



RODENT AND SUCKING PESTS, WHICH ARE MET IN MAIZE AGROBIOCENOSIS, EFFECTIVENESS OF BIOLOGICAL METHOD IN CONTROLLING THEM

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ANNOTATION

The article presents results of the conducted researches on structural type, spreading, density in a plant, their damage, structural type of natural entomophages of pests and technology of using biological methods in controlling pests, biological effectiveness of the used method of rodent and sucking pests, which develop in maize crops in the conditions of Karakalpakstan and damage.

INTRODUCTION

Maize is being sown in Uzbekistan in wide fields as a crop of fodder and food.

Some broad actions are being carried out in order to satisfy with the requirements of population for maize products in the conditions of the Republic of Karakalpakstan. Especially, as a result of scientific researches, which are being conducted in order to carry out actions of controlling maize pests, products, that are damaged by pests, can be saved. Therefore, creating methods of controlling pests on the basis of modern technologies by determining structural type, the main types and damaging degree of maize pests is one of the basic and necessary tasks of today.

In information of agro-olam uz. [2021] the importance of maize in economics is high and it is sown widely for grain and green mass. Comparing to other grain crops maize is more important with its productivity and eatable. Maize oil is used in healing atherosclerosis disease. In Brazil, bioethanol is mainly gotten from maize grain, i.e. 180 liters of ethyl alcohol is received from 1 tons of grain. 6000 m³ marsh-gas is received

from 60 tons of green mass, which is gotten from each hectare of maize. Maize grain and stem are used for agricultural animals. Its grain is full of nutrition, and it is said that 1 kg of maize owns 1.34 kg of food units.

In scientific information of E.Sh.Toreniyazov, A.R.Utepbergenov, A.M.Kutlimuratov [2013] today there are some types of damaging pests in maize agrobiocenosis. From them: wireworm, cockchafer, autumn earworm, cotton earworm, maize butterfly, maize aphid, tobacco thrips, spider mate develop and damage. Rodent pests damage root, stem and fruit organs of the plant, and sucking pests damage stem joints and recently appearing fruits in the period of appearing leaves, growing buds and fruits, and brings into the decrease of products. As a result, it is difficult to produce high qualitative product from the crop without using actions of controlling pests. Therefore, there is given information about defining structural type of maize pests, studying their morphological, biological and ecological peculiarities, spreading, studying density in a plant and damaging features in the vegetation period, and after these conducting controlling actions,



the necessity of recommending for industry biological effective methods.

According to the findings of E.Sh.Toreniyazov [2013; 2014] today the only way of getting high yield is indicating effective periods in using biological method in controlling pests and creating effective ways which are scientifically based. Nowadays, as a result of not carrying out the system of controlling maize pests 35-40% of products, which can be received from maize, is destroyed.

THE AIM OF THE RESEARCH

Defining structural type of maize pests, their types, damage, and studying convenient methods in controlling pests and recommending to industry.

TASKS OF THE RESEARCH

- defining types of maize pests, studying their biology and ecology;
- studying spreading, development and density of maize pests;
- determining damaging degree of maize pests;
- studying the effectiveness of the biological method in controlling maize pests;

- defining structural type of parasite and entomophages of maize pests;

- studying biological effectiveness of entomophages in controlling maize pests.

METHODOLOGY OF CONDUCTING THE EXPERIMENT

In carrying out the experiment, types and the number of pests in a plant was conducted on the basis of the method of F.M.Uspenskiy (1973) about defining the number of pests in crops; counting entomophages in field condition – methodology of V.A.Sharipo, V.A.Shepetelnikova (1976). Studying natural entomophages of maize pests was carried out on the basis of methodological manuals recommended by B.P.Adaashkevich, E.Shiyko (1983).

RESULTS OF THE RESEARCH

Experimental works were conducted in maize fields of Beruniy, Kungrad, Chimbay and Nukus regions of the Repculib. Types of maize pests were determined in the scientific experiment (table 1).

Table 1.

Types of rodent and sucking pests which can be met in maize crop

No	Name in Uzbek	Name in Karakalpak	Name in Russian	Name in Latin
1	Sim qurti	Sim qurti	Provolochniy chervi	Agriotes meticulosus
2	Kuzgi tunlam	Gúzlik sovka	Ozimaya sovka	Agrotis segetum Den. Et Schif.
3	Go'za tunlami	Ǵawasha sovikasi	Xlopkovaya sovka	Heliothis armigera Hb.
4	Makkajo'xori poya parvonasi	Mákke paqal gúbelegi	Kukuruzniy matilek	Ostrinia nubilalis Hb.
5	Makkajo'xori shirasi	Mákke shirinjasi	Kukuruznaya tlya	Sipha maudis Pass.
6	Tamaki tripsi	Temeki tripsi	Tabachniy trips	Thrips tabaci Lind.
7	Oddiy o'rgimchakkana	Ápiwayi órmekshikene	Obiknovenniy pautinniy klesh	Tetranychus urticae Koch.

As can be seen from the table 1, from rodent pests in maize agrobiocenosis wireworms, autumn earworm pests live under the soil and damage by rodding root of the plant, joint of root with stem.

In the part of the plant, which is on the soil, rodent cotton earworm, maize stem butterfly, from

sucking pests maize aphid, tobacco thrips and spider mate pests are met in maize crops.

Average number of dominant types of maize pests in a plant was defined during the experiment. Information, which is taken as a result of conducted



observations in the farm “Barzu Ismailov” in Kungrad region, is given in table 2.

As can be seen in table 2, the average number of autumn earworm in 1m² is 0.4-0.5 pieces, cotton

earworm in one plant – 0.6-0.8 pieces, maize stem butterfly in one plant – 0.3-0.4 pieces.

Table 2**Types of maize pests and density****(maize sowing field of the farm “Barzu Ismailov” in Kungrad region, 2021)**

№	Types of maize pests	The average number in one plant (1m ²), piece
1	Autumn earworms	In 1m ² 0,4 – 0,5
2	Cotton earworm	0,6 – 0,8
3	Maize butterfly	0,3 – 0,4
4	Maize aphid	16 – 28

In conducted scientific experiments bracon parasite was used in 5:1; 10:1 and 15:1 (pest: parasite)

account in controlling cotton earworm in maize crops, biological effectiveness was studied (table 3).

Table 3**Biological effectiveness of bracon parasite in controlling cotton earworms in maize crops**

№	Varants	The number of used bracons, piece	Biological effectiveness, In days, %		
			3	7	14
1	5 pieces of worms	1	20,4	50,2	65,5
2	10 pieces of worms	1	15,2	44,6	56,3
3	15 pieces of worms	1	12,5	36,2	45,4
4	Observation (entomophage was not used)	-	-	-	-

As can be seen in table 3, when bracon parasite was used in controlling cotton earworm, biological effectiveness was 65.5% in the first variant, 56.3% in the second and 45.4% in the third.

CONCLUSION

1. In the growing period of maize from rodent pests - wireworm, autumn earworm, cotton earworm, maize stem butterfly, from sucking pests - maize aphid, tobacco thrips, simple spider mate are met and damage.

2. The average number of autumn earworm in maize agrobiocenosis in 1m² is 0.4-0.5 pieces, cotton earworm in one plant – 0.6-0.8 pieces, maize stem butterfly in one plant – 0.3-0.4 pieces, maize aphid in one plant – 16-28 pieces.

3. When bracon parasite was used in controlling cotton earworm in maize station in 5:1, 10:1 and 15:1

account, biological effectiveness after 14 days was comparatively 65.5; 56.3 and 45.4%.

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