

THE ALTERNATE USE OF HERBICIDES IN THE CHEMICAL CONTROL OF WEEDS IN COTTON CULTIVATION, THE EFFECT OF COTTON ON THE WEIGHT AND YIELD OF A SINGLE POD

F. M. Xasanova

Candidate of Agricultural Sciences, Professor

D. R. Mavlyanov

Doctor of Philosophy in Agricultural Sciences

M. A. Eshonqulov

Base Doctoral Student

ABSTRACT:

The article describes the effect of herbicides applied to the sowing of cotton and in the pre-sowing period on the weight and yield of cotton in a single stalk of cotton.

Keywords: Cotton, weeds, herbicides, growth and development are the weight of a single stalk of cotton, the yield of cotton.

Today, more than 3,000 species of weeds are prevalent in world agriculture, and more than 200 species of them cause enormous economic damage to agriculture. There are more than 30,000 species of weeds in irrigated agriculture, of which 209 species, or 0.7% of the total, are considered extremely dangerous. Many years of research by scientists have revealed that 74 species of perennial and annual weeds are found in cotton fields, of which 35 species are the most harmful [1]. The quality of cotton fiber and seeds in the country, its weight depends on the quality of raw materials, which in turn depends on the natural conditions of the regions, soil fertility, land reclamation, cotton navigation in the farmer's field, preparation of lands for plowing and sowing, seed quality and fertility. It depends on the timely implementation of agro-technical measures in crop care, the correct organization of the fight against weeds, diseases and pests from a scientific and practical point of view, the level of introduction of cotton science and technology, advanced experience in farm production.

One of the most pressing issues in agriculture is the development of technology for the application of herbicides against weeds and perennial weeds in the Syrdarya region in the conditions of old irrigated, grazing light gray soils.

Research methods

The scientific research was carried out in the conditions of moderately saline soils of the Syrdarya scientific-experimental station of PSUEAITI, and in the experimental field the medium-fiber Sultan variety of cotton was planted. Field experiments were conducted on the basis of methodological manuals "Methods of conducting field experiments" [3], and the options of the experimental system were placed in 3 tiers by rendition method. The experiment was performed in three variants of 12 variants, with a total area of 0.60 m², each variant area of 162 m².

The field experiment was conducted in the following system:

Table 1 Experimental system

№	Option name	Herbicide application rate	Shelf life	Crop type
				2019
1	Agrotechnical measures in production (Control)			Cotton
2	Etalon Herbicide "Stomp- 33% e.k"	2.0 l / ha	Along with planting	Cotton
3	Herbicide "Gaytan k.e."	1.5 l / ha	Along with planting	
4	Herbicide "Gaytan k.e."	2.0 l / ha	Along with planting	Cotton
5	Herbicide "Gaytan k.e." + "Miura 125 g / l k.e."	1.5 l / ha + 1.5 l / ha	Along with planting + combing	Cotton
6	Herbicide "Gaytan k.e." + "Miura 125 g / l k.e."	2.0 l / ha + 2.0 l / ha	Along with planting + mowing	Cotton
7	Herbicide "Gaytan k.e." + "Zelek Super 104 g / l em.k."	2.0 l / ha + 1.0 l / ha	Along with planting + combing	Cotton
8	Herbicide "Zelek Super 104 g / l em.k."	1.0 l / ha	Shonalashda	Cotton
9	Herbicide "Zelek Super 104 g / l em.k."	1.5 l / ha	During the cotton ripening period	Cotton
10	Herbicide "Zelek Super 104 g / l em.k."	2.0 l / ha	During the cotton ripening period	Cotton
11	Herbicide "Zelek Super 104 g / l em.k."	2.5 l / ha	During the cotton ripening period	Cotton
12	Chizel (18-20 cm) + borona + plow (28-30 cm)	2.0 l / ha	After the cotton harvest	Cotton

