ASSESSMENT OF WINTER WHEAT HEIGHT AND LODGING RESISTANCE DURING HERBICIDE-MEDIATED WEED MANAGEMENT

Sulliyeva Suluv Xurramovna

Candidate of Biological Sciences, Associate Professor of the Faculty of Natural Sciences of Termez State University

Annatation: This article describes the effects of various herbicides on weeds found in winter wheat fields. Additionally, the impact of herbicide application on the growth and lodging resistance of winter wheat is discussed.

Key words: winter wheat, resistance, herbicide, weeds, yield

Introduction: Scientific evaluations reveal that research on the adverse influence of weeds on wheat lodging in heavily infested grain fields is scarce, and measures aimed at mitigating this problem have been insufficiently explored. T. Kh. Khodjakulov underscores the necessity of breeding lodging-resistant wheat varieties, given the substantial yield losses associated with lodging in cereal crops.

Furthermore, N. Khalilov proposed optimizing seeding rates as a means of improving lodging resistance in wheat. Contributions by Z. A. Ibragimov in the Kashkadarya region and Sh. Kh. Rizaev in the Samarkand region also represent significant advancements in this research domain.

Purpose of the Study: To assess the height and lodging resistance of winter wheat under the influence of herbicide-based weed control.

Research Object: Winter wheat grown in irrigated fields, along with various types of herbicides used for weed management, served as the primary research objects.

Research Methods: Herbicides were applied to winter wheat plots, followed by systematic monitoring and analysis of the resulting changes.

Results: As a result of scientific work, the results of the irrigated lands of Surkhandarya region between 2005 and 2007 were analyzed and presented in the form of a table.

Height and lodging resistance of winter wheat when using herbicides against weeds. (when herbicides were applied on March 20)

№	Experience options	Height, cm	Lying down, score
		The wax is in the ripening phase X±SX	The wax is in the ripening phaseX±SX
2005 yil			
1	Control option without herbicides (st)	90,8 -	4,0 -
2	Puma super 1,0 l/ga	92,3 ± 1,5	4,5 ± 0,5
3	Granstar 15 g/ga	91,8 ± 1,0	4,5 ± 0,5
4	Puma super 1,0 l/ga Granstar 15 g/ga	95,3 ± 4,5	5 ± 1,0
2006 year			
1	Control option without herbicides (st)	91,0 -	4,0 -
2	Puma super 1,0 l/ga	92,8 ± 1,8	4,5 ± 0,5
3	Granstar 15 g/ga	92,0 ± 1,0	4,5 ± 0,5
4	Puma super 1,0 l/ga Granstar 15 g/ga	96,1 ± 5,1	5 ± 1,0
2007 year			
1	Control option without herbicides (st)	90,2 -	4,0 -
2	Puma super 1,0 l/ga	92,5 ± 2,5	4,5 ± 0,5
3	Granstar 15 g/ga	91,5 ± 1,3	4,5 ± 0,5
4	Puma super 1,0 l/ga Granstar 15 g/ga	95,8 ± 5,6	5 ± 1,0
2005-2007 average over the years			
1	Control option without herbicides (st)	90,7 -	4,0 -
2	Puma super 1,0 l/ga	92,5 ± 1,8	4,5 ± 0,5
3	Granstar 15 g/ga	91,8 ± 1,1	4,5 ± 0,5
4	Puma super 1,0 l/ga Granstar 15 g/ga	95,7 ± 5,0	5 ± 1,0

These and other circumstances require the development of new technologies for the elimination of damage caused by weeds in the fields of winter wheat and other grain crops in each region and variety.

From the results of our experiments, it was found that Puma super (1 l/ha) was used to eliminate common spike and dicotyledonous weeds in the fields where the Kroshka variety of winter wheat is grown under the conditions of the irrigated grassy barren soil region of the Surkhandarya region.) and Granstar (15 g/ha) herbicides, when applied separately and together on March 20 and April 10, showed an increase in height and dormancy tolerance, depending on the types of herbicides and methods of application, duration.

