



Dependence of Vertical and Horizontal Distribution of Juice in Nature on Soil-Climate Conditions

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ABSTRACT

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Aphids play an important role in nature and human life. Nature these insects, which are a major component of landscape entomocenoses, have become pests of crops grown in cultivated cenoses. The specificity of soil-climatic conditions and vegetation cover in the vertical regions of South Fergana is reflected in the composition of the fauna of algae distributed at different absolute heights, as well as in their biological and ecological properties.

KEYWORDS: Vertical Distribution, Horizontal Distribution, Entomocenosis, Insect, Cultural Cenosis, Pest, Absolute Altitude, Algae Fauna, Aphidofauna, Xeromorph, Mesophilic.

INTRODUCTION

The vertical and horizontal distribution of sap depends on the characteristics of soil-climatic conditions and the composition of the vegetation cover.

Soil-climatic conditions affect the development and other biological properties of aphid. Like other insects, the common species of aphids live in sharply changing climatic conditions as they cover several natural and vertical regions. As you move south, the amount of heat increases, the humidity decreases, and the influence of other factors changes. Increased heat and hydrothermal a decrease in the coefficient causes the sap to move to moist and shady cool places. Widespread species of aphids migrate south from different climatic conditions, respectively, settling in different natural zones and regions. The distribution of aphid across vertical regions is inextricably linked to soil-climate, vegetation cover, developmental modification, and other biological characteristics. When comparing soil climatic conditions in the upper part of the foothills of the western Tyon-Shan and in the plains of the northern latitudes, as well as the development characteristics of aphids along the vertical zones according to vegetation, the main difference (relative to sea level) is altitude.

THE MAIN PART

AA Muhammadiyev studied the influence of soil and climatic conditions on the distribution of the juice of East

Central Asia. During his research, he studied the specifics of the distribution of algae species in the lowland, foothill, mountain, middle mountain, high mountain regions, as well as the distribution of algae in the biotopes of different regions.

In eastern Central Asia, the optimal hydrothermal coefficient corresponds to the heights of the mesophilic broad-leaved forest zone of the middle mountain region.

Widespread species of aphids migrate south from different climatic conditions, respectively, settling in different natural zones and regions. This is G. Ya. Bey-Bienko on zones and vertical regions correspond to the law of exchange; as the aphids move from northern areas to the south, the xerophilous stations are replaced by mesophilic, even hygrophilous stations, rising vertically upwards. Therefore, northern species of European-Siberian origin are widespread in temperate zones, occurring in the upper reaches of the foothills and in the middle mountains in eastern Central Asia.

In order to determine the organic dependence of the distribution of aphids on the vertical zones on the soil-climate, vegetation cover, developmental modification and other biological features, A.A. Muhammediyev co-founders analyzed the time of emergence of morphs, as well as the number of generations of boreal or common species in the north and south. These issues have been studied by comparing northern species in relation to changes in vertical

regionalization in Central Asia and other southern regions [3].

The anthropic and middle mountain vertical regions are the richest in aphidology, with a unique aphidofauna composition. In the upper regions, aphids are declining. The foothills of the Central Tyon-Shan are comparable to other regions bordering it in terms of species composition. In the central region of Europe-Siberia and orographically, the soil-climate lags behind in development under the influence of conditions and absolute altitude of the elements of the forests of the middle mountain Far East of Tyon-Shan, their development varies by 20-25 days. The middle mountain region was found to be more suitable for the feeding and development of algae than other regions. In the rocky and grassy mountain deserts of the upper mountainous region of Central Tyon-Shan, the development of aphids has been observed in connection with the formation of vegetation [5].

As the aphids rises along the vertical zones, the ecological shelves in their forage plants separate [1]. Due to the decrease in sap in the upper regions, their degree of damage and changes in the plant (leaf wrinkling, etc.) are less than in the lower regions. Some changes are noticeable in the color of the juices. The anthropic and middle mountain vertical regions are the richest in aphidology, with a unique aphidofauna composition. In the upper regions, the number of aphids decreases. The foothills of central Tyon-Shan are poorer in terms of species composition than other regions bordering it. Elements of the Euro-Siberian and Far Eastern forests in the central mountainous region of the Central Tyon-Shan lag behind in development under the influence of orographic, soil-climatic conditions and the development of absolute altitude, varying by 20-25 days. The middle mountain region is more conducive to the feeding and development of algae than other regions. Rocky and grassy mountains of the high mountainous region of Central Tyon-Shan In the deserts, aphids develop depending on the herbaceous formations. The vertical regions of the central Tyon-Shan have a peculiar effect on the change in the morphological features, fertility and other characteristics of the sap.

As it rises from the lowlands to the middle mountains, the diversity of the faunal composition of the glaciers increases. In the high mountain region it is extremely impoverished; the lack of afidofauna representatives is due to the harsh climatic conditions of the area. Xeromorphic and mesophilic species of more algae are typical for lower plains.

The wider the horizontal distribution of the animals, the wider the distribution along the vertical heights. The correctness of this law is confirmed by the following species of aphids, common in horizontal latitudes and at different absolute heights: *Cinara tujifilina*, *Aphis rumicis*, *A.craccivora*, *Macrosiphum rosae*.

The opposite of this pattern is observed in the distribution of some species of aphids along the vertical regions of the South Fergana region. Species with narrow (horizontal) habitats include *Cavariella bunii*, *Aphidura turanica*, *Acyrtosiphon glaucii*, *Brevicorine loricerina*, *Hyadaphis aizenberg*, *Avicennina spiraecola*, *Rhopalomyzus alaica*, *Rh. ferganica*, *Rh. tianshanica*, *Semiaphis longissima*, *Acyrtosiphon rubi*, occurs in the middle mountain region of the Alay mountain range. The distribution of these juices in other vertical regions has not been noted.

