INFLUENCE OF HERBICIDAL NORMS ON CEREAL YIELD WHILE SOWING ON CORN FIELDS

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Abstract: *The increase in grain production in Uzbekistan should be provided, first, by increasing productivity. To do this, use all available reserves. In the conditions of modern intensive agriculture, weed control is one of the most important elements of the agricultural system, on which the increase in crop productivity depends. With repeated sowing of leguminous crops in Uzbekistan, the number of crops grown will increase, the fertility of the land will increase, and environmental problems will be found. For this reason, from the group of scientists of the scientific research institute for plant protection, scientific work and experiments are carried out with the aim of destroying extraneous plants that are found among corn crops.*

Key words*: herbicide, preparation, dicotyledonous plants, weed plant, corn, and biological effectiveness.*

Introduction and relevance of the problem.

The need to increase the cultivation of agriculture, to organize the struggle to protect fields from weeds and, on this basis, to achieve high and sustainable corn grain yields requires the introduction of intensive varieties, modern technologies, one of which is an integrated system of measures to combat weeds of this agricultural crop, in including corn. It is widely known that weeds deplete the soil, inhibit the growth and development of corn plants, clog the crop and reduce yield by 20%. In some cases, this figure is even higher. The most common weeds on cornfields are mainly annual dicotyledonous and cereal weeds. Despite agricultural technology, most of the fieldwork that contributes to the increase of weeds between rows remains inaccessible to machines near the plant, around nests and bushels of corn. Labor costs for weeding and hoeing require 29-25 people / day. Per hectare, for which a lot of money is spent annually, and the quality of products is deteriorating and harvesting is difficult. Based on the above question, the development of new, most highly productive herbicides for the control of annual dicotyledonous and cereal weeds in crops of corn is becoming acute.

In solving this global problem, an important place belongs to the search and introduction of new herbicides of selective and selective action, the economic justification is determined by the size of the corn grain yield.

Weeds cause enormous economic damage not only to the rural, but also to the entire economy of the country. They have direct and indirect harm, quantitative and qualitative negative impact on the yield of cultivated crops.

The direct negative effect of weeds on the yield is that weeds reduce soil fertility by consuming water and plant nutrients from the soil. Therefore, sweet clover is one and a half times, and bitter wormwood consumes twice as much water from the soil as corn. Pink sow thistle (Cirsium field) carries out one and a half times more nitrogen from the soil, and two times more potassium than cereals.

Weeds mainly have a more powerful root system, which allows them to consume significantly more water and nutrients than many cultivated plants consume. Therefore, the roots of yellow clover sometimes penetrate the soil to a depth of 5.5 m. The roots of pink thistle in the first year of life reach a depth of 3.5 m, in the second - 5.75 m, and in the third year −7.2 m.

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Materials and methods. Conducting an experiment to test the biological effectiveness of the herbicide Super Stomp, 33% ke The experience was laid in accordance with the "Methodological guidelines for State tests of herbicides in crops", Tashkent, 2007 and the "Methodological guidelines for general questions of experimental work", the reliability of the data on crop yield was determined according to the Methodology of B. A. Dospekhov (1995).

The experiment was carried out according to the approved work program according to the following scheme:

1. Control - no herbicide.
2. Stomp, 33% ke - 4.5 l / ha (reference)
3. Super Stomp, 33% ke - 3.0 l / ha.
4. Super Stomp, 33% ke - 6.0 l / ha.

All herbicide consumption rates were taken according to their weight of the drug.

As shown by the data from the sowing, the seeds of corn in the control variant of the field are littered mainly by annual dicotyledonous and cereal weeds.

