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BIOECOLOGICAL CHARACTERISTICS OF CABBAGE BUTTERFLY

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ABSTRACT

"Prey-prey" relationship has been formed since the time when there was a diversity of living things in nature. Various living organisms have been identified that feed on plants along with their pests and spread certain diseases, and the amount of phytophages is limited due to these natural pests.

The cabbage butterfly is one of the common pests known to everyone, and it is distinguished by its high density in areas where cabbage is grown and where there are wild cabbages. Until now, this species is important as a pest of cabbage, but during the next decades, it was observed that it developed and caused certain damage in other cruciferous plants. Cabbage butterfly in the imago state feeds on plant nectar and does not harm plants, but their caterpillars have a gnawing mouth apparatus and cause severe damage.

Key words: *plant pests, phytophagous, entomophagous, plant aphids, whitewing, golden eye, candala, button beetles, leukopis beetles, summer beetles.*

АННОТАЦИЯ

Отношения «жертва-жертва» сложились со времен, когда в природе существовало многообразие живого. Выявлены различные живые организмы, которые питаются растениями вместе с их вредителями и распространяют некоторые болезни, а количество фитофагов ограничено из-за этих естественных вредителей.

Капустная бабочка – один из распространенных известных всем вредителей, отличающийся высокой плотностью на участках выращивания капусты и там, где есть дикая капуста. До сих пор этот вид имеет важное значение как вредитель капусты, но в

течение следующих десятилетий было замечено, что он развивается и наносит определенный ущерб другим крестоцветным растениям.

Капустная бабочка в состоянии имаго питается растительным нектаром и не вредит растениям, но их гусеницы имеют грызущий ротовой аппарат и наносят сильный вред.

Ключевые слова: *вредители растений, фитофаги, энтомофаги, тли растений, белокрылка, златоглазка, кандала, жуки-щитовки, жуки-беляки, жуки-летунки.*

INTRODUCTION

Agriculture plays a key role in raising the standard of living of the population in our region and fully satisfying their food needs, one of such crops is the omnivorous pests of cabbage and the development of effective methods of combating them, their species composition, damage studying its features remains one of the current issues.

The biology and ecology of harmful species in the vegetative organs of representatives of cruciferous plants distributed in the south-eastern and bordering regions of Fergana can contribute to the further expansion of the scope of scientific evidence on the characteristics and life processes of causing damage. Based on the information about the life processes of the pests, it is possible to analyze the specific characteristics of the seasonal development of pest species in South-eastern Fergana and its surroundings and to solve some theoretical problems in this regard.

LITERATURE REVIEW

The main part of insect pests in the family of chrysanthemums can be said to dry the leaves of the plant, cause the plant to dry up by gnawing the root part, wilting of the leaves, mosaic gnawing of the leaves in a reticulated state, and hokozos. It is necessary to carry out research on the distribution, biology, and comprehensive analysis of the damage properties of plant-sucking and rodent pests.[5,8]

In the works of V.V. Yakhontov, detailed information about the spread, biology and damage-causing properties of the pest species in the cabbage family (Yakhontov 1953, 1962) is given.

Academician M.N.Narzikulov provided extensive information on the morphology, biological classification and zoogeographical distribution of pest lichens in the Central Asian ecosystem. He has given some information about the saps that pass to the butgulodash (Nazirkulov, 1941; Nazirkulov 1952, 1962; Nazirkulov, Umarov 1969; Nazirkulov, Doniyorova, 1990). [19,20]

The first step in the study of pests was established in Central Asia at the end of the 20th century. Turkestan also involved employees of the entomology station. Such information can be found in written form in the reports of scientific observations and

entomological station of Mordvilko (1894; 1919; 1924), I.V. Vasilev (1906; 1915; 1922), Kholodnikov (1907), Bogolyubov (1914). Later, the Turkestan Entomological Station was transformed into the Central Asian Plant Protection Research Institute. This also created monographic works on the species composition of pests of all agricultural crops in the conditions of Central Asia. Among such works, V.P. Nevsky's monograph "Middle Asian saps" contains information on species composition and morphoanatomical characteristics of saps found in Central Asian agricultural crops. [1,2,4,6]

In the conditions of the Fergana Valley, A.A. Muhamadiyev and his students carried out a number of works on the species composition, degree of damage and their biology of harmful insects in cultivated fields (1966, 1979). A.A.Muhamadiyev, M.Kh.Akhmedov (1976) A number of works were carried out by Mustafaqulovs.

G. N. Bey-Biyenko (1971) briefly touched on common pests of agricultural crops. [1]

N.V. Bondarenko (1976) analyzed a brief classification of pests and identification methods in the course of agricultural entomology. [2,3]

V. J. Meyer (2004) gives information about the levels of damage caused by the comstock worm population control mechanisms.

