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INFLUENCE ON THE NATURAL INFECTED BACKGROUND OF THE FUNGICIDE BIOSTAR C.C.R. ON CROPS OF WINTER WHEAT AGAINST RUST IN THE IRRIGATED LANDS OF THE ANDIJAN REGION

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ABSTRACT:

The article provides information on the work done on the influence of the biological product Biostar c.c.r. and on the study of the biological effectiveness of the fungicide on winter wheat crops against rust, as well as on the growth, development and productivity, germination of wheat seeds, in the conditions of the educational and experimental farm of the Andijan Agricultural and Agro technological Institute. When processing seeds, awakening and exciting them with a biological product Biostar c.c.r. before sowing, seedlings will begin 2-3 days earlier than in the control variant. The phytohormonal property of this drug is its effect on the rapid growth and development of plants. In increasing the yield of grain crops, an important place belongs to the protection of plants from diseases, which often lead to a significant decrease in grain harvest and deterioration of the quality, and sometimes to the death of crops.

KEYWORDS: Soil, wheat, biological product, diseases, pests, grain, infestation, rust.

INTRODUCTION:

The increase in grain production in Uzbekistan should be ensured, first of all, by increasing the yield. For this, it is necessary to use all available reserves. In the conditions of modern intensive farming, weed control is one of the most important elements of the farming system, on which the increase in crop yields depends. The results of research and the best practices of practitioners indicate that none of the factors of intensification of agriculture, except for special ones aimed directly at combating diseases, contributes to a decrease in harmfulness and a decrease in contamination of fields.

Agricultural production currently has a significant assortment of fungicides, insecticides and herbicides to control disease, pests and weeds in crop production.

The criterion for the effective use of chemical plant protection agents is the achievement of a given degree of suppression of harmful objects with minimal danger to human health and the environment.

However, world experience shows that the constant and large-scale use of chemicals with a narrow spectrum of action leads to a sharp increase in insects resistant to insect-acaricides, phyto pathogens to systemic weed fungicides to constantly applied herbicides.

A high and stable grain yield can be obtained by intensifying its cultivation. The essence of this technology lies in the placement of crops according to the best predecessors, balanced plant nutrition and an integrated plant protection system. At the time of this global problem, an important place belongs to the search and introduction of new selective pesticides. The economic provision of their use will be determined by the amount of increase in the yield of grain crops.

In increasing the yield of grain crops, an important place belongs to the protection of plants from diseases, which often lead to a significant decrease in grain harvest and deterioration of the quality, and sometimes to the death of crops. The degree of harmfulness of diseases depends on the ecological conditions of cultivation and the characteristics of the crop. In some ecologically-geographical zones of the region, some diseases are more harmful.

The development of chemical methods for protecting grain crops from fungal diseases from aerogenic infections was carried out by Abduolimov G. Davronov (2007) considers the effectiveness of colloidal and ground sulfur, including carotene against wheat powdery mildew. The biological effectiveness of the drug, depending on its concentration, ranged from 62.9 - 90.3%, [1].

Mukhammadiev B. (2003) cites data that the optimal temperature for germination of uredinio spores of yellow rust is 14-160°C, within 4 hours 65-70% of spores germinate, and at 7-1000°C after 8-9 hours 70%, at a temperature of 180°C, spore germination slows down after 4 - 5 hours. [1] Germination rate is 5.4 - 10.1%, and at 25°C and above it is no longer observed.

Khusanov I.Sh. (2003) revealed that in spring wheat the use of systemic fungicides from the group of triazoles Bayleton 25%, Tilt 25% ae. their high efficiency against powdery mildew rust. [2]

V.P. Turapin and V.A. Motovoy (1995) believe that the causative agent of brown rust gives about 10 uredogenerations. The fungus develops at a temperature of 6 to 35°C and a relative humidity of 63 to 77% with a number of humid days of 15 or more. Their viability lasts from 1 to 38°C, in the winter period the spores do not lose germination in the shock up to 3.5 months at air temperatures up to -35°C. However, the recurrence of the disease on wheat was not established.

