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IMPACT OF HARMFUL ORGANISMS ON RICE CROP AND MEASURES TO PROTECT AGAINST THEM

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Abstract; this article is discussed the main harmful organisms (pests) encountered in the rice crop today. In this, the effects of shield crab, black crab, which cause severe damage to rice during the germination period, were determined, and modern chemical agents against these pests were tested in laboratory and field experiments, and the regulation of the optimal use of chemical agents was determined.

Keywords; rice, water, pest, biological efficiency, varieties, chemical agent.

Rice crop (rice product) among cereal crops is more than2 billion in Asia, and 200 million in Africa and South America. Is the main product of the population? According to data, rice consumption per capita varies from 186 kg in Burma to 4 kg in the United States [1].

To date, 232 species of rice bugs and more than 100 species of insects have been identified in Bangladesh. Globally, only 20–33 species are considered pests in rice production systems [2,3,4,5,6,7,8,9]. In Asia, where more than 90% of the world's rice is grown, pests cause an average yield loss of 20% [10,11,12,13,14,15].

In the current period, due to the creation of new fruitful mid-season and late-season varieties of rice, and due to the fact that the rice plants are mainly flooded in advance and the seeds are planted by freezing, favorable conditions are created for the reproduction of pests such as Apus concriformis.

According to the information given by A. SH. Khamroev and others, more than 30% of agricultural crops are lost in the world as a result of the effects of harmful organisms. Therefore, it is emphasized that it is necessary to use intensive technologies, wide use of chemical means in plant protection and ensure their effective use [pp. 46-47].

In the climatic conditions of our republic, the development of elements of combined agrotechnology, based on the research of imported rice varieties and local early, high-yielding, pest-resistant varieties, as well as modern means of combating pests, has not been sufficiently studied and scientifically substantiated.

Taking into account the above actual problems, it is once again confirmed that it is very important to study the impact of pests on the productivity of rice imported from abroad and local early ripening types of rice, high-yielding variety samples, and to

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develop the elements of agrotechnology of using modern tools and methods against these pests.

Research methods. During the experiments, monitoring of pests was carried out based on the methods of M.P. Sborshchikova, A.Abdullaev, etc., and agrarian toxicological studies by A.I. Kasyanov, Sh.T. Khojaev.

The purpose of the study. Monitoring of harmful organisms in rice fields, developing regulations for combating them in the course of studying their biology.

Research results. The drastic change of weather from year to year also affects the productivity of rice. As a result, harmful organisms in rice fields affect the germination, growth and yield elements of rice, causing the productivity to die up to 15-25%. In order to prevent such disasters, scientists of the Rice Research Institute are conducting scientific research on rice pests in 2018-2022. In scientific research, in 2021, it was found that the following pests were present in the agrarian biocenosis of rice:

53.0 grains of black crab Leptestheria dahlacensis Sars. per 1 m ^{2}; 0.4 larvae of barley borer Hydrellia griseola Fall on two stalks; 35 larvae of the gnat fly Ephydra macellaria Egger.larvae per 1m2; 1 beetle of the rice water borer Hydronomus sinuaticollis Faust, 4 worms of the corn moth Ostrinia nubilalis Hb., and 2 worms of the grain stem borer (Cephus pygmaeus) were detected in 1 m^2 (Fig. 1).

In these observations, it has known that in the fields where the experiment is being conducted, during the germination of rice, there are more crabs with shields and crabs. In the research work, it was found that at the end of the rice flowering period and during the milk ripening period, there is an average of 1 cotton bollworm larvae per stalk and 1 harmful weed per 10 furrows.

In scientific research, it was found that the following pests were found in the field of 12 cards 4 checks and 13 cards 1 check in the area where rice imported from abroad and local variety samples were planted by seedling method:

pests during the germination period, i.e., an average of 6 mature eggs of the shield crab Apus concriformis Schaff per 1 m^2, 20.0 eggs of the black crab Leptestheria dahlacensis Sars per 1 m^2; 1.0 larva of barley borer Hydrellia griseola Fall on two stalks; Ephydra macellaria Egger larvae per 1m^2 .0 larvae; 1 beetle of the rice water borer Hydronomus sinuaticollis Faust, 5 worms of the corn moth Ostrinia nubilalis Hb., and 3 worms of the grain stem borer (Cephus pygmaeus) were observed per 1 m2. These observations showed that during the initial period of rice, the seeds were grown in a special nursery, and the seedlings were taken out to the open field when they were 20-25 days old. It was observed that during the germination period of rice, the density of shield crab and black crab was low and did not affect the growth and development of the seedlings. However, during the rest of the growing season of seedling-grown rice, it was found that there were more pests in the growing season than in the fields planted from seed.