V. A. Petrunin (2004) provides information on the acceleration of the production of organic fertilizers and their effect on increasing productivity in the cultivation of cultivated plants. [4,5]

DISCUSSION

Cabbage butterfly in the imago state feeds on plant nectar and does not harm plants, but their caterpillars have a gnawing mouth apparatus and cause severe damage. This can be explained through the analysis of the data obtained during the research.

RESULTS

From the observations, it became known that butterflies leaving the village were observed on March 25-30 in 2020, and on April 1-10 in 2021 (Bagdad, Fergana). This big difference in the emergence of butterflies from wintering cones is explained in connection with annual weather conditions and, first of all, the temperature factor. In 2020, spring will come much earlier, the temperature will rise evenly, and the vegetation of wild cabbages will start early, and the butterflies will fly out in the second half of March. And in 2021, spring came relatively late, many rainy days and low temperatures delayed the development of butterflies by 10-12 days, and as a result, the first butterflies left the village in the first half of April. Thus, the

development period of the cabbage butterfly directly depends on annual weather conditions and other environmental factors. Butterflies fly away when the daily temperature rises to +15+160C. [7,9,10] When the daily temperature rises to +17+180C, the departure of butterflies from the village has accelerated. Under favorable conditions, butterflies mate after 2-3 days. Frequent changes in daily temperature and low temperature cause them to mate after 4-6 days. It should also be noted that in the conditions of the same region, the departure of butterflies from the village can vary by 5-7 days. In particular, in open areas that are not protected from strong winds, they appear later, in closed and relatively warm places, and in parts surrounded by buildings, they appear a little earlier. The results obtained during our research show that the caterpillars of the cabbage butterfly survive in large quantities only on cabbage leaves, and the caterpillars develop quickly when there is enough food. Quantitatively, the number of eggs is high on cabbage leaves, and few are laid on other cabbage leaves. For example, the number of eggs laid on 2 leaves of cabbage is 35-40, and on the leaves of radish, rape, turnip is 20-25 (2020, Bagdad). [13,14,15]

The hatching of worms from eggs is 57-70% (Fergana, 2020). In cabbage, worms hatched from eggs feed in batches for 15-20 days. At the time of cabbage leaves, it is possible to observe that they are moving at the growth points. At first, the worms moved on the back of the leaf, but later they were easily overtaken by enemies due to the fact that they moved individually, gnawing only the veins of the leaf. Apateles (*Apanteles glomeratus* L) belonging to the braconoid family are killed by *Pteramalus puparum* L. sponge pteromalyus belonging to the pteromalid family by 90-95%. Worms and fungi get sick with microsporidosis, flyashery and other diseases at high humidity temperature, a lot of rainy days, temperature above +170 C. Worms become inactive, stop feeding and die. The internal tissues of adult worms become yellowish-brown and grow. For example, it was found that 3-5 (1m 2) insects were flying in the area where cabbage was planted in the spring. The life of worms on a leaf lasts 25-30 days. A sharp decrease in the number of worms was observed after 20 days (Bagdad, 2020). [11,12]. The caterpillars, which have turned into mushrooms, were observed in the core of a roughly gnawed leaf of cabbage, and when they were brought to the laboratory room, after 14 days, a butterfly emerged from it. The number of mushrooms brought to the laboratory was 20, of which 3 butterflies did not emerge, and 2 died without normal development of wings. 10 out of 15 were found to be male and 5 female. After the 2nd generation butterflies fly, they fly to certain distances in search of mid- and late-season crops. Wild cabbages have rough texture and do not attract butterflies. Many of them can be seen flying in fields planted with cabbage and turnips. Solitary butterflies are male and lay their eggs in a

certain number, in several parts, on the back of young seedlings. The hatched larvae feed on the back of young leaves for 1-3 years without any predators. At the age of 4-5 years, when they are growing, they move quickly, and their feeding activity attracts hunters. The high level of damage caused by worms, the increase in quantitative density corresponds to the first half of 5-6 months (Bagdad 2021). During this period, their development was observed on the 5th head of cabbage in the cabbage fields in the fields where chemical pesticides had not been sprayed. Quantitative density of beneficial insects in cultivated fields corresponds to the time of increase in the number of pests. They are mainly scaly, trichograms, and their number begins to increase gradually depending on the number of pests. After the second half of May, paralyzed worms can be observed among the balls of worms. Such worms move slowly and stand out from others. Only damaged cabbage leaves and coarse leaf veins remain, they do not participate in head wrapping. [16,17,18]

CONCLUSION

In general, the period of the greatest number of entomophages in cabbage fields corresponds to May-June. In August-September, it can be observed that damage has increased again in evening cabbage. During the year, there is an increase in the quantitative density of worms in spring and autumn. As a result of its activity, cabbage does not rot, conditions are created for the occurrence of various viral and fungal diseases in the plant.

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