Table 1

Types and names of weeds	Accounting date	The number of weeds per 1 sq.m
Amaranth	15 март	3,8
Quinoa		3,5
Black nightshade		3,7
Purslane		4,0
Hibiscus		2,5
Chicken millet		4,5
Gray mice		2,4

Brief description of weeds growing in the field

Tilted Shiritsa –Amaranthus retrflxus. One-year dicotyledonous weed. Blossoms and bears fruit in the second half of summer, from the month of July. Propagated only by seeds, characterized by great fecundity. A highly developed plant can produce up to one and a half million seeds. Seeds germinate at a temperature of + 22-25 ° C. Shiritsa shoots bear fruit throughout the summer, sometimes reaching up to 300 shoots of shoots.

Common Quinoa - Chenopodum album. An annual dicotyledonous weed plant. It is found in countries with a temperate and warm climate. There are 225 species of this plant. The stem is straight, height is 10-100 cm. Blossoms and bears fruit in the second half of summer from July to autumn, propagates exclusively by seeds, one plant can bring 100 thousand seeds. It is found on all crops.

Black nightshade - Solanum nigrum L. Annual dicotyledonous weed. Distributed in Uzbekistan. On average, 1 plant - 4 plants. Shoots appear in the months of April and July. Propagated only by seeds.

Purslane - Portulaca oleracea. An annual dicotyledonous weed plant. It blooms and bears fruit from April to autumn, propagated only by seeds. One plant brings 100,000 small seeds. It is found in all irrigated lands of Uzbekistan. On 1 sq.m on average up to 30 pcs. Distributed in the fields, in gardens and orchards.

Bloated hibiscus - Hibiscus trionum L. Annual dicotyledonous weed plant. It blooms and bears fruit from early spring to late autumn. On 1 sq.m usually 3-4 pieces of hibiscus plants are found. Distributed only by seeds.

Chicken millet - Kurmak –Echinochloa cruss-galli. An annual dicotyledonous plant. Widely distributed in Uzbekistan in irrigated fields. Fertility is high - one weed plant, depending on the bushiness and place of germination, can produce from 5 to 13 thousand seeds. This weed causes the greatest harm to cotton in the early phases of development. There are 15-20 plants per 1 sq. M.

Gray mice - Setaria glauca L. An annual monocotyledonous weed with late development, in which there is a lot of biological similarity with gray mice. It is found on all irrigated lands, fruitfulness is high - one plant can produce from 500 to 800 thousand pcs. seeds, blooms in June-July, bears fruit in the month of August.

Research results.

The results of long-term observations show that the analysis of weather conditions is one of the determining factors in the operation of soil herbicides with high efficiency, especially in conditions of drying of the upper

layer. The main tactic for applying a soil herbicide is to bind the herbicide with soil moisture or to precipitate for no more than 15–20 hours after application.

The optimal time for working with soil herbicides is the soil moisture content in the upper layer at the level of full field moisture capacity. This point needs to be taken into account, since the reserves of productive moisture in the seed layer of the soil (above 5 mm) affect the active movement of C-metolachlor. In conditions of air and soil drought (less than 5 mm), it is useful to embed the soil herbicide to a depth of 2-3 cm after application. Since the mobility of terbutylazine increases under such conditions, this technology enhances the effectiveness of the drug by cohesion of soil particles and herbicide molecules.

The main purpose of the application of the herbicide is to achieve maximum weed control during vegetation without damage to crops, when weeds are far ahead of their growth and may delay its development.

The experience data are presented in table 2. They show that the herbicide Super Stomp, 33% ke Effectively affects annual dicotyledonous and cereal weeds in corn crops, reducing their number to few noticeable quantities. This is especially evident when the counts presented on the 15th day after application on the crops of corn.Here the variant with Super Stomp per 1 sq. M with a norm of 3.0-6.0 l / ha, there were annual dicotyledonous and cereal weeds on average 0.27-0.15 pcs. The biological effectiveness of the herbicide Super Stomp, 33% ke the normal consumption rate is 3.0-6.0 l / ha in the experiment (Table 2) on the 30th day after spraying on corn crops against annual dicotyledonous and cereal crops - 0.24-0.14%; on the 35th day after spraying, respectively, on one-year dicotyledonous and cereal weeds 0.22-0.12, on the 60th day after spraying the herbicide Super Stomp at a rate of 3.0-6.0 l / ha, there were annual dicotyledonous and cereal weeds on average out of 3 accounting per 1 sq.m - 0.24-0.13.

