

Original Research Article

**Entomologic changes new scheme of rotating cultures “cotton-grain”**

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**Abstract:** Maintenance of requirements of the population in grain in Uzbekistan after 1991 has demanded an increase of grain crops sowing area. Therefore, after creation of the new scheme of rotating cultures (cotton-grain) wheat, mainly winter wheat, began to be sown on the area equal to cotton. Our ancestors have not uselessly told “The sluggard does not plough after the season, so begs during the harvest and has nothing”. Therefore ploughed field in optimal autumn term created foundation of next year stable yield. After having been an independent republic one of the actuality issues is to gain grain productivity.

**Keywords:** Winter wheat, sunn pest, aphid, thrips, winter cutworm, cotton bollworm, entomophages.

**INTRODUCTION**

For this reason, cotton sown area has to be equal to the area which is sown wheat. To manage this situation, generally winter wheat is planned to be sown to a large quantity area (60-70%) in autumn while thriving period of cotton plant. According to professor Hodzhaev’s [1] opinion it is affirmed that the several disadvantages of sowing cotton inter-row spacing while it is growing.

Including,

- pests spend their winter time in successfully;
- increasing weeds day to day;
- remains of vilt and other diseases spend winter in roots and stubble part of a cotton plant successfully.

**MATERIALS AND METHODS**

With a view of doing tests how much these issues true wick above mentioned, we conducted the following types of field experiments and observations in sort of wheat “Yarsart” and “Tanya”, in order to study harmfulness of pests in open arable and cleaned space after sowing wheat and to develop with the beneficial pests (entomophage).

- 1-variant: the area where cotton inter-row spacing;
- 2-variant: arable open space where cleaned from cotton plant stalks.

Field experiments were conducted in the support station of Uzbek Scientific Research Institute of Plants Protection in Fergana region, Bagdad district.

In each separated fields has been conducted the same agrotechnic cultivation (sowing, nutrition and irrigation).

**RESULTS AND DISCUSSION**

Wheat fields on the test have been observed during the season with the point of entomology. Root pests such as winter cutworm (*Agrotis segetum* Schiff), main pests as sunn pest (*Eurygaster integriceps* Put), aphids (*Aphididae*), thrips (*Thripidae*) and cotton bollworm (*Helicoverpa armigera* Hb.) thriving were observed (tables 1-2).

1-table indexes apparent that in both variants there is not much differens between thriving of sunn pest. However, especially aphids and thrips’ thriving was observed in wheat fields. In this state, there was much more density of harmful pests in without ploughed field which sown cotton inter-row spacing than ploughed area. It is important to mention that nests of aphids is not destroyed when the area is not ploughed, consequently it is said that 55-60% of pupa spend their winter time successfully and moth flies out [2].

**Table-1: Development sucker pests in wheat fields which sown various ways**  
*UzSRIPP in Fergana region, Bagdad district 2015-2016 yy.*

№	Variants	A average density of sunn pest (m <sup>2</sup> /number)							
		20.III.16	30.III.	10.IV.	20.IV	30.IV	10.V	20.V	30.V.16
1.	Cotton sown inter-row spacing	0,7	1,3	2,7	4,0	4,7	5,3	8,7	4,3
2.	Open spacing	0	0,7	1,7	3,3	4,3	5,0	8,3	4,3
Density of aphids (average number per plant, number)									
1.	Cotton sown inter-row spacing	14,7	18,3	22,0	31,7	42,3	77,7	54,3	19,7
2.	Open spacing	4,3	12,7	18,3	24,0	36,7	69,0	51,7	17,0
Density of thrips (average number per plant, number)									
1.	Cotton sown inter-row spacing	4,3*+0**	5,7+1,3	4,0+3,3	0+5,7	0+6,6	0+8,7	0+11,3	0+5,3
2.	Open spacing	0+0	2,3+0	3,7+2,3	0+3,3	0+4,7	0+8,0	0+10,7	0+5,0

\*-*Thrips tabaci* Lind., \*\*-*Haplothrips tritici* Kurd.

In order to study thriving of winter shovel and cotton bollworm in wheat fields which sown with different ways are placed special pheromone catcher (PC) which produced in Bioorganic chemistry institute and have been observed and controlled (5 for each field), (table 2).

For example, the density of winter cutworm was 5,0 times, cotton bollworm was much more 5,6

time until 25 May in 2016. Thereby, we observed such evidence that cotton bollworm was damaged to wheat ears and it was unknown situation. Similar to this state in this period that only one cotton bollworm was determined per 250-300 m<sup>2</sup> wheat fields. Of course, they are not many; however, it should be taken into consideration. Because, the winter cutworm and cotton bollworm which spend winter time successfully damages seriously to vegetation around it.

**Table-2: Development of winter cutworm and cotton bollworm in winter wheat which sown in different ways**  
*UzSRIPP in Fergana region, Bagdad district 2015-2016 yy.*

№	Variants	Controlled area, ha	Arable term	The number of moth until 25 May caught in 5 catcher	
				winter cutworm	cotton bollworm
1.	Cotton sown inter-row spacing	9,5	Not arable	142,0	118,0
2.	Open spacing	9,0	15. 10. 2015.	28,0	21,0

Our next observation was to control beneficial insects (*coccinellidae*, *cornea*) and their breeding in wheat fields which sown in different ways. The density

was differed of beneficial insects in the fields (entomophage) table 3.

**Table-3: Development of entomophages in winter wheat which sown in different ways**  
*UzSRIPP in Fergana region, Bagdad district 2015-2016 yy.*

№	Variants	Density of entomophages (total number for per 10 plant, number)							
		coccinellidae				C.cornea			
		20.III	10.IV	30.IV	20.V	20.III	10.IV	30.IV	20.V
1.	Cotton sown inter-row spacing	2,0*	6,6	7,3	8,0	2,7	5,6	7,7	8,3
2.	Open spacing	0	5,7	6,6	7,7	0	5,0	6,6	7,3

\*note: in both entomophages larvae and perfect creature has been together computed

Aphidophage-coccinellidae-Coccinellidae's family is constituted the main part of entomothenoza

and the density of *C. cornea* was rather much in wheat fields. We can say it can be caused being different

harmful organisms for foodstuff. But, when compare to ratio between beneficial insects and pests in cotton inter-row spacing wheat field it was defined that existing biophone could not defense itself.

#### CONCLUSIONS

- In this type of sowing the number of aphids was 1,4 times, thrips was more than 2,3 times, root rodent winter cutworm's moth was 5,0 times, cotton bollworm was 5,6 times much.
- Entomothenez consists the main part of aphidophage-coccinellidae's family and *C.cornea* density was much in the field which sown cotton inter-row spacing. It causes being different harmful nutrition organisms.

#### REFERENCES

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