



ECONOMIC EFFICIENCY OF APPLICATION OF HERBICIDES AGAINST DOUBLE AND DOUBLE WEEDS IN AUTUMN WHEAT FIELD

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Due to the fact that cereals are planted in bulk and are not specially treated, weeds grow freely, water and nutrient absorption, shading, creating favorable conditions for the free development of diseases, pests, insects and other negative effects reduce grain yield and quality by 40-50%.

Due to the specific soil and climatic conditions of each region, the effectiveness of herbicides against weeds in wheat fields is not always at the required level when applied at the appropriate time.

The selective action of herbicides on weeds eliminates some weeds, but does not affect others at all. Granstar 75DF 75% s.t.s. while the herbicide affects biphasic weeds, Puma super 7.5% e.m.v. the herbicide only kills weed weeds. Changes in weather conditions can also expand or reduce the scope of exposure of herbicides.

For this reason, Puma super 7.5% e.m.v. and Granstar 75DF 75% s.t.s. It is important to develop a convenient and effective method for the conditions of the region by studying the effects of herbicides on the growth, development, yield and other indicators of the most widely grown Kroshka variety in the experimental region of winter wheat.

The results of our experiments showed that the effectiveness of Puma super and Granstar herbicides applied against cereals and dicotyledonous weeds in the field of winter wheat Kroshka variety is up to two times higher in terms of grain yield. However, determining the cost-effectiveness of herbicides used against weeds is of particular importance. This is because such herbicides are environmentally friendly and efficient and are expensive due to their import. At the same time, weed damage in crops is 40-50% and higher, which leads to a sharp decline in grain production efficiency. Despite the sharp increase in grain and dicotyledonous weeds in wheat fields in recent years, the work of eradicating them with appropriate herbicides has declined significantly.

Demand for such herbicides in the world market is growing due to the fact that the herbicides used against cereals and dicotyledonous weeds in the winter wheat field are effective and environmentally friendly. Therefore, as shown in Tables 1 the average cost of 1 liter of Puma super herbicide per hectare of winter wheat field for complete eradication of wild oats and other weeds was 25,000 UZS in 2019, 30,000 UZS in 2020 and 32,000 UZS in 2021. Similarly, the cost of Granstar herbicide per hectare, which should be used for weed control in winter wheat fields, was 4,800 UZS in 2019, 5,175 UZS in 2020 and 5,280 UZS in 2021, so our farmers did not buy such herbicides.

Table 1

Cost-effectiveness of herbicides applied against weeds in winter wheat field (when herbicides were applied on March 20)

№	Indicators	Experiment options			
		I (st)	II	III	IV
2019 йил					
1	Productivity ts / ha	31,3	45,3	46,9	56,7
2	Total costs, UZS / ha	329133	354133	333933	358933
	Sh.j. herbicides, UZS / ha	-	25000	4800	29800
3	Total income from grain sales, UZS / ha	268210	388176	401886	485862
4	Net profit, UZS / ha	-60923	34043	67953	126929
5	Profitability rate, %	-18,5	9,6	20,3	35,4

2020 йил					
1	Productivity ts / ha	34,4	50,1	49,5	57,3
2	Total costs, UZS / ha	422073	452073	427248	457248
	Sh.j. herbicides, UZS / ha	-	30000	5175	35175
3	Total income from grain sales, UZS / ha	394430	574447	567567	657002
4	Net profit, UZS / ha	-27643	122374	140319	199754
5	Profitability rate,%	-6,5	27,1	32,8	43,7
2021 йил					
1	Productivity ts / ha	32,8	48,5	47,3	56,1
2	Total costs, UZS / ha	588336	620336	593616	625616
	Sh.j. herbicides, UZS / ha	-	32000	5280	37280
3	Total income from grain sales, UZS / ha	432927	670151	624312	740464
4	Net profit, UZS / ha	-155409	19819	30696	144848
5	Profitability rate,%	-26,4	12,3	5,2	23,1

However, given that up to 0.5 million seeds of each weed seed fall to the ground each year and multiply from year to year, the cost of such herbicides should be of little interest to our farmers. At the same time, we are witnessing an infinite amount of damage caused by weeds, given that it develops alongside winter wheat and reduces yields and crop quality.

According to the results of our experiments (Table 1), the yield of winter wheat fields, which are rich in cereals and dicotyledonous weeds, does not exceed 29.8-34.4 ts / ha, Puma super (1 l / ha), dicotyledonous against weeds. Granstar (15 g / ha) herbicides applied against weeds were observed to have a grain yield of 56.1-61.2 t / ha when mixed together and thinned. As a result, there was a sharp increase in net income and profitability in exchange for an increase in revenue from the sale of grain to the state. As a result, along with other costs, the costs of Granstar and Puma super herbicides were fully covered and an increase in net profit was observed.

Even when the Puma super was applied separately against wild oats and other cereals on March 20, the grain yield increased by 14.0 ts / ha, 15.7 ts / ha in 2020, and 15.7 ts / ha in 2021 compared to the non-herbicide-controlled control variant in 2019.

When Granstar (15 g / ha) herbicide was applied against biphasic weeds on March 20, the grain yield was 15.6 ts / ha in 2019 compared to the non-herbicide-free control option, which was 15.1 ts / ha in 2020 and 14.5 ts / ha in 2021. ts / ha.

However, compared to when Granstar herbicide was applied separately against biphasic weeds, it was observed that the grain yield when the two herbicides were mixed and thinned on March 20 was significantly higher than the non-herbicide control option and the herbicides were applied separately.

When we compare and analyze the experimental options of this situation, we witness the following evidence. In 2019, when both herbicides were mixed together, the grain yield was 56.7 ts / ha compared to the control option where no herbicides were used, and 25.4 ts / ha more than the control option.

If the grain yield when Puma super (1 l / ha) herbicide was applied separately against cereal weeds was 45.3 ts / ha, the additional grain yield when both herbicides were used together was 11 ts / ha higher than when Puma super was used separately. A similar rate was observed in terms of the effectiveness of co-application of Granstar herbicide with Puma super, with an additional grain yield of 9.8 ts / ha.

According to the experiments of 2020-2021, the 2019 legislation was repeated, showing that the effectiveness of the combined use of herbicides Puma super (1 l / ha) and Granstar (15 g / ha) is high.

However, it was observed that the effectiveness of Puma super and Granstar herbicides in weed control in winter wheat fields was higher when applied on April 10, when the weeds were fully germinated after 20 days, than when applied on March 20.

The net profit of Puma super (1 l / ha) and Granstar (15 g / ha) herbicides when used together on March 20 was 126929-199754 UZS, while when applied on April 10 it was 150922-244471 UZS. When herbicides were used together on March 20, yields ranged from 23.1% to 43.7%, while those applied on April 10 ranged from 27.5% to 53.5%. Therefore, in the irrigated bald pastures of Surkhandarya region, one of the most effective methods is the elimination of weeds in winter wheat fields with a mixture of herbicides during the full germination of weeds.

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