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IJIEMR Transactions, online available on 12th June 2022.

Link : <https://ijiemr.org/downloads/Volume-11/Issue-06>

Title: EFFECTS OF RUST DISEASE ON WHEAT PRODUCTIVITY

volume 11, Issue 06, Pages: 1558-1560

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EFFECTS OF RUST DISEASE ON WHEAT PRODUCTIVITY

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Annotation. Yellow rust disease in winter wheat is the most dangerous disease in the Fergana Valley and is widespread in high humidity conditions. In recent years, the disease has spread to irrigated grain fields of the country, causing significant damage to the quality and quantity of grain grown, and the effective fungicidal effect against it.

Key words: fungus, pustule, leaf blade, chemical fight.

Protection of plants from pests is one of the most important problems in the country. It is now clear that without objective knowledge of pests, diseases and weeds of agricultural crops, on the one hand, and objective knowledge of the environment and its changing trends, on the other hand, it is impossible to implement protection measures in practice.

Planning protection measures against pests and diseases of grain crops has its own characteristics. These characteristics are determined by the influence of biological laws of growth and development of pests, the seasonality of production processes, the influence of natural conditions on the results of agricultural production and other factors. These processing times need to be carried out at a clearly defined time of year, at the most optimal time, because failure to strictly adhere to the deadlines for protection of agricultural crops from pests leads to the loss of large quantities of crops.

In the climatic conditions of Uzbekistan, grain crops are damaged by pests such as weevils, grain juices, thrips, slime worms and about 10 types of diseases. In recent years, it has been observed that these pests have spread to the irrigated grain

fields of the country, significantly damaging the quality and quantity of grain grown. This group of pests every year it has been found that they can lose up to 15-20%, and up to 45-50% when the climate is favorable for their development and reproduction.

The main diseases in cereals are yellow and brown rust, flour-dew, yellow spot (helminthosporiosis), dust and hard blackberries.

In the climatic conditions of Uzbekistan, April is a crucial period for the care of grain crops, including protection against pests and diseases. During this period, there is an outbreak of powdery mildew, yellow and brown rust diseases, as well as harmful insects and other pests.

Rust of winter wheat is widespread in all districts of Andijan region due to climate change. With this in mind, in order to reduce the impact of the fungus *Puccinia striiformis*, which causes rust in the conditions of Ulugnor, Kurgantepa and Izbaskan districts of the region, the following scheme was carried out.

Due to the conditions of these districts, the main variety was Krasnodarskaya 99. The experiment consisted of 4 returns and 4 options.

Table 1 The effect of various chemicals on the growth and development of winter wheat

Experiment options	Height of growth stem, cm				Number of balls		Number of leaves		The number of plants that have sprouted	
	1 IV	15 IV	1 V	15 V	1I V	15 IV	1 IV	15 IV	1 V	15 V
Control	12,2	28,7	54,5	67,8	2,8	3,3	1,8	2,3	3,4	3,5
Entolikur	13,0	36,5	66,2	82,9	3,7	4,6	1,9	3,6	4,3	4,5
DRUNK 300 EC	13,3	38,3	70,4	93,4	4,0	5,3	2,0	3,9	4,5	4,7

The experimental calculations were carried out on the basis of methodological manuals published by the Research Institute of Winter Wheat and Legume Cultivation in Irrigated Areas, the Republic of Uzbekistan Plant Protection and the Republican State Chemical Association. In the areas planted in the experimental districts, the seeds produced a full hectare after 12 days.

From April 1 of the following year, calculations were made on winter wheat seedlings in the experimental field.

According to the phenological observations, on April 1, in the variants of the experimental field in all districts, the height of the growing branch of plants was 11.9-13.3 cm.

Table 2 The effect of various chemicals on winter wheat rust disease in%

Experiment options	1IV		15IV		1V		15V	
	General morbidity%	Severe illness %	General morbidity%	Severe illness %	General morbidity%	Severe illness %	General morbidity%	Severe illness %
Control	0,4	0	20	0	13,3	2,7	16,8	4,4
Entolikur	0	0	0	0	2,1	0	3,5	0,4
DRUNK 300 EC	0	0	0	0	0,6	0	1,8	0

However, in subsequent observations, this pattern was gradually violated, especially in the May 1 observation, the best performance was recorded in 3 variants. In this variant, the height of the plant growth stem was 70.4-77.5 cm, in the control variant it was 54.1-56.8 cm, the difference between them was 10.7-16.3 cm.

After 3 days of application of anti-rust chemicals, the development of uredospores in the plant leaf plate decreased

by 75-80%, and the pustule began to dry out, changing the tension and color. Phenological observations show that autumn wheat seedlings planted in Izboskan and Ulugnor districts became infected with *Puccinia striiformis* 3-5 days earlier than in Kurgantepa district.

As of May 1, the control options in Izbaskan district showed the highest infestation, ie 14.6-19% less than other options, and 4.9-5.0% of plants were severely infected. It can be concluded that

the application of DRUNK 300 EC at the rate of 0.3 l / ha can lead to a decrease in the ability of the pathogen to affect the plant from 2 to 8 days. The decrease in disease under the influence of this drug has led to an increase in the yield of winter wheat.

The highest yields were obtained from variant 3 plants. The additional yield compared to the control option was 12.9-13.6 ts / ha. Among the chemicals, DRUNK 300 EC was the most acceptable among the chemicals due to the prolongation of the plant life cycle, with a maximum rate of 0.3 l / ha.

Reasonable planning and proper organization of the volumes of chemical treatments of grain against rust is one of the important factors in crop protection. In particular, in the conditions of Andijan region, the achievement of the set goal will be achieved through the development of optimal terms and standards of protection of winter wheat against rust in the naturally affected areas.

LIST OF REFERENCES

1. Яхьяев Х.К., Холмурадов Э.А. Экологический мониторинг // Ўзбекистон кишлок хўжалиги. – Тошкент. 2005. - № 12. – 28 б.
2. Ш.К.Алиев, Г.М.Мусаева, С.Мирзакаримов Кузги буғдойдаги занг замбуруғи тарқалишини ҳисобга олиш. Материалы международной научно-практической конференции. Андижан, 2019 г., 261-264 с.
3. Musaeva G. Methods for determining the effect of Puccinia striiformis West.on grain quality indicators. VII Международная научно-практическая конференция «Global science and innovations 2019: Central Asia» Nur-Sultan, Kazakhstan, sep-oct 2019. 29-с.
4. Мусаева Г.М. Влияние различных доз калийных минеральных удобрений на биоэкологию желтой ржавчины. // Агрохимёхимия ва ўсимликлар

карантини илмий амалий журнали. – Тошкент, 2019. – № 6 – Б. 52-53.

5. Мусаева, Г. М., & Каримов, Н. Д. (2019). Прогнозирование потери урожая и меры борьбы против ржавчины озимой пшеницы. in актуальные вопросы современной науки (pp. 126-129).