

Effects Of Herbicide Application Rates On Corn Yield In Maize Fields

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Abstract: Increase in grain production in Uzbekistan has to be provided first of all by increase in productivity. For this purpose it is necessary to use all available reserves. Under the conditions of modern intensive agriculture fight against weeds is one of the most important elements of agriculture on which increase in productivity of agricultural cultures depends. In the cultivation of corn in Uzbekistan, first of all, obtaining high corn yield should be aimed. In order to this, it is necessary that all available agro-technical measures should be used. In modern intensive agriculture, weed control is one of the main measures.

Keywords: Herbicide, drug, dicotyledon, weed, corn, biological efficiency

INTRODUCTION

Clearing weeds around corn fields, ditches before their seeds are ripe reduces their spread by water. In addition, manure which is not well-rotten is a source of weed seeds. Therefore, it is recommended to use rotten manure to feed around fields and crop fields. If necessary, it is advisable to use a well-rotted or composted.

In addition, non-usage of crop rotation and chronic sowing of the same crops, the lack of timely and quality agro-technical measures are among them. Weed proliferation is also observed when corn is planted too sparsely.

MATERIALS AND METHODS

To reduce the amount of weeds, crop areas are plowed at the required level with two-tiered plows in the fall. Weed seeds should be buried to a depth of 32-36 cm. To do this, the use of pliers is effective. Perennial weeds (Bermuda grass, Johnson grass) that reproduce through some root buds will need to be removed by scratching the roots using a chisel. In addition, the results of plowing at different depths each year are also good. For example 25, 30, 40 and so on. In this case, the layer of weed seeds does not come to the surface.

Proper setting of planting dates and norms, mulching, and the use of crop rotation also lead to a reduction in the number of weeds. In addition, a chemical method of weed control can be used. Along with the beneficial aspects of this method, the harmful properties should also be taken into account. This type of weed control pesticide is called a herbicide. Herbicides are toxic substances with different levels and also have a negative effect on cultivated plants, soil, flora and fauna. Therefore, extreme caution is required when using herbicides.

The next is selective herbicides. This type of herbicide has a slightly lower toxicity level (3 degrees) and can be used during the growing season of cultivated crops. These herbicides are absorbed into the leaves and stems of weeds and act on the plant enzymacet lactacintetase. It stops the work of these enzymes that allow cells to divide and multiply. Herbicides are more effective when the soil moisture is sufficient. There should be enough moisture in the soil to enhance the effect of herbicides. Two or three hours after the application of herbicides, the weeds stop growing. It becomes apparent in fifteen days and the effect can be maintained for up to 60 days.

According to the results of experiments conducted on the lands of DostonUychi farm, Uychi district, Namangan region, the number of annual dicotyledon weeds under control, clearly without herbicide, was 4.9, the number of perennial dicotyledon weeds averaged 5.3.

DISCUSSION

15 days after application of herbicides to corn fields, the number of dicotyledon weeds in the control variant per 1m² area: lamb's quarters - (Ch. Album L) -5.7 pieces, - wild saltbush (A. flabelium Bunge) -4.5, Sowing buckwheat - (F. esculentum Moench) -4.1, wild cabbage - (B. campestris L.) - 5.3, shepherd's purse - (C. bursa-astoris) -5.2, common datura - (D. stramonium L) -4.6, wild radish - (R. Raphanistrum L) -4.4, spiny cocklebur- (X. spinosum L) -4.2, medicinal groomwell - (Lithospermumofficinale L) -5.2, average 4,9 pieces, clearly 3 points, perennial dicotyledonous weeds while rumex grass - (R. rechingerianus) -5.6, sticky grass - (Galiumaparine L.) - 4.7, hedge bindweed - (Convolvulus sepium L.) - 5.7, mugwort - (Artemisia vulgaris L.) - 4.9, an average of 4.9, or 2 points.

15 days after herbicide application Super stomp, 33% em.c. Annual dicotyledonous weeds when applied at 6 l / ha: lamb's quarters- (Ch. Album L) -90.3%, wild saltbush- (A. flabelium Bunge) -89.4%, Sowing buckwheat- (F. esculentum Moench) -91.8%, wild cabbage - (B. campestris L.) - 90.5%, shepherd's purse - (C. bursa-astoris) -91.4%, common datura- (D. stramonium L) -86, 1%, wild radish - (R. Raphanistrum L) -88.7%, spiny cocklebur - (X. spinosum L) -91.5%, medicinal groomwell - (Lithospermumofficinale L) -90.4%, average 90, 0%, perennial dicotyledonous weeds, rumex grass (R.

rechingerlanus) -89.2%, sticky grass- (Galiumaparine L.) - 89.4%, hedge bindweed- (Convolvulus sepium L.) - 89.3 %, mugwort - (Artemisia vulgaris L.) - 89.3%, the average yield was 89.3%.

