

AGOR STAR AGOR STAR 75% s.d.g. BIOLOGICAL EFFICACY OF HERBICIDE

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Abstract: The effect of AGOR STAR 75% s.d.g. herbicide on the growth, development and yield of cereal plants when used against annual dicotyledonous weeds was studied.

Keywords: grain, chemical, weed, AGOR STAR 75% s.d.g. herbicide , preparation, fight against .

INTRODUCTION. The main task in the development of agricultural crops in Uzbekistan is to increase the yield of abundant and high-quality products. Therefore, it requires the wide use of advanced scientific and technical achievements. As a result, it is important to conduct timely and effective control of weeds in winter wheat and other crops grown by existing dehqan farms in the republic.

Weeds absorb moisture from the soil, some weeds have deep roots and absorb a large amount of water, nutrients, and minerals from the soil compared to cultivated crops. They shade plants, block light, and disrupt the photosynthesis process. They create favorable conditions for the reproduction of pests and diseases (such as achambiti, field mustard, wild radish, and others), and spread fungal diseases. To prevent this, weeds should be removed at an early stage.

The damage caused by weeds can cause up to 30-50% of winter wheat yield to be lost. In addition to mechanical and agrotechnical measures, the use of chemical herbicides is of great importance for cleaning grain fields from weeds. It is advisable to use promising, highly effective, low-dose herbicides produced in our Republic and abroad against annual and perennial weeds found in grain fields.

Sufficient soil moisture enhances the effect of herbicides and reduces the germination of germinating weed seeds. Lack of moisture in the surface layer of the soil (0-5 cm), where the largest number of weed seeds germinate, reduces the activity of soil herbicides. When moisture is insufficient in the surface layer of the soil, some of the weeds fall into the deeper layers of the soil, conveniently bypassing the layer where the herbicides are sprayed. Humidity conditions affect the condition and permeability of plant tissues. Thus, at 40% relative humidity, the permeability of the epidermis decreases three times compared to 80% humidity.

When moisture is sufficient, the absorption and movement of herbicides to the tops of plants increases. On the other hand, high soil temperatures, combined with optimal soil moisture, accelerate the breakdown of herbicides by microorganisms, which shortens their duration.

A sharp increase in the temperature regime in the republic, high air temperatures (above 25-30 °C) are often accompanied by low humidity, which causes stress in weeds, the amount of herbicide absorbed by them and the speed of its movement through the plant can significantly decrease. For optimal action of many herbicides, the air temperature should be from 10 to 25°C, while the speed of physiological processes occurring in weeds remains constantly high. Temperatures above 25-28°C increase the phytotoxic risk of drugs.

When herbicides are applied in the morning or evening, weeds are often covered with dew. Heavy dew usually impairs the effectiveness of herbicides, making it difficult to retain them on weeds (the solution runs off the leaves with dew drops) or reducing herbicide concentration.

It is necessary to study the type, amount and degree of damage of annual and perennial weeds found in grain fields, and develop measures to combat them. It is important to determine the effect of herbicides on plant growth, development, yield elements, accumulation of blue mass, accumulation of dry matter, yield, quality indicators of grain, formation of the root system and leaf surface of the plant, photosynthesis processes.

The third most widely used method of controlling weeds today is their chemical destruction. Herbicides are mainly used for this. Herbicides are divided into broad-spectrum and selective groups according to their mechanism of action. Broad-spectrum herbicides destroy both cultivated and weedy plants. This type of herbicide is used on non-agricultural land.

Selective herbicides focus their toxic properties only on weeds and do not harm cultivated crops. If used in the right place and at the right time, even with the help of herbicides, weeds can be completely eliminated [12].

High-quality plowing of the areas where grain crops are planted, timely irrigation, sorting of seeds when planting grain crops, use of effective herbicides when the number of weeds increases sharply is required. Herbs such as perennial dicotyledonous weeds, sedum and black sedum have an effective effect on annual dicotyledonous weeds at the same time. The following preparations are effective when weed seeds germinate and 5-6 true leaves appear [7].

Experiment method. AGOR STAR 75% s.d.g. The biological efficiency of the experiments conducted on herbicides was carried out based on the methods of "Metodicheskimi ukazaniyami po Gosudarstvennim ispitaniyam gerbisidov na posevax sel'skohozyaystvennykh kul'tur", Tashkent, (2007) and "Metodicheskimi ukazaniyami po obshim voprosam opitnogo dela", productivity B.A. Dospehova (1995).

Experimental results. The main purpose of herbicide application was to test preparations belonging to different chemical classes to control weeds without adversely affecting plant growth and development (Table 1).

