

Changes in wheat growth, development, and yield when herbicides are applied

S.Kh. Sullieva

Termez State University, Surkhandaryo, Uzbekistan

*E-mail: zokirovqarbonalijon@gmail.com

Abstract: In this article, Puma super (1 l / ha), Granstar (15 g / ha) was applied against cereal weeds, and as a result of elimination, the Kroshka variety of winter wheat had a long stalk, a large number of grains in the stalks, and a large number of grains in the stalks. an increase in grain yield from a single spike, which has been reported to radically improve the grain structure of Puma super (1 l / ha) and Granstar (15 g / ha) herbicides against double-stranded weeds when mixed and thawed.

Keywords: Herbicide, Granstar Herbicide, Puma Super Herbicide, Winter Wheat, Weeds, Dicotyledonous Weeds, Rye Weeds, Control Options.

Introduction

To develop clear recommendation on increasing the viability of the winter wheat, elimination of rye and dicotyledonous weeds, the average state characterized of a 3 -year data on the application of the Puma Super(1l/ha) against rye and Granstar(15gr/ha) for dicotyledonous weeds, when they used together at a time the viability rate of winter wheat and number of stalks were observed to be more 22 pieces in comparison with non-herbicide control variant. However, it was determined that this figure was showed 8 pieces when Granstar herbicide was used alone and when Puma super was used it was 10 pieces [1,3]. The total number of surviving stalks is 18 pieces when both herbicides are applied separately, indicating that when the both herbicides used the number would be 22 pieces or 4 more, it shows that it is one of the most prospective methods to develop weed science even further by increasing viability of the winter wheat and application of herbicide against rye and certain dicotyledonous weeds [5,7,9].

Methods

Research work Testing varieties of agricultural crops; B.A.Dospekhov "Methods of field experiment"; Recommendations for the protection of grain crops in Uzbekistan from diseases, insects and weeds; recommendations for the use of Granstar herbicide in cereals; Conducted in accordance with the guidelines for the State testing of herbicides against weeds in the fields where agricultural crops are grown, as well as recommendations for high yields of cereals.

Results

According to the average data (2016-2018), as the condition on April 10, the number of stalks per 1meter square area of winter wheat without herbicides was 346-349 units, while after 30 days it was observed that this figure was 325 units without herbicides in the experimental variant and decreased by 11 units. However, in experimental variants where herbicides were applied in terms of the number, there was more from 3 to 12 stalks compared to the non-herbicide control variant, depending on the type and method of application of herbicides. Thus, it was observed that when applied Puma super (1 l / ha) the number of units increased by 3 pieces, Granstar herbicide by 6 pieces, and when both herbicides applied together by 12 units. Hence, the combined application of such herbicides can be an effective method in the control of rye and dicotyledonous weeds in the winter wheat field.

Using both herbicides together once in the early stages of winter wheat to eliminate rye and dicotyledonous weeds will increase the viability of the winter wheat.

At the end of vegetation period, it was observed significant improvement in the yield of stalks and degree of conservation according to the usage of Puma super (1 l / ha) against rye and Granstar (15 g / ha) for dicotyledonous weeds separately and together in the winter wheat fields. To illustrate this situation even

clearly, it is expedient to analyze the number of stalks of winter wheat per 1m² area on 20 March and 10 April.

According to the experiment in 2016, it was observed that the number of wheat stalks per 1m² area was 352 pieces on 20 of March, while this figure was 346 pieces on 10th April. Since the number of productive stalks when herbicides were applied on April 10 was higher from 15 to 30 pieces depending on the type and method of application of the herbicides, this figure showed from 7 to 22 pieces when applied on March 20.

(Table 1) in 2016, as a result of the application of Puma super (1 l / ha) herbicide against rye characterized to be conserved the number of productive stalks of winter wheat was more 11 pieces than that of the non- herbicide control variant.

Whereas, when Granstar (15 g / ha) herbicide was applied during this period, the number of productive preserved stalks of winter wheat until the end of the growing season was more 7 than in the non-herbicide control variant. However, when the established rates of both herbicides were mixed together and applied on March 20, the number of productive stalks of winter wheat that remained until the end of the growing season was observed.

