

## INFLUENCE OF AGROTECHNICAL MEASURES ON BOILER DAMAGE IN GROWING MEDIUM GRADES OF COTTON

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**Abstract.** *The article describes the effect of improved agrotechnical measures against the damage of herbivorous caterpillars, which cause great damage to the cotton crop in the farms specializing in cotton growing in the Surkhondarya region of the southern region of the Republic-seedling thickness and thinning methods. When chemical spraying was carried out, the degree of damage to the candala was 7.5% less compared to the non-chilling option is scientifically justified.*

**Key words:** *candala, cotton, seedling thickness, pruning methods, productivity.*

## ВЛИЯНИЕ АГРОТЕХНИЧЕСКИХ МЕРОПРИЯТИЙ НА ПОВРЕЖДЕНИЕ КОТЛОВ ПРИ ВЫРАЩИВАНИИ ХЛОПКА СРЕДНИХ СОРТОВ

**Аннотация.** *В статье описывается действие усовершенствованных агротехнических мероприятий против поражения растительными гусеницами, наносящими большой ущерб урожаю хлопчатника в хозяйствах, специализирующихся на хлопководстве Сурхандарьинской области южного региона республики, методами толщины всходов и прореживания. При проведении химического опрыскивания степень повреждения кандалы была на 7,5 % меньше по сравнению с неохлаждающим вариантом научно обосновано.*

**Ключевые слова:** *кандала, хлопчатник, толщина сеянцев, способы обрезки, продуктивность.*

## INTRODUCTION

Global climate change and anthropogenic factors cause a change in the level of negativity of faunal components in agrocenoses and the emergence of new pests. In particular, in the last 10-15 years, about 20 species of harmful caterpillars belonging to the genera Creontiades, Lygus, and Apolygus have spread widely in the cotton agro-ecosystems of several countries where cotton cultivation has developed, such as the USA, Australia, China, India, Congo, Sudan, and Egypt, causing great damage to productivity.

Most of the insects in this group are herbivorous and feed on more than 200 plant species. For example, in the USA, *Lygus hesperus* species, belonging to the genus *Lygus*, cause economic damage in the amount of 30 million dollars per year to the cotton crop and 40 million dollars to other agricultural crops [7].

Even in our republic, despite the reduction of cotton fields in recent years, the damage caused by pests is increasing. because there are favorable conditions for the development and spread of pests in cotton fields in our country. This situation in cotton agrobiocenosis leads to the increase of some types of pests.

A number of measures are being implemented in our republic to protect agricultural crops from harmful organisms. In particular, 10 billion per year from the state budget will be allocated for the fight against *Creontiades pallidus*, which is spread over 143,714 hectares of cotton fields

in the season of 2018, and 78,500 hectares in 2019, in the Surkhondarya region, the area where the ants are most common. More than a soum was spent.

In order to solve the above problems, it is of great scientific and practical importance to correctly place cotton varieties, plant varieties with high quality and high fiber yield, carry out high-quality agro-technical activities in time, explain the spread of candals, the characteristics of damage, and develop effective agro-technical methods of combating harmful species.

## **MATERIALS AND METHODS**

In the conditions of the Surkhondarya region, five areas with a very high density of herbivorous cotton weevils were identified, and the number of cotton weevils in these places ranged from 150-200 to 350-400 per 100 bushels of cotton. Failure to control pests results in a yield loss of about 30%. In order to avoid this, it is necessary to regularly introduce scientific and practical results into production [4].

In the conditions of the Surkhondarya region, keeping the optimal number of 90–100,000/ha plants, watering cotton at lower rates, carrying out cotton at the most convenient times, using high-quality cotton, and using Entogean in cotton at convenient times, has been found to be an important factor in reducing the number of bollworms in the cotton plant [5].

Kandala first severely damages young leaves and flower buds, then severely damages pods, flower and fruit nodes, unripe seeds, growing points, and stems. One-year-old larvae damage plant parts in the lower layer of the plant. The generation of the second age destroys the upper part of the plant, and the adult larvae damage the plant's fruit organs [6].

In the conditions of the Surkhondarya region, chemical weeding gave good results, and it was found that 5.0–4.1 ts additional yield was obtained compared to manual weeding [2].

The duration of chilpish can vary depending on the weather conditions of the region, the thickness of the seedling, the development of the cotton and the variety. If the thickness of the seedling is 140-160 thousand bushes, 12–14 harvest branches; if there are 80-90 thousand bushes, it is appropriate to carry out pruning on 16–17 harvest branches [3].

