

THE IMPORTANCE OF PROTECTION METHODS AGAINST PUCCINIA STRIFORMIS AND ERYSIPE GRAMINIS F. SPTRITICI ON WHEAT AND THEIR OUTCOME ON GRAIN STRUCTURE AND THE SIGNIFICANCE OF CHEMICAL ACTIONS

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Abstract

In this article, the effect of drugs used against *Puccinia striiformis* and *Erysiphe graminis f. sp. tritici* in the fields of the foothills of Kashkadarya region on grain quality was 707.6-720.6 g/l on average in the case of fungicide etolon. It was determined that the average of 793.6-799.1 g/l that was higher in the variant used in fungicide +suspension than fungicide itself.

Keywords: Research, experiment, variant, chemical action, etolon, *puccinia striiformis*, *erysiphe graminis f. sp. tritici*, chemical control, fungicide, suspension, grain structure, fungus.

Introduction

The spread and development of *Puccinia striiformis* on wheat is being observed in all grain-growing countries in the world. This is causing great damage to grain crops by carrying out ineffective chemical actions against diseases, ineffective use of chemical preparations and continuing the development of the disease. The leading places in wheat cultivation in the world are India with 30 million hectares, Russia with 27 million hectares, Spain with 26 million hectares, China with 24 million hectares, and the USA with 15 million hectares. China, India, and Russia account for 46% of wheat production worldwide. Today, it has been proven that *Puccinia striiformis* and *Erysiphe graminis f. sp. tritici* diseases have a serious effect on grain yield in all grain-growing countries. 20-25% of yield is being lost due to *Puccinia striiformis* (yellow and brown wheat disease), and 15-20% due to *Erysiphe graminis f. sp. tritici*.

Therefore, taking into account the development of *Puccinia striiformis* on grain, effective use of new fungicides in the fight against them, and simultaneously introducing new methods under one of the urgent tasks today.

According to A.Kh. Meyliev., A.Oripov., Sh.Amanovlar (2016), It has been determined that the fungus *Puccinia striiformis f. sp.*, which lives in alive tissue and cells of grain crops, causes serious damage to productivity and quality indicators by infecting green tissue of wheat [1].

Volumetric weight of wheat is one of the important indicators, and according to the researches of Yu.R. Kolesnikova, it has been found out that the increase in temperature and relative humidity in May-July leads to a strong spread of rust disease, and as a result, the size of grain decreases due to



the effects of diseases on wheat leaves [2].

In addition, according to the researches of S.A. Vostroknutov and I.N. Ivashchenko, changes in the productivity of fall wheat occur under the influence of weather conditions and other factors. The amount of protein and gluten increased from 81.5% to 14.9% when plants were fed with 5.0 t/ha of NPK from mineral fertilizers and fungicide + urea. The best option was the one that usage of mineral fertilizers, urea, and fungicides together, and the completeness of grain was 777 g/l [3; 4].

RESEARCH RESULTS

In the chemical fight against *Puccinia striiformis* and *Erysiphe graminis f.sp.tritici*, we studied the structure of the grain when we jointly supported Fungicide+IFO PZN suspension.

In the researches, in the fields of the farm "Rakhmatov Akbar Khurramovich" belonging to Parada Sherboboev, Shahrissabz district, Kashkadarya region, the effectiveness of chemical preparations on grain against *Puccinia striiformis* and *Erysiphe graminis f.sp.tritici* diseases was studied. In order to determine the most effective means of chemical drugs, effective fungicides for grain fields were applied on grains infected with *Puccinia striiformis* and *Erysiphe graminis f.sp.tritici*, production samples of repetitive products over 1 m² area were taken to laboratory analysis for quality analysis.

In the chemical action against yellow rust (*Puccinia striiformis*), the lowest indicators were determined in the Nazorat and Duazol 40% K.E.C. In the case of Nazorat (without applying chemicals) grain structure varied from 680.3 g/l to 680.9 l/.

In the case of Duazol, 40% c.e. at 0.25 g/l (etalon) in the (Fungicide) option averaged 707.6 g/l but when treated with (Fungicide+suspension), this accounted for 724 g/l.

TABLE N 1. THE EFFECTS ON WHEAT SORT KESH -2016 (SHAKHRISABZ 2020-2022)

T y	Experiment cases	Fungicide				Fungicide+IFO PZN 2,0-3,0 l/ ha suspension			
		2020	2021	2022	average	2020	2021	2022	average
Puccinia striiformis	Nazorat (without chemicals)	676,2	685,5	680,9	680,9	675,4	685,4	680,1	680,3
	Duazol, 40% d.e.c.) 0.25 l/ha (etalon)	703,0	712,3	707,6	707,6	724,4	734,4	713,2	724,0
	Bi-Kanazol 400 g/l 0.2-0.3 l/ha	753,3	762,7	743,5	753,2	774,4	784,4	791,3	783,4
	AZOTE 320 SC, 32% K.S 0.3-0.4 l/ha	781,3	790,7	785,7	785,9	788,8	798,8	793,2	793,6
	Rauma 490 k.e. 1.25 l/ha	784,3	793,6	787,5	788,5	786,4	796,4	791,5	791,5
	Alta Super 40% 0.3 l/ha	740,9	750,3	745,4	745,5	739,5	749,5	744,2	744,4
	Altus Duo 32.5% 0.3 l/ha	741,0	750,3	746,2	745,8	741,0	751,0	744,2	745,4
Erysiphe graminis f.sp.tritici	Nazorat (without chemicals)	677,5	686,8	682,7	682,3	692,1	685,4	682,2	686,6
	Duazol, 40% d.e.c.) 0.25 l/ha (etalon)	717,2	726,5	718,0	720,6	741,1	734,4	726,0	733,8
	Bi-Kanazol 400 g/l 0.2-0.3 l/ha	762,8	772,2	765,4	766,8	770,5	784,4	785,5	780,1
	AZOTE 320 SC, 32% K.S 0.3-0.4 l/ha	779,0	780,5	757,2	772,3	800,1	798,8	798,3	799,1
	Rauma 490 k.e. 1.25 l/ha	797,1	799,1	784,6	793,6	803,4	796,4	795,0	798,3
	Alta Super 40% 0.3 l/ha	756,1	765,4	758,6	760,0	764,5	749,5	760,9	758,3
	Altus Duo 32.5% 0.3 l/ha	757,5	766,9	760,1	761,5	765,9	751,0	762,3	759,7

