



Development Of (Lepidoptera) Noctudae And Their Entomophages In Areas Of Natural Disaster In Sirdarya Region

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ABSTRACT

At present, due to the rapid development of the world, anthropogenic factors, and the impact of natural disasters, many live organisms are disappearing or their mutual relations are being disturbed. As a result of floods, windstorms, and rains, many animal worlds have been destroyed in the world, causing the natural balance of their biocenosis to disappear, leading to the mass increase of pest species.

In this context, on May 1, 2020, a natural disaster occurred in Sirdarya region due to the flooding of the Sardoba reservoir due to heavy rainfall. As a result, water overflowed from the "Sardoba Reservoir" in the Sardoba District of the Syrdarya Region, causing serious damage to several settlements, social facilities, agricultural crops, including grain, cotton fields, and other crops in the Sardoba, Oqoltin and Mirzaabad districts.

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The main part: The main phytophagous species found in the cotton agrobiocenosis: several phytophages were found in the cotton agrobiocenosis during the research conducted in the disaster areas of Syrdarya region. The process of damage to cotton was observed mainly by spider mite, autumn nightworm, bollworm, caradrina, plant aphids, aphids, cotton mite, thrips. The types of these pests and their biological features are as follows.

Including autumn nightshade - *Agrotis segetum* Den.et Shsiff. It is found everywhere in the conditions of our republic. This pest damages more than 150 types of plants belonging to 34 families. Among them, cotton, alfalfa, tomato, sugar beet, corn, grain, oilseeds are the most popular food of autumn night.

According to our observations, in the first half of August, when seedlings were planted in autumn night greenhouses, the presence of middle-aged and old worms was observed. These worms damaged the newly planted young seedlings, gnawing the root joint of the plant and causing them to die. Later (during the pruning period) the autumn night did not harm the plants. At the same time, it was observed that butterflies of the pest flew into the greenhouses and laid eggs. But because there was not enough food in these lands, the pest could not develop.

Bagworm - *Helicoverpa armigera* Hbn. It lays one, sometimes two, eggs on the growth point of the tomato that has entered the field. The 1st-year-old worms that hatched from the eggs first feed on the leaves at the point of growth, then the 2-3-year-olds damage the pods and flowers, and the older worms damage the fruit and make it unfit for consumption. The worm hatched from the egg develops in greenhouse conditions

for 25-30 days and destroys 20-25 pods, flowers and fruits. In areas where the bollworm is not controlled, it can destroy 70-80% of vegetable crops and 35-40% of cotton crops when it multiplies. According to the information provided by domestic and foreign authors, the cotton bollworm damages more than 250 plants.

The bollworm damages the flowers, cobs and bolls of cotton, as well as corn stalks, tomato fruits, okra, hemp and chickpea buds, pea pods and fruit organs of many other plants. Damaged combs and young nodes are often shed, and the bollworm sometimes damages the stem tips. In cotton agrobiocenosis, the occurrence of tunlams was shown to be somewhat higher than in other crops. The level of harmfulness has also been studied, and the most common are cotton bollworm, autumn bollworm, tamki bollworm, and wild bollworm. During cotton ginning period, 10 female butterflies, which were flown and fertilized from the mushrooms collected from nature, were released to the designated areas. The next generation of butterflies was studied in the rest of the pieces.

Observations were made every 3 days until the butterflies laid eggs and died. Observations revealed that butterflies continued to lay eggs on the cotton plant for 12 days. At an air temperature of 27 0C and a humidity of 60-65%, the maximum number of eggs laid by butterflies was on average 650 eggs. Of these, 23.5% (155.6) were sterile, 19.9% (175) undeveloped eggs. Or 40.9% of eggs laid did not hatch worms. Distribution of species of tunlams that damage agricultural crops in the flooded areas of Syrdarya region. The level of encounter was studied in 4 quarters of the year in "Hosilabad f/x" of Gulistan district of Syrdarya region, "Bek Kalaster" of Mirzaabad district, "Inderama cluster" of Sardoba district. In our research conducted in the 1st quarter, the incidence of pests in the Mirzaabad area of Tunlam compared to the Gulistan district was lower in January-March (Table 1).

Table 1

Monitoring of the noctudae spread in the cotton field agrobiocenosis and their development in flooded areas of Syrdarya region in January-March

(Guliston-"Hosilabad f/x", Mirzaabad-"Bek kalaster", Sardoba-"Inderama cluster" reas 2021-2023)

№	Latin name	Level of encounter		
		A non-flooded area		Flooded area
		Gulistan (Hosilabad f/x)	Mirzaabad (Bek Kalaster)	Sardoba cluster
1.	<i>Agrotis segetum</i> Den.et Schiff	+	-	+
2.	<i>A. obesa.</i> B	+	-	-
3.	<i>A.exclamationis.</i> L	+	-	-
4.	<i>Autographa gamma.</i> L	+	-	-
5.	<i>Helicoverpa armigera.</i> Hbn	++	-	+
7.	<i>Ochopleura flammarta</i> Den.et. Schiff	+	+	-
8.	<i>Syngrapha circumflexa</i> L	+	-	-
9.	<i>Xestia c-ni</i> Turn. L	++	-	-
10.	<i>Euxoa agricola</i> B.	++	+	-

Note: Occurrence level - (+++) high, (++) average, (+) low.

In the experiment, in January-March in all regions, the occurrence of pests was observed at a low or moderate level, some did not occur. Pests such as *Helicoverpa armigera.* Hbn, *Hestia c-ni* Turn. L, *Euxoa agricola* V were rarely encountered in the flooded area. In Mirzaabad district, *Ochopleura flammarta* Den.et and wild terns *Euxoa agricola* V. were mostly found in Mirzaabad district, and other terns were not observed. In Sardoba district, it was found that the cotton tunnel and autumn selections were found to a small extent, and no other tunnels were found. Including, in the months of January - March, in the areas where the natural disaster was observed, the number of tunlams in the fields planted with cotton was less than the average (Table 2).

