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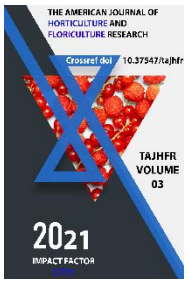

Developmental Bioecology And Control Measures Of Sucking Pests In Wheat Biotope Of Karakalpakstan Agrobiocenosis

Bakhtiyor Otebayevich Bauetdinov
Assistant Of Nukus Branch Of Tashkent State Agrarian University, Uzbekistan

Fatima Arepbay Kizi Sultanbaevna
Assistant Of Nukus Branch Of Tashkent State Agrarian University, Uzbekistan

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ABSTRACT

The article presents the results of research on the bioecology of development of sucking pests, damage caused by dominant species, in wheat grown in Karakalpak agrobiocenosis. Spreading and damage of wheat aphid, harmful bug and wheat thrips, which are the main types according to their spreading areas and damage, were determined and controlling actions were recommended.

KEYWORDS

Aphids, sucking, area, dynamics, damage, control, efficiency, yield reduction, sprayer.

INTRODUCTION

Growing wheat from agricultural crops is the main type of crop grown in many countries. The main problem in all agrobiocenoses is to increase the yield of wheat to fully satisfy the needs of the population in the most necessary grain and grain products. The reason is that as a result of the favorable abiotic and biotic factors present in this biotope, the field accumulates a large number of species of insects that feed on vegetative, generative bodies of wheat. It is well known that the coexistence and specialization of these species cause severe damage due to their feeding on wheat.

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From September, when wheat seedlings sprouted in the agrobiocenosis of the Republic of Uzbekistan, including Karakalpakstan, where wheat cultivation has been developing in recent years, from April to the end of the vegetation period the following types of pests: autumn pests (Agrotis segetum Den. Et), pest like exclamation mark (Agrotis exclmationi L), Italian grasshopper (Calliptamus italicus L.), Asian grasshopper (Locusta migratoria L.), wheat thrips (Haplothrips tritici Kurd.), wheat aphid (Schizaphis graminum Rond.), harmful bug (Eurygaster integriceps Put.), pyavitsa (Lema melonopus L.) are getting more. There are studies that prove that the multiplication of species destroys the main part of the crop and that the implementation of the proposed control measures as a result of scientific research to solve this problem is actual (Khudjaev, 2010; Toreniyazov et al., 2018;).

In order to solve the problem on a scientific basis in the region, taking into account the high prevalence and damage of pest species in wheat varieties in Karakalpakstan, research was conducted to develop a scientific basis for the application of combined control measures, studying the bioecology and damage of pests which are spreading in this biotope.

METHODS OF THE RESEARCH

In determining the types of pests and entomophagous species in the biotope of wheat grown in Karakalpakstan, the methods of BP Adashkevich, Sh.T.Khojaev were used and V.I.Tansky's methods was used to define the damage. The results of the study were analyzed by variance, and mathematical statistical processing was carried out on the basis of the method of B.A. Dospekhov.

RESULTS OF THE RESEARCH

As a result of research on the identification of pests in the wheat fields of Karakalpak agrobiocenosis, it was taken into account that the most common and specialized species in the biotope appeared with the appearance of seedlings and actively developed for wintering (Table 1).

Table 1

Pests and entomophagous species found in wheat fields of the northern regions of Karakalpakstan, development dynamics

Nukus, Kegeyli, Chimbay districts, 2018-2020.

Names		In autumn			In spring		
In Uzbek	In Latin	September	October	November	April	May	June
Pests							
Field mouse	*Apodemus agrarius, Mus musculus.*	-	-	-	-	++	+++
Autumn pest	*Agrotis segetum Den. et Schif.*	+	++	+	++	+++	+

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Pest like exclamation mark	*Agrotis exclmationi L.*	+	++	+	++	+++	-
Italian grasshopper	*Calliptamus italicus L.*	-	-	-	-	++	++
Asian grasshopper	*Locusta migratoria L.*	-	-	-	-	+	+
Apricot cane aphid	*Hyalopterus pruni geoffr.*	+	++	++	+	+	++
Harmful bug	*Eurygaster integriceps Put.*	-	-	-	+	+++	+++
Wheat aphid	*Schizaphis graminum Rond.*	-	-	-	+	++	+++
Wheat thrips	*Haplothrips tritici Kurd.*	-	-	-	++	++	+
Pyavitsa	*Lema melonopus L.*	-	-	-	+	+	+
Gessen fly	*Mayetiola destructor Say.*	-	-	-	-	+	+
Swish fly	*Oscinella frit L.*	-	-	-	-	+	+
Wheat stem flea	*Chaetocnema hortensis Geoffr.*	-	+	+	+	+	+
Bed-bug	*Lygus pratensis L.*	+	++	++	+	++	+++

Note: - did not occur; + in a few numbers;

++ average number; +++ in large numbers

It was taken into account that with the active development of plants after winter from the third decade of April in the fields where the seedlings began to develop with the rise of air temperature in the spring, insect species started to appear and spreading areas become large.