AZOTE 320 SC, 32% K.S. 0.3-0.4 l/ha and Rauma 490 k.e. 1.25 l/ha, consisting of the preparations (Fungicide+suspension), were the best preserved options.

In this case, when treated with (Fungicide) AZOTE 320 SC, 32% K.S 0.3-0.4 l/ha, the average grain yield was 785.9 g/l, 105 g/l for the control option, and 78 for etholong. organized g/.

When treated with AZOTE 320 SC 32% K.S 0.3-0.4 l/ha (Fungicide+suspension), grain structure was 793.6 g/l in proportion that higher by 3 g/l and 69.6 g/l than nazorat(without chemicals) and etalon accordingly.

In our second variant with (Fungicide) Rauma 490 k.e. 1.25 l/ha, it was 788.5 g/l on average which was higher by 107.6 g/l than nazorat and by 80.9 g/l than etolon.

As a result of the combined treatment with Rauma 490 k.e.1.25 l/ha (Fungicide+suspension), the indicator of the nature of the grain was 791.5 g/l that was higher than nazorat option (Untreated) by 111.2 g/l and than Duazol, 40% c.e. 0.25 g/l (etalon) by 67.5 g/l.

In the same variants, the lowest indicators in the chemical actions against the fungal disease (*Erysiphe graminis f.sp.tritici*) were observed in the Nazorat and Duazol, 40% k.e.c. 0.25 l/ha (standard) variants, and when the structure of the grain had been determined in the case of Nazorat case, the average was 682.3 g/l to 686.6 g/l, when treated with (Fungicide) Duazol, 40% k.e.c.) 0.25 l/ha (etalon) it was determined that the structure indicator of the grain was 720.6 g/l, and when it was treated with (Fungicide+suspension) it was 733.8 g/l.

The indicator of the of the structure grain showed the highest efficiency in the variants of AZOTE 320 SC, 32% K.S 0.3-0.4 l/ha and Rauma 490 k.e.1.25 l/ha.

In our version treated with AZOTE 320 SC, 32% K.S. 0.3-0.4 l/ha (Fungicide), the indicator of grain structure was 772.3 g/l on average, compared to the Nazorat version, it was 90 g/l and compared to the standard version, it was 51.7 g/l.

When treated with AZOTE 320 SC, 32% K.S. 0.3-0.4 l/ha (Fungicide+suspension), this indicator was 799.1 g/l, compared to the Nazorat option, 112.5 g/l for etolon it was found that it increased by 65.3 g/l.

When treated with Rauma 490 k.e.1.25 l/ha (Fungicide), the grain quality indicator was 793.6 g/l on average, compared to the control option, it was 111.3 g/l and compared to the standard option, it was 73 g/l was found to be higher.

In the variant used together with Rauma 490 k.e.1.25 l/ha (Fungicide + suspension), this indicator was on average 798.3 g/l, compared to the control variant 111.7 g/l and compared to etolon 64 It was found in the studies that grain quality increased by 7 g/l.

In summary, AZOTE 320 SC, 32% K.S 0.3-0.4 l/ha, Rauma 490 k.e. 1.25 l/ha and IFO PZN 2.0-3.3 l/ha were used in the experiments showed that these drugs are superior to other options. When used together with a suspension, it leads to an increase in the amount of green chlorophyll in plant leaves and an improvement in the biochemical composition of cell sap in plant tissues. As a result, resistance to various diseases and unfavorable weather conditions of the external environment increases. Therefore, the use of these chemical preparations against the yellow rust disease in grain fields in production ensures a high and quality harvest.

References

1. Meyliev.A.Kh., Oripov.A., Amanov.Sh. Control measures against yellow rust disease of wheat. // Agro science 2016 - y. 4 [42] – NO. B 58-59.
2. Kolesnikova.Yu.R. // Influence of agroecological factors on the productivity of spring soft wheat and the development of pathogens in the conditions of the north-west of the RFF.



Avtoreferat - St. Petersburg, 2012, pp. 18-19.

3. Vostroknutov. S.A. Yield and quality of fall wheat when using chemicals on the leached chernozem of the forest-steppe of the Middle Volga region. Penza State Agricultural Academy, 2012, p. 25.

4. Ivashchenko.I.N. Influence of growth regulators on resistance to stress factors, productivity and grain quality of winter wheat on leached chernozem // Stavropol: SGAU. – 2010, p. 24.