of the cuticle and other features ensure the elimination of aphids in conditions of a lack of moisture in the air and in fodder plants. The formation of this complex of aphids in the arid light forests of Judas in parallel with the xerophilisation of their food plants in the arid conditions of middle-earth, although by origin they are mesophilic. It can be assumed that during the development of the foothill arid zones of the Fergana Valley for rainfed gardening some species of aphids will switch to mesophilic stone fruit.

The most diverse species composition of the complex of aphids living in the vertical belt or in the zone with broad-leaved mesophilic vegetation within the altitudes of 1200-1400 m (a.m.).

This zone is characterized by moderate temperature and high humidity of air and soil, the amount of precipitation reaches 1 000 - 1200mm per year, the winter period is long (December - March). Aphids *Aphis tabae* Goot., *A.rumici* L., *A.gossypii* Glov. *A.labumi*.Kalt., *Brachycandus cardui* L. *Dysaphis affinis* (Mordv.), *D.crataegi* (Kalt.), *D.microsiphon* (Nevs.) *Anuraphis subterranean* (Walk.), *Myzus amygdalinus* Nevs., *Impatiens Kalatinum balsamines* (.) *Titasiphon dracunculi* Nevs. They live only on mesophilic trees, shrubs and herbaceous vegetation. Some species, due to an increase in ambient temperature, can change their habitat, occupying ecological poverty on the roots of their forage plants. These are *Dysaphis narzykulovi* Shan., *D. cousiniae* Narz., But some representatives of this complex are exclusively root, in particular. *Dysaphis emicis* (Mim.) *Trame troglodytes* Heyd., *T.radicis* Kalt. and others. It should be noted that many species of aphids from this belt penetrate for the second time into the zone of cultivated agriculture and become serious pests of agricultural plants and ornamental plantings.

The adaptability of aphids to the ecological conditions of vertical belts makes it possible to predict their development during the development of mountain slopes and low mountains.

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