Table 2

Control of the noctudae spread in the cotton field agrobiocenosis and their development in flooded areas of Syrdarya region in April-June

(Guliston-Hosilabad f/x, Mirzaabad-Bek cluster, Sardoba-Inderama cluster areas 2021-2023)

№	Latin name	Level of encounter		
		A non-flooded area		Flooded area
		Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)
1	<i>Agrotis segetum</i> Den.et Schiff	++	-	+
2.	<i>A. obesa.</i> B	+	+	-
3.	<i>A.exclamationis.</i> L	++	+	+
4.	<i>A. xanthographa.</i> F	+	+	-
5.	<i>Autographa gamma.</i> L	++	+	+
6.	<i>Helicoverpa armigera</i> <i>aaaarmiφκφφφφarmigera.Hbn</i>	++	+++	+++
7.	<i>Noctua arbona</i>	+	-	-
8.	<i>Mamestra suase</i> Schiff	++	-	-
9.	<i>Ochopleura flammarta</i> Den.et. Schiff	+	+	-
10.	<i>Syngrapha circumflexa</i> L	+	+	-
11.	<i>Xestia c-ni</i> Turn. L	++	-	-

Note: Occurrence level - (+++) high, (++) average, (+) low.

Table 3

Control of the noctuidae spread in the cotton field agrobiocenosis and their development in flooded areas of Syrdarya region in July-September (Guliston-Hosilabad f/x, Mirzaabad-Bek cluster, Sardoba-Inderama cluster areas 2021-2023)

№	Latin name	Level of encounter		
		A non-flooded area		Flooded area
		Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)
1.	<i>Agrotis segetum</i> Den.et Schiff	++	++	+
2.	<i>A. obesa.</i> B	++	+	-
3.	<i>A.exclamationis.</i> L	+++	++	+
4.	<i>A. xanthographa.</i> F	++	+	-
5.	<i>Autographa gamma.</i> L	++	+	+
6.	<i>Helicoverpa armigera</i> <i>aaaarmiφκφφφφarmigera.Hbn</i>	+++	+++	+++
7.	<i>Noctua arbona</i>	++	+	+
8.	<i>Mamestra suase</i> Schiff	++	+	+
9.	<i>Ochopleura flammarta</i> Den.et. Schiff	++	+	-
10.	<i>Syngrapha circumflexa</i> L	+	+	+
11.	<i>Xestia c-ni</i> Turn. L	++	+	-
12.	<i>Euxoa agricola</i> B.	-	-	-

Note: Occurrence level - (+++) high, (++) average, (+) low.

In the months of April-June of our research, in the areas of Syrdarya region where the natural disaster was observed, the level of occurrence of tunlams, especially (*Helicoverpa armigera*), was observed in Sardoba district and Mirzaabad districts. As a result of research, it became known that the area with the least number of pests (Noctuidae) was Sardoba district (Table 3).

In the third quarter of the year, in July-September, the meeting of eggs and larvae of moths was the highest indicator. It was observed that the cotton boll weevil (*Helicoverpa armigera*) was found in the areas where the natural disaster was observed and in the areas where it was not observed. Wild nightshade (*Euxoa agricola* V) was not observed in all three regions according to the results of observations. Parasitic

and predatory entomophages of nightshades were encountered in cotton fields during our experiment (Table 4).

Table 4

Distribution and development of parasitic and predator entomophages in the cotton agrobiocenosis in flooded areas of Syrdarya region

(Guliston-Hosilabad f/x, Mirzaabad-Bek cluster, Sardoba-Inderama cluster areas 2021-2023)

Note: Occurrence level - (+++) high, (++) average, (+) low.

It was observed that parasitic entomophages such as trichogramma pintoii, trichogramma evenes and bracon (Bracon hebetor say) were found. Entomophagous encounters were lower in flooded areas than in non-flooded areas. In addition to these parasitic entomophages, predatory entomophages of nightshades were also found in the cotton crop.

According to this, among the predatory entomophages of the tunlams, Golden-eyed (Chysopa carnea), Khanqizi (Coccinellidae), Qandala (Orius niger), Qandala (Nabius ferus) were found. In particular, in the area where there was no natural disaster, the level of encounter of natural predatory entomophages was average. In the areas of Sardoba and Mirzaabad, the meeting of predatory entomophages was rarely observed.

Conclusion: The cotton agrobiocenosis in the flooded area is much less compared to the areas that were not affected by tundra, and some species such as bollworm, autumn tundra were very high, some tundra species were not found.

As a result of the research, it was observed that the number of pests is greater than natural entomophages in the areas where a natural disaster was observed, especially the ratio of the number of ants to entomophages was much higher.

In the areas flooded by the Syr Darya, the natural biosphere was disturbed, including the increase in the number of pests. Among the predatory entomophages in the cotton fields, the golden-eyed (shrysopa carnea) and coccinellidae (coccinellidae) entomophages were more common than other entomophages.

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№	Latin name	Level of encounter		
		A non-flooded area		Flooded area
		Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)	Gulistan (Hosilabad f/x)
1.	<i>Trichogramma pintoii</i>	++	+	+
2.	<i>Trichogramma evenes</i>	+	+	-
3.	<i>Bracon hebetor Say</i>	++	-	+
4.	<i>Chysopa carnea</i>	++	+	+
5.	Coccinellidae	++	+	+
6.	<i>Orius niger</i>	+	+	+
7.	<i>Nabius ferus</i>	++	-	+

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