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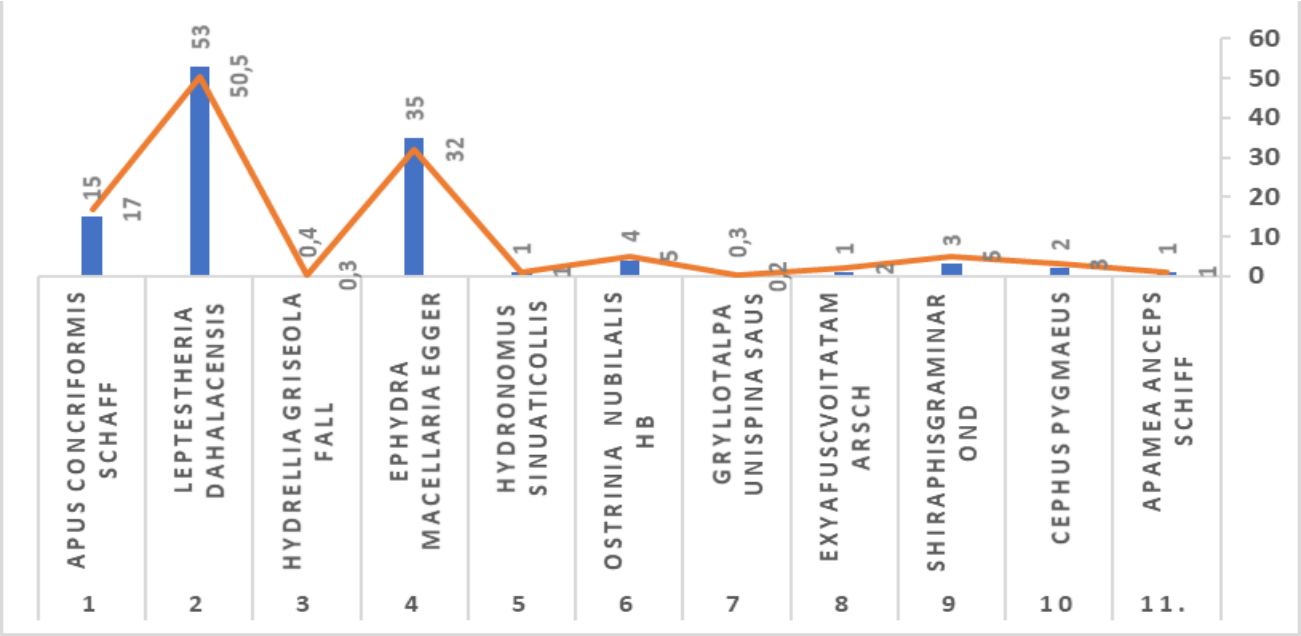
It can be seen that at the end of the rice flowering period and during the milk ripening period, there is an average of 1 cotton bollworm larvae per stalk and 1 per 10 bolls of the harmful weevil.

The experiment was continued in 2022 in the areas where the experiment is being conducted, and the following pests were found in the observations of the rice agrarian biocenosis:

50.5 grains of black crab Leptestheria dahlacensis Sars per 1 m^2; 0.3 larvae of barley borer Hydrellia griseola Fall on two stalks; Ephydra macellaria Egger larvae per 32.0 larvae; 1 beetle of the rice water borer Hydronomus sinuaticollis Faust and 5 worms of the corn moth Ostrinia nubilalis Hb. were detected in 1m^2.



-The number of three-stage pests of pests in the experimental field from the rice seed, 2021

- The number of three-stage pests of the three-stage pests in the experimental field of rice seed, 2022

Figure 1.

Coccinellids found in the field of scientific research are insects belonging to the family Coccinellidae of the Coleoptera family. Representatives belonging to the coccinellid family are widespread, and they are of great importance in the elimination of dangerous pests that fall on crops. Aphids, mites, maggots, thrips, butterfly eggs and young worms are among such dangerous pests. The body of the beetle is round, dome-shaped at the top, flat and hemispherical at the bottom. When viewed from the side, the front shoulder and the top of the wing are clearly domed. Eggs are yellow, somewhat large, and elongated. The seven-pointed hawk is considered the most omnivorous of the carnivores. Each beetle eats 50 to 100 aphids in one night - during the day, its larvae eat up to 85 aphids. Goldeneyes are insects belonging to the Neuroptera family, the Chrysopidae family. Goldeyes are very delicate insects with a golden light green color.

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Their rather broad nacreous or iridescent wings span 19 to 55 mm when spread. Only the worms of the golden eye lead a predatory life, they are extremely mean.

Table 1

Meeting of beneficial insects in rice agrarian biocenosis

Tashkent region Ortachirchik district Scientific research institute of rice cultivation field experimental sites.

