



MEASURES TO CONTROL THE HARMFUL WHEAT TURTLE IN THE CONDITIONS OF BUKHARA REGION.

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Article history:	Abstract:
Received: January 11 th 2022 Accepted: February 11 th 2022 Published: March 30 th 2022	In this article, cereals grown in Bukhara region are damaged in late April and May by harmful wheat turtle, leaves, stems and grains, which reduce the yield of grain crops by up to 50% if no control measures are taken. If farmers fight against harmful wheat turtle on the basis of their phenological development, the grain crop will be fully preserved.
Keywords: Pests, harmful wheat turtle, imago, milk ripening, wax ripening, full ripening, goldfish, flowering, wheat, accumulation, weeding, insects	

Agriculture is an important sector of the Uzbek economy. This sector will meet the demand of the country's population for food products, and the processing industry for raw materials. About 90% of food products are produced in the agricultural sector. One of the main factors in obtaining a rich harvest from agricultural crops and maintaining the yield is the protection against pests, diseases and weeds [1,2,3,4].

Many scientists have noted that the protein content of wheat grains is affected by soil moisture, fertility, especially drought, and the presence of more or less nitrogen fertilizers [5,6].

Soil fertility is also affected by climate temperature, mineral fertilizers, pests. For example, irrigation of winter wheat can increase yields by 4-5 times. However, harmful wheat turtle reduce productivity by 40-50% [7,8,9].

At present, more than 50 species of pests have been observed in grain crops in our country. The most common of these are grain sap, wheat thrips, noxious weevils, slime worms, buzzing beetles, Swedish and Gessen mosquitoes, cicada and others. Yields can be reduced by 30-50% when wheat is infested with pests. To effectively control them, it is necessary to monitor the spread of pests every week from the time of weeding, when the average daily air temperature is 8-10 °C. Harmful wheat turtle infect leaves, stalks and ears of wheat and barley, the pest is more common in desert and pre-desert areas. The adult is 10-12 mm tall, the body is yellow or yellowish-gray, the surface is marble-patterned, there are 2 white spots on the bottom of the shield. The shield is well developed and extends to the end of the abdomen, the ankle being equal to the front end of the head. The front of the head is blunt, the height of the head equal to the width. The larval body differs from the mature offspring by its small size, roundness, and winglessness. At a young age, the larva becomes round, yellowish-gray, and as it grows, its body lengthens and turns pale. At the age of 2, the perforated glandular hole is clearly visible. By the age of 5, wing and shield beginnings appear. The size of the larvae is up to 10mm. Eggs are spherical, greener, and eggs infested with parasites become darker. The adult hasva winters under or under the leaves of a tree, between or under the wheat turtle in a dry cell. Some mature imagos overwinter in winter in uncultivated areas of the field and at the root of shrubs. equal to the anterior end of the kanshari head. The front of the head is blunt, the height of the head equal to the width. The larval body differs from the mature offspring by its small size, roundness, and winglessness. At a young age, the larva becomes round, yellowish-gray, and as it grows, its body lengthens and turns pale. At the age of 2, the perforated glandular hole is clearly visible. By the age of 5, wing and shield beginnings appear. The size of the larvae is up to 10mm. Eggs are spherical, greener, and eggs infested with parasites become darker. The adult hasva winters under or under the leaves of a tree, between or under the wheat turtle in a dry cell. Some mature imagos overwinter in winter in uncultivated areas of the field and at the root of shrubs. equal to the anterior end of the kanshari head. The front of the head is blunt, the height of the head equal to the width. The larval body differs from the mature offspring by its small size, roundness, and winglessness. At a young age, the larva becomes round, yellowish-gray, and as it grows, its body lengthens and turns pale. At the age of 2, the perforated glandular hole is clearly visible. By the age of 5, wing and shield beginnings appear. The size of the larvae is up to 10mm. Eggs are spherical, greener, and eggs infested with parasites become darker. The adult hasva winters under or under the leaves of a tree, between or under the wheat turtle in a dry cell. Some mature imagos overwinter in winter in uncultivated areas of the field and at the root of shrubs. The larval body differs from the mature offspring by its small size, roundness, and winglessness. At a

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Mature seeds (imago) do not wake up at the same time in the spring. They first appear in arable lands planted in the plains, and then in areas close to the desert. In general, imago flies for 20-50 days, so 20-30 days is the maximum amount. When the average 10-day temperature is + 10°C, the first caterpillars begin to fly. When the soil temperature reaches + 17°C, the flight of hawks becomes mass. If it is wheat and above, the process of laying harmful hashish eggs begins. This coincides with the period of accumulation or germination of wheat, causing severe damage to the stems and leaves.