When the drug Entogean was used in cotton along with chilpish, there were 20.8 pieces of crop elements in one plant, of which 1.3 pieces, i.e., 6.8% of the crop elements, were infected by kandala. In the plant, only 20 pieces of crop elements were harvested, of which 7.85% were damaged by kandala. In the case of cotton, 17.5 units of the crop were harvested, and 3.7 units, i.e., 21.8%, were damaged [1].

The research was conducted in field conditions, based on methodological manuals such as "Metodika Gosudarstvennogo sortoispytaniya selskohozyaystvennykh kultur", "Methods of conducting field experiments". Productivity indicators were mathematically processed in the dispersion analysis method based on the "Metodika polevogo opyta" manual by B.A. Dospheov.

Field experiments were conducted in the conditions of the barren grassland soils of the Surkhondarya region during 2018-2020. In the experiment, the effect of agrotechnical measures on the damage of herbivorous caterpillars was studied in the field where cotton with medium fibers "Buxoro-102" was cultivated.

## **RESULTS**

The growth and development of cotton is affected by soil fertility, planting period and standards, irrigation, feeding, inter-row cultivation, mulching methods, defoliation period and standards, and cotton diseases. In our conducted scientific research, the effect of seedling

thickness, pruning methods on the degree of damage to cotton by herbivorous caterpillars was studied.

In the experiment, the thin-fiber cotton variety "Buxoro-102" was planted in 2 different seedling thicknesses (90-100 and 110-120 thousand bushels/ha) in the variants of unfed, weeded, and weeded with entogene 15.08, 30.08 and 15.09. Observations were made on the degree of damage by herbivorous candala on dates (Table 1).

**Table 1**

**The degree of damage to cotton crop elements by Candala**

№	Seedling thickness, thousand bushels	Chilping methods	Production elements, pcs	Damaged crop elements, pcs	Damage percentage in %
15.08.2020					
1	90-100	There is no chilpish is held	23.0	1.8	7.8
2		Chilpish is held	25.0	1.4	5.6
3		Entogene was used	26.5	0.8	3.0
4	110-120	There is no chilpish is held	20.6	2.1	10.2
5		Chilpish is held	22.2	1.6	7.2
6		Entogene was used	24.3	1.3	5.3
30.08. 2020					
1	90-100	There is no chilpish is held	25.6	2.6	10.1
2		Chilpish is held	27.0	2.3	8.5
3		Entogene was used	27.5	2.1	7.6
4	110-120	There is no chilpish is held	23.2	3.1	13.3
5		Chilpish is held	24.4	2.6	10.6
6		Entogene was used	25.0	2.2	8.8
15.09. 2020					
1	90-100	There is no chilpish is held	23.4	3.4	14.5
2		Chilpish is held	27.5	2.3	8.4
3		Entogene was used	28.3	2.0	7.0
4	110-120	There is no chilpish is held	21.1	3.8	18.0
5		Chilpish is held	24.6	2.7	10.9
6		Entogene was used	26.2	2.2	8.4

## DISCUSSION

According to the received information, during the observation conducted on August 15, the number of harvest elements in cotton was 20.6-26.5 pieces, of which 0.8-2.1 pieces were damaged by kandala. The most damage was observed in the 4th option, where no pruning was carried out at the thickness of 110-120 thousand bushes, and 2.1 grains of the crop elements per bush were damaged by kandala. According to the results of the phenological observation carried out on August 30, when the number of cotton plants is 90-100 thousand plants per hectare, the number of yield elements is 25.6-27.5 units, and 110–120 thousand plants are 2.4-2.6 units more than the seedling thickness, and the degree of damage by candala It decreased to 1.2-3.2%.

In the experiment, 90-100 thousand seedlings of the cotton variety "Buxoro-102" were left per hectare, and in the variants of no weeding, weeding, and chemical weeding with entogene, the highest result was observed in the option of chemical weeding. According to the results of the observation on September 15, the yield elements in cotton were 23/4-28.3 units, of

which 2.0-3.4 units were damaged by the bollworm. The highest rate of damage to cotton was observed in the non-hand weeding option, with 6.1% more damage than the hand weeding option and 7.5% more damage than the chemical weeding option.

## CONCLUSIONS

In the conditions of the barren meadow soils of the Surkhondarya region of the southern region of our republic, it was observed that the number of herbivorous caterpillars decreased, the cotton yield increased, and the technological quality indicators of cotton fiber improved when the optimum planting thickness and the method of weeding were carried out in a timely manner.

In order to obtain a high and high-quality cotton crop from medium--fiber cotton varieties and to increase their resistance to herbivorous caterpillars, it is recommended to take care of them at a thickness of 90-100 thousand bushels per hectare and carry out chemical weeding (using entogene).

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