According to Sh.K. Alieva et al. (2019) shows triazole 50% that the use of the drug 0.17 l/ha of susceptibility to brown rust decreased, then the authors believe that when using the biological product, the decrease in the susceptibility of winter wheat by 27.8% root rot compared to the control to the experimental variant, the biological effectiveness against dust smut was 96.3%, about 96.1% of smut, where Raxil 60 FS etholon protector was used with 0.4 l/t of seeds, 90% of dust smut against smut 93.3%, and in the control the variant without processing was found 5.0 pieces of dust smut, 6.0 pieces of smut grilled out of one hundred ears [2,3,4,5].

Considering the above, the joint research workers of the Plant Protection Laboratory of the Research Institute and Leguminous Crops and the Andijan Branch of the Tashkent State University of the Department of Plant

Protection, and Agricultural Phytopathology, set the following tasks:

- to determine the biological effectiveness of the fungicide Biostar c.c.r. LLC "Agroximstar" (Uzbekistan) ADD (attention deficit disorder) Propicanozol 500gr/l for the fight against powdery mildew and rust diseases on winter wheat crops in the irrigated lands of the Andijan region;
- study the effect of the fungicide on growth and development, as well as on yield.

The experiment was carried out on crops of new winter wheat variety Pervitsa, zoned in the conditions of the Republic.

The purpose of our study was that the biological product acts on seed germination, growth and development of wheat, as well as plant damage on leaf rust and yield.

On the study of the biological effectiveness of the fungicidal action of the drug Biostar k.k.r. carried out in the experimental section of the Research Institute.

Sowing of seeds was carried out on May 5, 2019, in the morning from 9 to 10 o'clock at an air temperature of 21-23°C.

We used a brand sprayer with boom sprayers produced in Austria, the coverage width of which was 12 m, with a single treatment of 300 liters of working fluid consumption. During processing, the wind speed did not exceed 3-4 m/s.

The experiment was carried out on a large allotment area with a size of 2.0 hectares with four replicates.

Agrotechnics - before the soil outbreak, P2O5 and K2O were applied at the rate of phosphorus - 90 kg/ha and potassium - 60 kg/ha. Plowing was carried out in the mid of October with a PYa-5-35 plow to a depth of 27-30 cm. Wheat was sown on October 25 using a CH-16 selection grain seeder at a seeding depth of 3-4 cm. Seeding rate was 200 kg/ha. After sowing, recharge irrigation was carried out, full seedlings received on November 8-10.

Spraying with a preparation - Biostar c.c.r. against brown and yellow rust was carried out on May 5, 2019, according to the work program, the experiments were carried out according to the following scheme:

Table 1 . Experience scheme

№	Experience options	Processing rates, l/ha	Area (ha)
1	Control	Without processing	20
2	Biostar c.c.r.	0,17 l/ha	20
3	Tilzol 25% concentrated eulsion	0,5 l/ha	20

The area of the plots is 2.0 hectares, with four repetitions.

The incidence of crops with a complex of wheat diseases was considered by monitoring before treatment (May 5) and after treatment with the drug (May 15) according to the adopted methodology of the State Chemical Commission (2004) and the VIZR methodological instruction (1985).

According to the methodology, we carried out phenological observations on the growth and development of winter wheat plants every 15 days.

From the presented table 2 shows the data obtained are close to each other from 16.1 to 20.4 cm, as considering the treatment provided on May 15 in all variants.

Table 2 .The effect of the drug Biostar c.c.r. for the growth and development of winter wheat

№	Experience options	Parking density	Date of accounting			
			15.05	1.06	15.06	1.07
1	Control	4,3	16,1	40,9	52,3	63,2
2	Biostar c.c.r.	3,9	10,4	46,3	69,4	89,1
3	Tilzol 25% concentrated eulsion	3,9	18,3	41,1	57,5	72,4

Further observation showed that at 1.06 this tendency was violated, the highest growth of the main stem was noted in variant 2 of the experiment, the height of the main stem reached

46.3 cm, while in the control variant, the plant height was 40.9 cm or 5.4 cm lower.