As a result of observations carried out in the districts of Bukhara region in 2020-2021, it was found that in the districts where grain is grown, harmful wheat turtle began to emerge from the winter on March 3-10. The first larvae, which lay from 3–10 days in March to April - 1–10 days in May, appear on 1–2–10 days in April, and the larvae appear by the end of June. The first mature hawks of the new generation appeared on 3-10 days of April, and the mature hawks went to hibernation from 1-10 days of June (Table 1).

Table 1.
Phenological development of harmful turtle.
Average data for 2020-2021 in the districts of Bukhara region.

districts	March			April			may			June		
	1	2	3	1	2	3	1	2	3	1	2	3
	a	a	a	t	t	s	f	mr	wr	fr		
Shofirkon	(+)	(+)	(+)	(+)	+	+	+					
				+				
								-	-	-	-	-
										+	+	(+)
Jondor	a	a	t	t	s	f	mr	wr	fr			
	(+)	(+)	(+)	+	+	+						
			+		.	.	.					
					-	-	-	-	-	-	-	-
										+	(+)	(+)
Karakul	(+)	(+)	+	+	+							
		+		.	.	.						
				-	-	-	-	-	-	-		
									+	(+)	(+)	(+)

Symbols:

(+) - the seed of maturity in the period of rest;

+ - flight of a mature breed;

. - eggs;

- - young larvae;

Stages of development of wheat

a- accumulation

t - tubing

s - spike

f - flowering

MR- milky ripeness

WR - wax ripeness

FR - full ripeness.

Harmful insects are sucking insects, and as a result of sucking the sap from the leaves, stems and ears, the yield is reduced by up to 50%. One female lays an average of 100-180 or even 300 eggs and gives birth once a year. Hasva infects the leaves, stems and spikes of the plant during adult and larval stages. Damaged grain is twisted, not fully ripened, becomes useless, the amount of gluten and yield is reduced. If an average of 2 mature breeds of pests or 7-8 larvae hatched from fresh eggs are detected in 1 square meter area, chemical treatment will be required. Agrotechnical, selection, biological and chemical control system against pests is recommended. Agrotechnical measures play a special role in the fight against wheat turtle. This includes, first of all, plowing the fields affected by wheat turtle after the harvest. As a result of these immediate measures, grain and extra-fed harmful wheat turtle, which may be additional fodder for harmful wheat turtle, are buried in the ground and destroyed. Feeding grain crops sown in early autumn with mineral fertilizers, carrying out high-level agro-technical measures before sowing spring crops - tillage, fertilization, early sowing of high-quality seeds, will significantly reduce the damage of wheat turtle.

Selection of hardy varieties, when early maturing varieties are planted, khasva does not fully develop in them. At present, there are varieties that are resistant to wheat turtle and unfavorable for the development of the pest. Planting these will ensure crop protection at no additional cost. There are also varieties that are not affected by the enzyme in hasva saliva and are not damaged. Carry out the harvest without delay. This means that if the grain is harvested before the milk-wax ripening period and then threshed, the pest does not have time to fully feed and becomes physiologically weak and dies a lot. In addition, many hawthorn larvae are mechanically crushed and die. The role of the golden eye in the fight against harmful wheat turtle is great. Therefore, for their development it is necessary to create conditions by leaving balls of straw around the field in the fall. It is necessary to establish biolaboratories in the grain-growing areas, where, along with other cousins, goldfish should be propagated in a special way and taken to the field. It is necessary to plan chemical protection of fields with high density of pests. To do this, it is recommended to carry out the following work. The main wintering ground for pests and a number of other insects are mainly field beetles. After the air temperature in the identified insects exceeds 10-12°C (March 1-2), apply to the edges of 20-30 m of the planted stalks and on both sides of the stalks with the following drugs using a tractor OVX-28 tractor sprayer or a motorized hand apparatus. to be treated with: BI-58, 40em.k.- 1,5l / ha, Fufanon, 57em.k.-1,2-2,0l / ha, Tsiperfos (Nurel-D), - 0.15-0.2l / ga, Sumi-alpha, 5% em.k.

The time from the time of application of the above drugs in the field to the cutting of mulberry leaves around the field should be 45-50 days.

The above-mentioned insecticides can be re-applied if the wheat is then harvested and the husk increases and threatens the crop. In this case, firstly, mulberry trees should be at a distance of 400-500m or more from the edge of the field, and secondly, not OVX-28 sprayer, but rod tractor sprayers and hand tools.

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