According to the results of scientific research, when AGOR STAR 75% s.d.g. herbicide was used at a rate of 15 g/ha against annual dicotyledonous weeds found among wheat, an average of 0.4-0.5 weeds were observed per 1 sq.m. area after 15 days .

AGOR STAR 75% s.d.g. when herbicide was applied at 15 g/ha, biological efficiency was 87.2-87.4% by 15 days, 87.3-87.4% after 30 days , and 87.4-87.5% by 60 days, respectively .

AGOR STAR 75% s.d.g. biological efficiency was 87.5-87.6% when 20 g/g of the drug was used.

Productivity Agor star 75% s.d.g. herbicide 20 gr/g was higher in the variant, 15.2 t/ha more than the control, 2.9 t/ha more than the reference .

Conclusions 1. One-year dicotyledonous weed control Agor star 75% s.d.g. When 15-20 gr/g of

herbicide was used, the average biological efficiency was 87.4-87.6% .

2 Due to the reduction of weeds and the expansion of the feed area, an additional yield of 15.2 t/ha compared to the control and 2.9 t/ha compared to the standard was obtained .

Table 1

**Biological efficacy of Agor star 75% herbicide against annual dicotyledonous weeds
(under conditions of Tashkent region, 2024)**

Under conditions of Pashkent Region, 2021)								
Weed names	1 sq.m	Control without herbicide, 1 sq.m	Grand 75% s.d.g. – 20 g/g (sample)		Agor star 75% s.d.g. - 15 g/g		Agor star 75% s.d.g. - 20 g/g	
			pcs/m2	%	pcs/m2	%	pcs/m2	%
After 15 days								
Council	4.3	5.64	0.68	87.7	0.67	88.1	0.70	87.6
Olabuta	3.0	5.48	0.72	86.7	0.70	87.2	0.70	87.2
Jaw-jaw	2.1	5.32	0.66	87.4	0.65	87.8	0.67	87.4
Ekma mustard	5.0	5.46	0.71	87.0	0.70	87.2	0.69	87.4
Sutlama	5.0	5.48	0.73	86.7	0.71	87.0	0.68	87.6
Starfire	2.1	5.61	0.74	86.8	0.72	87.2	0.70	87.5
A little bit	2.1	5.61	0.74	86.8	0.72	87.2	0.70	87.5
Average	3.5	5.49	0.71	87.0	0.69	87.4	0.69	87.4
After 30 days								
Council	4.3	5.39	0.72	86.6	0.71	86.8	0.70	87.0
Olabuta	3.0	5.54	0.70	87.4	0.69	87.5	0.67	87.9
Jaw-jaw	2.1	5.64	0.73	87.1	0.72	87.2	0.70	87.6
Ekma mustard	5.0	5.61	0.74	86.8	0.71	87.3	0.69	87.7
Sutlama	4.3	5.63	0.72	87.2	0.70	87.6	0.67	88.1
Starfire	3.0	5.55	0.69	87.6	0.68	87.7	0.67	87.9
A little bit	4.3	5.63	0.72	87.2	0.70	87.6	0.67	88.1
Average	3.5	5.56	0.71	87.1	0.70	87.3	0.68	87.7
After 60 days								
Council	4.3	5.42	0.70	87.1	0.69	87.3	0.67	87.6
Olabuta	3.0	5.38	0.69	87.2	0.67	87.5	0.66	87.7
Jaw-jaw	2.1	5.57	0.72	87.1	0.69	87.6	0.68	87.8

Ekma mustard	5.0	5.61	0.71	87.3	0.69	87.7	0.66	88.2
Sutlama	4.3	5.63	0.73	87.0	0.70	87.6	0.66	88.3
Starfire	3.0	5.65	0.75	86.7	0.71	87.4	0.67	88.1
A little bit	2.1	5.61	0.74	86.8	0.72	87.2	0.70	87.5
Average	3.5	5.54	0.71	87.0	0.69	87.5	0.66	87.9
Average Account 3	3.5	5.53	0.71	87.0	0.69	87.4	0.67	87.6

Table 2

Agor star 75% s.d.g. The effect of the drug on the yield of wheat

Options	Productivity, ts / ha	Additional yield, ts / ha
Control – no herbicide	1 9, 3	-
Grand 75% s.d.g. – 20 g/g (sample)	3 1, 6	12.3
Agor star 75% s.d.g. - 15 g/g	3 2, 7	13.4
Agor star 75% s.d.g. - 20 g/g	3 4, 5	15, 2

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