It can be noted here that the plant of variant 2 looked healthier and differed sharply in morphological character from the control variant. This was reflected when considering the date of July 1. On this date, the highest growth was noted in option 2, plant growth reached 89 cm, as in the control it was 63.7 cm, or 25.4 cm lagged behind growth in the control.

To determine the fungicidal properties of the preparation Biostar c.c.r. on the susceptibility to rust on winter wheat.

Until the treatment with the fungicide Biostar c.c.r. (05.05.2019) the average total infection of winter wheat crops with yellow rust in the study area was 27.8%, and the intensity of development was 17.2% (Table 3).

According to the data of records and observations after treatment after 20 days with the fungicide Biostar k.k.r. in the control, where the fungicide treatment was not carried out, the incidence of yellow rust reached 82.9% with an intensity of disease development of 89.7%.

Table 3 .Yellow rust infection of winter wheat and intensity of disease development before treatment (May 5, 2019)

№	Experience options	Consumption rate, l/ha	The total number of accounting plants per 1 sq. m.	Affection		Disease development rate %
				pieces	%	
1	Control	Without processing	417	110,7	26,5	15,7
2	Biostar c.c.r.	0,17	415	115,5	27,8	17,2
3	Tilzol 25 concentrated eulsion etalon	0,5	419,5	113,2	27,0	16,5

As a result of the treatment of infected plants according to concentrated eulsion with the preparation at a rate of 0.17 l/ha, the infestation was 14.3%, and the intensity of disease development was 6.7%. In the reference variant, where the fungicide Tilzol 25% was used, this figure showed 15.3 and 7.2%, respectively, which provided protection of the crop from losses by suppressing yellow rust. [6, 65-71]

Biological effectiveness of fungicide Biostar c.c.r. in one of the studied rates 0.17 l / ha was higher compared to the standard Tilzol 25% concentrated eulsion Biostar preparation k.k.r. in one of the studied norms showed biological effectiveness (in terms of the intensity of the development of the disease) for yellow rust 82.8% and ethanol 81.5% (table 4)

Table 4 .Биологическая эффективность развития после обработки против желтой ржавчины на озимой пшенице (25 мая 2019 год**)**

№	Experience options	Consumption rate, l/ha	The total number of accounting plants per 1 sq. m.	Affection		Disease development rate %	Biological effectiveness %
				pieces	%		
1	Control	Without processing	417	345,7	82,9	89,7	-
2	Biostar c.c.r.	0,17	415	59,2	14,3	6,7	82,8
3	Tilzol 25 concentrated eulsion etalon	0,5	419,5	64,2	15,3	7,2	81,5

According to table 4, the yield obtained after full ripeness of wheat can be ascertained the high biological effectiveness of the drug Biostar c.c.r. after treatment with the preparation, grain yield increased by 1.7 centners per hectare.

Table 5.Effect of fungicide on winter wheat yield

№	Experience options	Consumption rate, l/ha	Grain yield by repetition of c/ha				Average yield grain c/ha	
			1	2	3	4		
1	Control	Without processing	63,3	62,7	62,7	64,5	63,3	-
2	Biostar c.c.r.	0,17	65,2	64,5	64,7	65,5	65,0	1,7
3	Tilzol 25 concentrated eulsion etalon	0,5	65,0	63,7	64,7	65,5	64,7	1,4

CONCLUSION:

Field studied fungicides Biostar c.c.r. Agrokhim Star LLC (Uzbekistan) against leaf diseases yellow rust on winter wheat crops in the irrigated lands of the Andijan region with a consumption rate of 0.17 l / ha contributed to a decrease in the number of infected plants with yellow rust on average 1.7 l / ha in comparison with control variant without processing.

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