From the bottom up, the characteristics of the biology and ecology of aphids change.

Our research on the impact of soil and climatic conditions on the biology and distribution of walnut sap was carried out in different regions of South Fergana.

The territory of southern Fergana differs from the valleys by its soil and climatic conditions. In particular, the mechanical composition of rocky, sandy, meadow soils in the foothills of the foothills, as well as their high permeability, distinguishes them from the soils of other regions. The southern foothills of the valley are characterized by light gray, weak soils with low humus content. Newly developed, low-salinity grassland soils and soils prone to light mechanical wind erosion are widespread in this area. Therefore, on the northern slopes of the Alay Mountains, in the foothills and on the foothills, irrigated lands are 3-5 times more irrigated than in the central regions in order to get a rich harvest on cultivated soils, which are mostly allocated for agriculture. This, in turn, ensures a high level of relative humidity in the area. Soil-climatic conditions in southern Fergana cause the peculiar development of phytophagous insects and entomophages, which feed on agricultural crops. In particular, the development of 2 species of walnut aphids in Southern Fergana, its distribution across the region, the degree of adaptation to the environment, depends on the physiological state of the food plant, the soil and climatic conditions of the region.

Greek walnut forests are formed under certain physical and geographical conditions. Such conditions exist in mountain cliffs, valleys of mountain rivers, cold air currents - caves sheltered from cold winds, in areas far from the effects of cold deserts. Greek walnuts to the favorable conditions of Central Asia - annual temperature - 8.9-11.6°C; average monthly temperature (20.5-24.5°C in July; from -10 to -5°C in January); average maximum temperature - 26.0-31.3°C, absolute maximum - 36-40°C; average air temperature - 4,7-8,9°C, absolute minimum - 23-30°C; average annual relative humidity - 47-53%; Relative humidity in July and August (drought) can decrease by 20-25%. Annual forests can also be found in areas with an annual rainfall of 912-1427 mm. Nuts do not prefer soils, but grow better on dark brown, dark gray, typical gray soils [7].

As can be seen from the above, the soil-climatic conditions of the environment play an important role in the development of alfalfa. This, in turn, has a significant effect on the development and distribution of nutrients in it.

The climate of South Fergana is dry, continuous, hot summers, moderate winters, short springs. The weather changes frequently, sometimes it heats up, sometimes it cools down. The temperature in April can sometimes rise to + 27-36°C, and sometimes fall to -3, -5°C. Such frequent changes in the spring weather have a negative effect on early flowering plants.

In the lowlands, the average temperature in January is 0-5°C, in July the average is + 28,8°C, and the average annual temperature is + 14,6°C. The warm days last from May to November.

The average annual temperature in the foothills is +11.1°C (average temperature in January is 2.6°C, average temperature in July is + 24,7°C).

The soil-climatic conditions of South Fergana, the age of the food plant and other factors affect both types of walnut aphid. In particular, 1-year-old walnut seedlings are not affected by walnut aphid in all types of soils. However, if the seedlings are planted in the form of walnuts in the fall, from the second year they begin to be infested with walnut aphids [2].

Usually, the root system of 1-2-year-old seedlings is not well branched into the soil. As it does not penetrate vertically in the soil section, the water retention properties of the leaves are reduced. Therefore, these seedlings do not form large colonies of both species of walnut aphids [6].

The 3-5-year-old seedlings of the walnut grow up to 2-3 m tall and form 5-7 side branches, so they have a large number of leaves. Their root system is well developed, spreading 50-60 cm vertically in the soil and 30-40 cm horizontally. This allows the seedlings to absorb enough water and dissolved minerals from the soil. Such fast-growing saplings can be severely damaged by walnut aphid (Fergana, Murabbiylar Street, 2020).

The hot summer temperature causes both types of walnut juices to pass into the summer solstice. This can be explained by the soil-climatic conditions of South Fergana. The foothills and lowlands of southern Fergana consist of hills and hills, the height of which is 500-900 m above sea level, the soil is gravelly-sandy, sandy, loamy.

Such soils have a high permeability, but their storage capacity is low. Therefore, after the rainy days of early spring, in late June and early July, the soil begins to lose its moisture due to the lack of natural water resources in these areas. As a result, not only walnut vegetation, but also.

Due to the deepening of groundwater in the foothills and lowlands of southern Fergana in the summer, walnut trees are less used. Therefore, dehydration and sunburn on the leaves of walnuts are increasing (Fergana district, Akbilol village, June, July, 2019) [5].

Thus, the soil and climatic conditions of Southern Fergana are important factors influencing the growth and development of the upper and lower leaf aphid of the walnut, as well as its survival in nature. When the positive combination of these factors outweighs the forces of the negative factor, both types of walnut aphids develop rapidly, increasing the density of each type of individual in nature and spreading it over a wide area.

CONCLUSION

Changes in the biology of juices are associated with shifts in the duration of the developmental cycle. As the low plains alternate with the foothills, the middle mountains, and the highlands, the larvae of the aphids are delayed in hatching from their overwintering eggs, their developmental periods are prolonged, and the founders mature late; The larvae born to the founders develop more slowly. More time is spent on the maturation of wingless and winged live-bearing females. Their generation is declining. The amphibian generation emerges early; egg-laying female. The characteristics of insects in their developmental cycles, from the latitude to the latitude, are related to the distribution of the species at absolute altitudes.

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