1-Table

Viability of winter wheat until the end of the vegetation season(application of herbicides on March 20)

№	Experiment options	Number of wheat stalks before spraying herbicides, 1m² pcs	Number of productive stalks of wheat at the end of the growing season, 1m²	Difference to control, pcs, +, -
2016 year				
1	Control option without herbicides (st)	346	262	-
2	Puma super 1.0 l / ha	345	282	+20
3	Granstar 15 g / ha	346	279	+17
4	Puma super 1.0 l / ha Granstar 15 g / ha	344	292	+30
2017 year				
1	Control option without herbicides (st)	347	265	-
2	Puma super 1.0 l / ha	346	284	+17
3	Granstar 15 g / ha	347	280	+15
4	Puma super 1.0 l / ha Granstar 15 g / ha	346	292	+27
2018 year				
1	Control option without herbicides (st)	345	263	-
2	Puma super 1.0 l / ha	344	282	+19
3	Granstar 15 g / ha	342	278	+15
4	Puma super 1.0 l / ha	344	291	+28

	ha Granstar 15 g / ha			
2016-2018 average over the years				
1	Control option without herbicides (st)	346	263	-
2	Puma super 1.0 l / ha	345	283	+20
3	Granstar 15 g / ha	345	279	+16
4	Puma super 1.0 l / ha Granstar 15 g / ha	345	292	+29

2-Table

Viability of winter wheat until the end of the vegetation season (application of herbicides on April 10)

№	Experiment options	Number of wheat stalks before spraying herbicides, 1m ² pcs	Number of productive stalks of wheat at the end of the growing season, 1m ²	Difference to control, pcs, +, -
2016 year				
1	Control option without herbicides (st)	346	262	-
2	Puma super 1.0 l / ha	345	282	+20
3	Granstar 15 g / ha	346	279	+17
4	Puma super 1.0 l / ha Granstar 15 g / ha	344	292	+30
2017 year				
1	Control option without herbicides (st)	347	265	-
2	Puma super 1.0 l / ha	346	284	+17
3	Granstar 15 g / ha	347	280	+15
4	Puma super 1.0 l / ha Granstar 15 g / ha	346	292	+27
2018 year				
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2	Puma super 1.0 l / ha	344	282	+19
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2016-2018 average over the years				

1	Control option without herbicides (st)	346	263	-
2	Puma super 1.0 l / ha	345	283	+20
3	Granstar 15 g / ha	345	279	+16
4	Puma super 1.0 l / ha Granstar 15 g / ha	345	292	+29

It was observed that application of herbicides to control weeds had an effect on viability of winter wheat by 22 units (average data for 2016-2018) compared to the variant. The same state which was in 2016 repeated in 2017-2018, and it was determined that the conservation rate of productive stalks varied 1-4 units.

On the 10th of April, when all cereals full sprouted and an increase in the degree of conservation of the productive stalks of winter wheat until the end of the vegetation season was observed. If the usage of Puma super (1 l / ha) on March 20 results in to conserve as well as increase in productive wheat stalks by 11 units till the end of the vegetation period, while the number of productive stalks was observed to be 20 units, this herbicide applied on April 10. Similarly, it was observed that when Granstar (15 g / ha) herbicide was applied on April 10, achieved to be more 10 units of productive stalks compared to the variant that the herbicide applied on March 20, at the end of the wheat vegetation period non- applied control variant.

One of the key measures to ensure conservation of more productive stalks of winter wheat is to use such herbicides together on April 10. When both herbicides applied together on March 20, the conservation of winter wheat stalks by the end of the vegetation season increased by 22 units, while applied on April 10, this figure increased by 30 units. (2-table). The same situation happened in 2017-2018, and it turned out to be 2-3 units different from 2016.

In irrigated serozem soil conditions of Surkhandarya Region the usage of herbicide Puma Super (1l/ha) to eliminate rye and Granstar(15gr/ha) for dicotyledonous weeds in the winter wheat fields and clearly to prove high effectiveness of using together such compounds, a 3-year data for average state (2016-2018) given in a graphic form and it showed that there would be more 8 pieces preserved during the vegetation period of the productive winter wheat stalks when herbicides applied on April 10 compared to the variant when herbicides were applied on March 20.

Conclusion

Thus, the combined usage of Puma super (1 l / ha) to control rye and Granstar (15 g / ha) herbicides for dicotyledonous on April 10 when annual weeds fully sprout, increases the preservation rate of the productive stalks of winter wheat till the end of the vegetation period.

Thus, in the conditions of irrigated serozem soils of Surkhandarya region, as result of the application of combined herbicides Puma super (1l/ha) to control rye, Granstar (15g/ha) against dicotyledonous weeds, due to eliminate of both types of weeds, the growth and development phases of winter wheat is significantly reduced, and achieved to reach maturity 4-11 days earlier.

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