In this agro-climatic conditions, it was proved that wheat thrips, harmful bugs, wheat aphid are more widespread and developed than the main species in the phases of wheat production, pollination and milking in May.

It was taken into account that the number of wheat thrips as the main pest of wheat is 3.2-165.2 pieces per 100 plants, wheat juice 16.9-216.7 pieces, harmful bugs 1.4-35.6 pieces.

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Among the specialized pests of wheat, which are the dominant species in the habitat, wheat thrips increased their amount to 2.7-27.3 pieces per plant 6.7 c / ha per hectare, yield was decreased when wheat aphid to 9.6 pieces per hectare 10.1 c / ha, and the number of harmful bugs was 1-10 in 10 m². The number of spikes per 1 m² decreased to 307.9 and at the end of the vegetation period 7.9 c / ha yield was unuseful.

As a result, in order to overcome the existing problem, the following types of chemical preparations imidacloprid, 20% s.e..k., Bagira 0.07-0.1 liters per hectare, Lyambda-cygalotrin 5% em.k., Atilla 0.15 l., 10% em.k., Atilla super 0.1 l, 10% em.k,. Killer 0.07 l. 10% em.k., Killer extra 0.07-0.1 l. 5% em.k., Esfen-alpha 0.3 l., cypermethrin 55% em.k., Tsiperfos 0.5 l and 25% em.k. were used in norms and the biological efficacy was determined.

The results of research in this area suggest that the preparations have proven to be sufficiently biologically effective when used in the amount of 200-300 liters of water per hectare against wheat thrips, wheat aphid, harmful bugs, which are the main pests of wheat.

It was noted that after 3 days of treatment to wheat thrips, the biological effectiveness of the preparation was between 79.2-97.1%, by the 7th day it was 81.4-99.3% and on the 14th day it reached to maximum level. When ingested against wheat aphid, 20% of the preparations s.e.c. Bagira 0.1 liters per hectare, 10% em.k., Killer extra - 0.1 l., 5% em.k., Esfen-alpha - 0.3 l., 55% em.k., Tsiperfos 0.5 liter the biological effectiveness was 97.8-98.2%. The biological efficacy of field preparations containing 12.9-24.1 harmful bugs per 100 plants in the wheat field increased by 73.1-83.1% on the 3rd day after treatment and by 97.4-98.5% on the 14th day after treatment.

CONCLUSION

Wheat thrips (Haplothrips tritici Kurd), wheat aphid (Schizaphis graminum Rond), harmful bugs (Eurygaster integriceps Put) which are the main types of pests, that damage by spreading in biotope of wheat varieties sown in Karakalpak agrobiocenosis, appear in the field in the last decade of April and develop 3.2-165.2 pieces, 16.9-216.7 pieces, 1.4-35.6 pieces per plant by the end of vegetation period. Wheat thrips increased their amount to 2.7-27.3 pieces per plant 6.7 c / ha per hectare, yield was decreased when wheat aphid to 9.6 pieces per hectare 10.1 c / ha, and the number of harmful bugs was 1-10 in 10 m². The number of spikes per 1 m² decreased to 307.9 and at the end of the vegetation period 7.9 c / ha yield was unuseful.

In order to reduce the number of wheat pests and to protect the crop, it is recommended to use 20% s.e..k., Bagira 0.07-0.1 liters per hectare, Lyambda-cygalotrin 5% em.k., Atilla 0.15 l., 10% em.k., Atilla super 0.1 l, 10% em.k,. Killer 0.07 l. 10% em.k., Killer extra 0.07-0.1 l. 5% em.k., Esfen-alpha 0.3 l., cypermethrin 55% em.k., Tsiperfos 0.5 l and 25% em.k. mixed with 200-300 liters of water per hectare with the help of spraying units mounted on tractors.

REFERENCES

1. Adashkevich B.P. "Biological protection of cruciferous vegetable crops from harmful insects." –Tashkent: "FAN", 1983. –p. 180-188.
2. Dospekhov B.A. Field experiment technique. - M .: Kolos, 1985. p-351.
3. Tansky V.I. The biological basis of the harmfulness of insects. - M .. "Agropromizdat", 1988. p-182-198.

4. Toreniyazov E.Sh. Khodjaev Sh.T., Kholmuratov E.A. Plant protection - Tashkent: "Navruz", 2018. p - 876.
5. Khojaev Sh.T. Modern methods and means of combined protection of plants from pests. - Tashkent: Navruz, 2015. p - 552.
6. Khojaev Sh.T. and others. Methodical instructions on testing of insecticides, acaricides, biologically active substances and fungicides - Tashkent, 2004. - B.