Research results

Stomp 33% em.k as a standard against weeds along with seed sowing. Option 2 is 2.0 l / ha and Gaytan k.e. herbicide was sprayed by hand apparatus at a rate of 1.5 l / ha for 3-5 options and 2.0 l / ha for 4-6-7 options. The effectiveness of the above herbicides was observed 2 times after 15 and 30 days, the effect on annual and perennial weeds. Of the annual weeds, *Portulaca oleracea* L., *Karelinia caspia* (pall.) Less., *Amaranthus retroflexus*, and *Amaranthus hybridus* L. did not germinate for 15 days in herbicide-treated variants. Perennial weeds (*Convolvulus arvensis*), salomalaykum (*Cyperus rotundus* L.) and albagi (*Albagi camelorum*) were observed to germinate up to 93.2% less than controls. In the pre-cotton period, Miura was given 125 g / l k.e. for options 5-6 and Zelek Super 104 g / l em.k. for option 7. as a result of the application of herbicides, the number of annual and perennial weeds decreased by 44-64% and 81-93%, respectively.

In order to determine the effect of the application of different herbicides against weeds in the experimental field on the yield of cultivated cotton, the average weight of one pod and the yield of the experimental field were determined by collecting cotton from the open rows in each variant and return.

In the effective control of weeds can not achieve good results using only herbicides. Because there are also disadvantages of using different herbicides against weeds (environmental degradation, human and animal health issues, etc.). Therefore, in the fight against weeds, the widespread use of various methods of tillage, thermal management of weeds, the use of geographic information systems is effective [2].

As a result of alternate use of herbicides in the control of weeds in the experimental field, the number of annual and perennial weeds increased by 45-94%, the coefficient of nutrient uptake of cotton in the soil increased, the weight of cotton increased by the end of the cotton field. In the control variant of the experimental field, the average weight of one pod was 5.9 grams, along with the sowing of seeds "Gaytan k.e." 2.0 l / ha of herbicide and Zelek Super 104 g / l em.k. In the variant (7), where the herbicide was applied alternately at the rate of 1.0 l / ha, the average weight of one bucket was 6.5 grams, and the highest value was achieved, along with the sowing of seeds "Gaytan k.e." 1.5 l / ha of herbicide and Miura 125

g / 1 k.e. The average weight of one bucket was 6.1 grams in variant 5, where the herbicide was applied alternately at the rate of 1.5 l / ha. It should be noted that the Miura 125 g / 1 k.e. a high dose of the herbicide showed its effect on the growth and development of the cotton, with an average weight of 5.9 grams per pod, which was the same weight as the control variant.



Figure 1 Effect of norms and duration of applied herbicides on cotton weight per unit area Stomp 33% k.e., Duala 96% k.e., Zelek Super 10.8% k.e., Kotoran 50% s.p. in cotton cultivation in the conditions of old irrigated light gray soils of South Kazakhstan region. Compared to the norm of 1.6 l / ha. Stomp 33% k.e. when the herbicide was applied at a rate of 4 l / ha against annual weeds, the effect was observed to be 83.4% after 30 days, 100% after 60 days, 90% for perennial weeds, and the yield was increased to 3.5 ts / ha [4].

By sowing seeds in the experimental field, 2.0 l / ha Gaytan em.k. and 1.0 l / ha Zelek Super 104 g / 1 em.k applied during cotton cultivation. herbicides affected the number of annual and perennial weeds by 81.2-75%, and the coefficient of uptake of mineral fertilizers in the soil of cotton increased due to the reduction of weeds between rows of cotton. As a result, the harvest weight of cotton increased, leading to higher cotton yields. The average cotton yield in the control variant of the experimental field was 37.4 quintals per hectare, while the highest yield in the variants using herbicide was 42.8 quintals / ha in the 7th variant. Yield was 5.4 ts / ha higher than the control variant.



Figure 2 Influence of norms and terms of applied herbicides on cotton yield

In conclusion, it should be noted that in the cultivation of cotton, along with the sowing of weed seeds at the rate of 2 l / ha "Gaytan k.e." Zelek Super 104 g / 1 em.k. Due to the reduction in the number of weeds in the herbicide-sprayed variant, the weight of cotton per bush was 6.5 grams, resulting in a cotton yield of 42.8 ts / ha from the above variant, which is 5.4 ts / ha more than the control variant.

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