The maximum growth and lodging of winter wheat coincides with its wax ripening phase. For this reason, one-time monitoring of growth and lodging was carried out in the experimental options where herbicides were used and in the control option where herbicides were not used, and the results are presented in Tables 4.2.3.14 and 4.2.3.15. During this period, the height and lodging indicators of winter wheat changed in favor of experimental options with herbicides, and the maximum display of height and lodging was observed.

When the height of winter wheat was analyzed according to the tabular data, the height of the Kroshka variety at the wax ripening stage when herbicides were applied on March 20 was 90.8 cm in the control option without herbicides, Puma super (1 l/ha), 1.5 cm when Granstar (15 g/ha) was used, and 4.5 cm when Puma super and Granstar were used together at the specified standards.

The same situation was repeated in 2006-2007 when herbicides were mixed together and applied, compared to the variants where herbicides were applied separately and when herbicides were not applied, the height of the plant was 5.1-5.6 cm higher.

When herbicides were applied on March 20, it was observed that the height of wheat was proportional to that of the untreated control. For this reason, it was observed that when herbicides were applied individually on March 20, 2005, the lodging was 4.5 points, and in the control option without herbicides, it was 4. When herbicides were used together, it was observed that the incidence of lodging was 5 points without being

observed at all. The same parameters were repeated in 2006-2007, when Puma super (1 l/ha) and Granstar (15 g/ha) herbicides were mixed together, and a single application on March 20 ensured the stunted growth of wheat. The staying power is also guaranteed to be significantly improved.

Conclusion: Therefore, when Puma Super (1 L/ha) and Granstar (15 g/ha) are applied together against grass-type and dicotyledonous weeds in winter wheat fields, the removal of these competing weeds allows the crop to grow more vigorously and uniformly. As a result, wheat plants not only exhibit improved growth and development but also show a marked increase in lodging resistance.

Even when herbicides were applied on April 10, at a time when weeds had fully germinated, the height and lodging resistance of winter wheat closely mirrored the results obtained from the March 20 applications, differing by only 1–2 cm depending on the treatment variant.

Supporting this conclusion, an analysis of the 2005–2007 average data shows that when Puma Super (1 L/ha) was applied on March 20, wheat height increased by 1.8 cm compared to the untreated control. Against the Granstar (15 g/ha) background, plants were 1.1 cm taller, and when both herbicides were applied together, plant height increased by 5.0 cm. In trial variants where the herbicides were used separately, increases ranged from 2.7 to 2.9 cm, while the combined application resulted in an increase of 5.7 cm. Importantly, this increase in height did not lead to higher rates of lodging.

These findings indicate that the combined application of Puma Super (1 L/ha) and Granstar (15 g/ha) not only effectively eliminates both grass-type and dicotyledonous weeds but also promotes healthy, unrestricted wheat growth and contributes to significantly improved lodging resistance.

List of used literature:

1. Decision of the President of the Republic of Uzbekistan "On additional measures to introduce the market principle in the production and sale of grain", PQ-262, 28.05.2022.
2. Закиров Т.С. Культура земледелия в орошаемых условиях Узбекистана. - Т.: «Ўзбекистон», 1979.

3. Ermatov A. Irrigated farming. T.: "Teacher", 1983.
4. Rashidov M. I. and others. Recommendations for the use of Granstar herbicide in grain fields. Tashkent, 1998.
5. Oripov R., Khalilov N. Plant science. T., 2006.
6. Ibragimov Z.A. Field weeds and their control in short-rotation grain rotation (Nauchn.tr. KIEI, vip.1), 1996
7. Kholmatov M.Kh., Akramov B. Effectiveness of chemicals in the fight against weeds, diseases and pests in irrigated grain fields. "Cotton and grain farming" //J: No. 2, 2000
8. Elefferohorinos T. G. Weeds competition from Callium Aparine 1 and Veronica Persica Poir in Winter Wheat and their control by chlorsulfuron. //Aspects. №9,1985
9. Dependence of stem lodging resistance of winter wheat on weed control. Sullieva Suluv Khurramovna, JOURNAL OF AGRICULTURE & HORTICULTURE Volume 4, Issue 6, 55-58.
10. Dependence of winter wheat growth and development on the level of weed control. Sullieva Suluv Khurramovna, JOURNAL OF AGRICULTURE & HORTICULTURE Volume 4, Issue 6, 52-54.