Biological effectiveness of Super Stomp, 33% ke normal consumption is 3.0-6.0 l / ha in the experiment (Table 2) on the 60th day after spraying, respectively, of annual dicotyledonous and cereal: after 15 days - 90.3-94.6%; after 30 days - 92.5-95.6% and after 60 days - 93.5-96.4%.

The biological effectiveness of the herbicide Super Stomp, 33% ke in the consumption rate of 3.0-6.0 l / ha on average of 3 counts shown in the experiment (table 2). After sowing corn and spraying against annual dicotyledonous and cereal weeds, they amounted to 92.2-95.8%.

The table shows that from the action of the tested herbicide Super Stomp, 33% ke all species of annual, dicotyledonous, and cereal weeds were destroyed.

The number of these weeds after spraying on the 15-60th day after counting in the control variant was significantly larger.

It should be noted that in the control variant, the areas left without applying the herbicide were carried out manual weeding of weeds.

Phenological observations were also carried out in the experiment in early June, July, and in the month of August measuring the height of the main stem and other indicators of maize. Accumulation by plants of fruit elements (cobs) was also noted. These data are presented in table 3. Considering them, it can be noted that the maize plants on the experimental version differed from the control (without spraying) and where weeds were manually weed.

table 2

The biological effectiveness of the herbicide Super Stomp, 33% ke

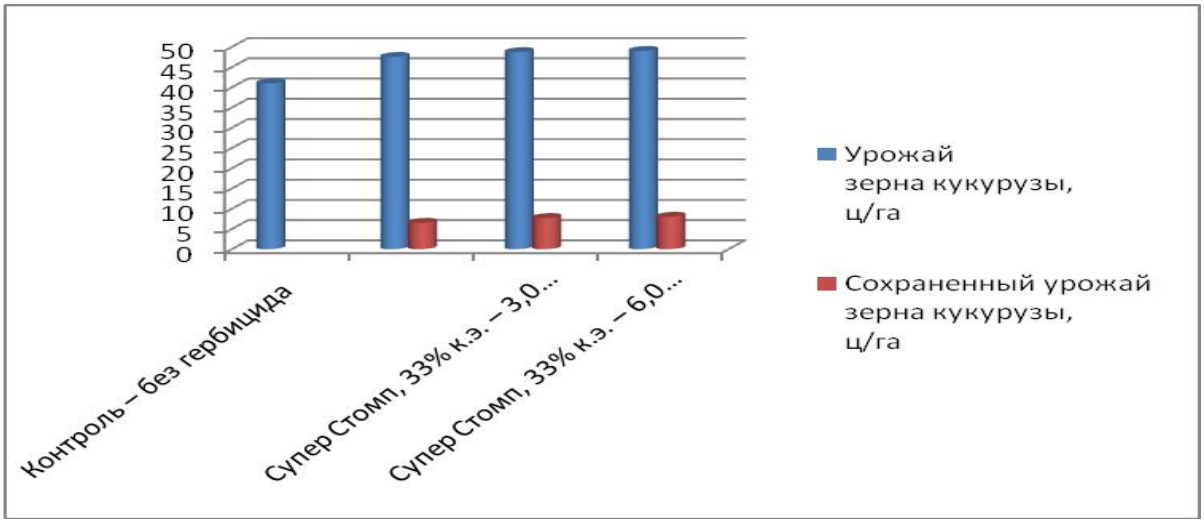
against annual dicotyledonous and cereal weeds by continuous spraying of soil on corn crops in the conditions of Namangan region