№	PESTS	Density of natural entomophages in rice agrarian biocenosis (number in 10 plants, pieces)						
		Days of reckoning 2021 year						
		20. IV	10.V	30.V	20.V1	10.VII	30.VII	20.VIII
1.	Coccinellids	0,2	0,6	1,0	1,5	2,5	2,2	1,7
2.	Golden eyes	0,3	0,7	2,0	2,2	3,0	2,5	1,5
3.	Dragonfly (adults and larvae)	1,0	2,5	5,0	6,0	6,5	5,5	2,0
4.	Besiktebrater	-	-	0,1	0,2	0,2	0,1	0,1
		2022 year						
1.	Coccinellids	0,1	0,8	1,2	1,5	2,7	2,3	1,5
2.	Golden eyes	0,5	1,0	1,5	2,0	3,3	2,7	2,0
3.	Dragonfly (adults and larvae)	0,5	2,0	4,0	5,5	6,0	4,5	2,2
4.	Besiktebrater	-	-	0,1	0,1	0,1	0,1	0,1

In the experiment, entomophges also begin to appear during the period when pests begin to develop en masse in the rice field. In these fields, the appearance of natural mounds begins to be observed when the average daily air temperature exceeds 16 °C. In the experiment, it was observed that coccenellids were 0.2-1.0 per 10 plants, golden eyes were 0.3-2.0, dragonfly larvae were 1.0-5.0 per 1 m^2, and bedbugs were 0.1 per 1 m^2. The increase in the number of all beneficial insects was mainly observed in May-June.

In the study, the phenology of natural entomophges was observed in experimental fields planted with rice in 2022. In the experiment, it was observed that coccenellids were 0.1-1.5 per 10 plants, golden eyes were 0.5-2.0, dragonfly larvae were 0.5-5.5 per 1 m^2, and bedbugs were 0.1 per 1 m^2.

Table 2

Biological efficacy of chemicals used against the shield crab causing damage to rice during the germination phase.

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In the experiment, new generation insecticides were tested at different application

№	Options.	Consumption rate of medicine, l/h, kg/h	The average number of Apus concriformis Schaff per 1 m^2 e.g.					Productivity, % to days.
			Until processing	After processing, in days.				
				1	3	7	14	14
5	Diazinon 60%	1,5	18	16,5	5,5	3,5	2	91,8
4	Taishin 500	0,06	16,5	15,4	6,2	3	2,2	90,1
3	Takumi 20%	0,25	19,2	14,5	5,1	4,1	1,7	93,4
2	Funanon, 57%	1	19,8	16,7	7,8	5,6	3,2	88,0
1	Control (unprocessed)	-	18,5	20,2	22,5	23,4	25,0	

rates against pests that damage rice during the germination phase (Table 2). Processing was carried out with the help of a motorized hnd device at the expense of 200 liters of water per hectare. In the study, entomological controls were carried out before spraying and for 14 days after. Before treatment, the number of shield crabs was 18.0 to 19.2 per in all options, then they started to decrease slowly (except control). Accordingly, we can see that the biological efficiencyhasalso increased. On the last settlement day (14), it was found that a high, satisfactory result was obtained in almost all options (90.1-93.4%). In the experiment, Fufanon, 57% em.c. (1.0 l/h) biological efficiency reached 88.0% on the 14th day of treatment, on the 14th day when Tayshin 500 s.d.g (Clothianidin)-0.06 kg/h was used, the biological efficiency of the drug was 90.1 was %. In the experiment, we can see that in the variant treated with Takumi 20% (Flubendiamide) - 0.25 kg/h, the biological efficiency of the chemical agent reached the highest rate, 93.4%, by 14 days.

According to the results of the conducted research, the biological efficiency of the Takumi chemical agent used against pests in rice agrobiotsnosis in its germination phase is higher than 93%, and the number of pests was controlled from 19.2 to 1.7 units per 1 m^2.

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CONCLUSION

1. In the research areas, the emergence of natural mounds begins to be observed when the average daily air temperature exceeds 16 °C. In 2022, the phenology of natural entomophges was observed in experimental fields planted with rice. In the experiment, it was observed that coccenellids were 0.1-3.3 per 10 plants, golden eyes were 0.5-2.7, dragonfly larvae were 0.5-6.0 per 1 m2, and bedbugs were 0.1 per 1 m^2.
2. The experiment was continued in 2022 in the fields where the experiment was conducted, and the observations of the rice agrobiocenosis revealed the presence of the following pests: 50.5 grains of the bokovlav crab Leptestheria dahlacensis Sars. per 1 m^2; 0.3 larvae of barley borer Hydrellia griseola Fall on two stalks; Ephydra macellaria Egger larvae per 32.0 larvae; 1 beetle of the rice water borer Hydronomus sinuaticollis Faust and 5 worms of the corn moth Ostrinia nubilalis Hb. were detected in $1m^2$.
3. In the experiment, in the variant treated with Takumi 20% (Flubendiamide) - 0.25 kg/h, the biological efficiency of the chemical agent was the highest by 14 days, 93.4%, and the number of pests decreased from 19.2 to 1.7 units per was determined.

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