Super stomp, 33% em.k.when applied at 6 l / ha, lamb’s quarters, sowingbuckwheat, shepherd’s purse, wild cabbage gave better results. Super stomp, 33% em.c had a high effect on all weeds when applied at 6 l / ha (see Table 1).

In summary, Stomp and Super stomp, 33% em.c. 4 l / ha and the drug can be used as long as the number of weeds is not excessive.Super stomp when the number of weeds is large, 33% em.c. applying 6 l / ha in moderation gives good results. This in turn affected productivity. When the drug Gaitan was applied at 5 l / ha, the yield was 25 c / ha, that is 16 c / ha more than the control. But overuse of herbicides is not always effective

Because the price of herbicides is expensive, as a result of the increase in cost while producing economic efficiency, there is also a decrease in the amount of conditional net income, and accordingly leaves toxins in the soil.This is the Super stomp mentioned above, 33% em.c. shows that the herbicide rate can be increased only when the number of weeds, which gave good results when the drug is applied at 6 l / ha, is sharply increased.In the control variant, due to the excessive number of weeds, a sharp decrease in yield was observed, that is 30.1 extra.

Table 1

Effects of herbicides on annual and perennial dicotyledon weeds applied simultaneously with planting in corn fields (Namangan region, Uychi district, DostonUychifarm, 2018-2020)

№	Name of weeds	Control without herbicide, number/m ²	Stomp 4l/ha (standart)		Super stomp, 33% em.c. 4l/ha		Super stomp, 33% em.c. 6l/ha	
			number/m ²	%	number/m ²	%	number/m ²	%
15 days after spraying herbicide								
1	Lamb’s quarters	5,7	0,6	87,7	0,6	89,4	0,5	90,3
2	Wild saltbush	4,5	0,5	86,6	0,5	88,8	0,4	89,4
3	Sowing buckwheat	4,1	0,4	90,2	0,5	90,2	0,4	91,8
4	Wild cabbage	5,3	0,4	88,6	0,5	86,7,	0,4	90,5
5	Shepherd’s purse	5,2	0,5	86,5	0,6	90,3	0,5	91,4
6	Common datura	4,6	0,4	89,1	0,5	86,9	0,4	89,1
7	Wild radish	4,4	0,5	86,6	0,4	88,8	0,4	88,7
8	Spiny cocklebur	4,2	0,4	90,2	0,4	90,2	0,3	91,2
9	Medicinal groomwell	5,2	0,4	88,7	0,5	86,7	0,3	90,4
	Average:	4,9	0,5	88,1	0,5	88,7	0,5	90,0
10	Rumex grass	5.6	0,6	89,2	0,7	87,5	0,6	89,2
11	Sticky grass	5,7	0,7	87,7	0,6	89,4	0,6	89,4
12	Hedge bindweed	4,7	0,6	87,2	0,5	89,3	0,5	89,3
13	Mugwort	4,9	0,6	88,4	0,6	88,4	0,5	89,3
	Average:	4,9	0,5	88,4	0,5	88,6	0,4	89,3
	Average:	5,2	0,6	87,7	0,5	88,9	0,5	88,9
	Average calculation							
	HCP ₀₅ =	-	-	3,19		1,51		1,36

When using the above herbicides, the active ingredient of which is pendemetaline, the yield at Stomp 4 l / ha (standard) is 65.5 c / ha, that means 35.4c / ha extra harvest, and the yield of Super stomp 4 l / ha is 68.5 c / ha, that is 38.4c / ha additional yield, Super stomp 6 l / ha yield 68.7 c / ha means.

Table 2

Effect of super stomp herbicide on corn yield (Namangan region, Uychi district, DostonUychi farm, 2018-2020)

Options	Corn productivity, c/ha	Extra product, c/ha
control –no herbicide	30,1	-

Stomp 4 l/ha (standart)	65,5	35,4
Superstomp 4l/ha	68,5	38,4
Super stomp 6l/ha	68,7	38,6

38.6ts / ha more harvest than productivity.

CONCLUSION AND ACKNOWLEDGEMENT

Although the highest yield was when the Super stomp was applied to 6 l / ha, little difference was observed compared to when the Super stomp was applied to 4 l / ha. Considering the cost-effectiveness, it is advisable to use the drug Super stomp 4 l / ha. (See Table 1). It is recommended to use the drug Super stomp 4 l / ha against perennial dicotyledonous weeds.

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