			Stomp, 33% ke - 4.5 l / ha (reference)		Super Stomp, 33% ke - 3.0 l / ha		Super Stomp, 33% ke - 6.0 l / ha	
			pcs / m2	%	pcs/m^2	%	pcs/m^2	%

In 15 days								
1	Amaranth	3,3	0,3	90,9	0,3	90,9	0,2	93,9
2	Quinoa	2,9	0,4	86,2	0,3	89,6	0,2	93,1
3	Black nightshade	3,2	0,4	87,5	0,3	90,6	0,1	96,8
4	Purslane	3,4	0,4	88,2	0,3	91,1	0,1	97,0
5	Hibiscus	2,1	0,4	90,4	0,2	90,4	0,2	90,4
6	Chicken millet	3,5	0,4	88,5	0,3	91,4	0,2	94,2
7	Gray mice	2,0	0,2	90,0	0,2	90,0	0,1	95,0
	the average	2,8	0,35	87,5	0,27	90,3	0,15	94,6
In 30 days								
1	Amaranth	3,5	0,3	91,4	0,3	91,4	0,2	94,2
2	Quinoa	3,4	0,3	91,1	0,2	94,1	0,1	97,0
3	Black nightshade	3,5	0,3	91,4	0,3	91,0	0,1	97,1
4	Purslane	3,7	0,3	91,8	0,2	94,5	0,1	97,2
5	Hibiscus	2,3	0,2	91,3	0,2	91,3	0,2	91,3
6	Chicken millet	4,1	0,3	92,6	0,3	92,6	0,2	95,1
7	Gray mice	2,3	0,2	91,3	0,2	91,3	0,1	95,6
	the average	3,2	0,27	91,5	0,24	92,5	0,14	95,6
In 60 days								
1	Amaranth	3,8	0,3	92,1	0,2	94,7	0,1	97,3
2	Quinoa	3,5	0,2	94,2	0,3	91,4	0,1	97,1
3	Black nightshade	3,7	0,2	94,5	0,2	94,5	0,1	97,2
4	Purslane	4,0	0,2	95,0	0,2	95,0	0,1	97,5
5	Hibiscus	2,5	0,2	92,0	0,2	92,0	0,2	92,0
6	Chicken millet	4,5	0,2	95,5	0,3	93,3	0,2	95,5
7	Gray mice	2,4	0,2	91,6	0,2	91,6	0,1	95,8
	the average	3,4	0,21	93,8	0,22	93,5	0,12	96,4
		3,1	0,27	91,2	0,24	92,2	0,13	95,8

Plants on which the Super Stomp herbicide was applied, 33% ke the height of the main stem and the number of ears exceeded the control options.

Table 3.
Effect of the herbicide Super Stomp, 33% ke for corn grain



It was established that the test plants were ahead of control plants in the set of cobs, and 1, 4 outperformed in annual dicotyledonous and cereal weeds with manual weeding, where the herbicide was not used. on one plant.
Yield data are fully consistent with the growth, development and accumulation of ears on one plant.
The largest increase in the corn crop was obtained where the application of the herbicide Super Stomp, 33% ke at a rate of consumption of 3.0-6.0 l / ha. Here, the yield increase in comparison with the control was 7.7-8.0 c / ha.

Conclusion .

On the study of the effectiveness against annual dicotyledonous and cereal weeds of the herbicide Super Stomp, 33% ke at consumption rates of 3.0-6.0 l / ha, they showed biological effectiveness against annual dicotyledonous and cereal weeds, on average, out of 3 counts, they were 92.2-95.8%.
In the indicated consumption rate, Super Stomp, 33% ke does not have a toxic effect on the growth, development and fruit elements (ears) of corn.
Due to the creation of favorable conditions, the absence of weeds in the variants using the Super Stomp herbicide, 33% ke in the tested norm, it was far ahead of the growth, development and fruit formation (ears) of the control variant, which ultimately favorably affected the corn grain yield, and increased yield by 7.7-8.0 c / ha.

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