

DAMAGE TO PRODUCTIVITY OF FUSARIOSIS DISEASE IN MAIZE

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Abstract: As a result of the expansion of the areas and varieties of corn grown in our republic, the fungal diseases that occur in the corn vegetation seriously damage the productivity. Therefore, one of the urgent tasks facing the scientists of Uzbekistan is the development of comprehensive measures to combat fungal, viral and bacterial diseases. This article presents the impact of Fusarium disease on corn productivity.

Keywords; Maize, fusarium, disease, 1000 grain mass, seed treatment, yield, control, variant.

Maize is considered the most valuable, high-yield grain crop and has food, fodder, and technical and agro technical importance. Corn grain is used as food. Its grain is considered very nutritious and contains on average 10.6% fiber, 1.4% ash, 9-10% protein, 4-6% oil, 65-70% carbohydrates, vitamins V1, V2, V6 and E. Corn grain and stalk are used as fodder. Its grain is considered very nutritious (1 kg of corn grain has 1.34 kg of nutritional units) and is fed to poultry and cattle whole or in the form of groats. The technical importance of corn is that starch, alcohol, glucose, acetic acid are obtained from its grain, and paper, cardboard, wood alcohol, artificial rubber, artificial tar and various other products are obtained from its stem. Maize is also of agro technical importance, as it is a drought-resistant and grass-demanding plant, which leads to the reduction of weeds on the ground.

At the same time as having the cultivation of corn in the world's agriculture, the diseases encountered in the corn field have a serious effect on the yield and grain composition, and lead to the deterioration of technological quality storage facilities. Also, as a result of infection with fusarium (*Fusarium verticillioides*) disease, which occurs in corn, it causes serious damage to productivity, this disease is observed to lose up to 40% of productivity. In the experimental area of the Southern Agricultural Scientific Research Institute, the future 100 and Uzbekistan 300 new varieties of corn were carried out. Based on the research results, the impact of Fusarium disease on grain mass was determined.

About 120 fungi parasitize corn seeds, of which 27 have been identified. The latent fusarium infection can be maintained in the seeds for 2-3 years, which leads to 14.2% and 40.1% severe damage to germination. [1].

According to Gakaeva G.Yu, Gavrilova O.P, Levitin M.M, Novozhilov K.V studies, *Fusarium verticillioides* is one of the main pathogens of corn. Often, *F.verticillioides* infects corn together with the fungus *F.graminum*. It causes stem rot and ear rot and causes disease to spread. [2].

N.L. Svidunovich, A.G. Zhukovsky, N.L. Svidunovich, in the experiments of the harmfulness of fusarium disease was determined in the results of a 4-year (2014-2017) study on the identification of the critical stage of fusarium pathogens in corn seeds, which is manifested in the decrease in the weight of the ear and the weight of 1000

grains. The loss of grain yield when infected with *Fusarium verticillioides* fungus was 2.5-8.1% on average in each variant. [3].

In our research conducted on Future 100 and Uzbekistan 300 varieties of corn, it was observed that the incidence of fusarium disease was 0.6-22.3% in Future 100 varieties, and 1.1-37.9% in Uzbekistan 300 varieties. It was found that the Uzbekistan 300 variety is resistant to the disease compared to the Future 100 variety.

It was found that the average weight of the experimental variants in the control variant was 160 g, while in the Etalon (Vitavaks FS) variant it was 168.5 g, 8.5 g higher than the control. It was observed that gorkules 0.4-0.5 l/t variant was 197-210 g, 37-50 g higher than the control. Deltabu FS 0.4-0.5 l/t applied 1000 grain weight was 180-190 g, 20-30 g higher than control, while Essenzalil 1.5-2.0 l/t was 192-211 g more than control by 32-51 g. was determined. The highest value was observed to be 221-225 g in Maxim XL 035 FS variant, 61-65 g higher than Control (Table 1).

Table 1

Effect of seed treatment preparations on corn yield

№	Name of the drug	Future 100 varieties			Uzbekistan 300		
		Incidence rate, %	Mass of 1000 grains, g	Difference compared to control, g	Incidence rate, %	Mass of 1000 grains, g	Difference compared to control, g
1	Control	22,3	160	0	37,9	163,1	0
2	Vitavaks (Etalon) 200 FF 34% s.sus.k	0,7	168,5	8,5	3,7	182,5	19,4
3	Gurkules 6% s.e.sus 0.4 l/t	1,1	197	37	3,0	207	43,9
4	Gurkules 6% s.e.sus 0.5 l/t	0,6	210	50	2,1	217,3	54,2
5	DeltabuFS 6% s.e.sus 0.4 l/t	1,2	180	20	2,2	195	31,9
6	Deltabu FS 6% s.e.sus 0.5 l/t	1,0	190	30	2,8	214,2	51,1
7	Essenzalil 27% sus.k 1.5 l/t	3,0	192	32	2,2	216	52,9
8	Essenzalil 27% sus.k 2.0 l/t	2,7	211	51	2,0	220	56,9
9	Maxim XL 035 FS, 3.5% sus.k. 0.75 l/t	1,1	221	61	1,5	203	39,9
10	Maxim XL 035 FS, 3.5% sus.k. 2.0 l/t	0,8	225	65	1,1	218	54,9

When determining the weight of 1000 grains of the Uzbekistan 300 variety, it was found that the average is from 163.1 g to 220 g. It was found that the average weight of 1000 grains in the control variant was 163.1 g, while in the Vitavaks (Etalon) variant it was 182.5 g, 19.4 g higher than the control.

In conclusion, it can be noted that fusarium disease in corn has a serious effect on grain yield and technological quality indicators, leading to a decrease in yield and deterioration of grain quality. Taking this into account, we have reached a positive conclusion in the treatment and disease prevention with Essenzalil and Maxim XL 035FS seeding preparations to prevent the spread of Fusarium disease of corn.

REFERENCES USED:

1. Ivashchenko VG Diseases of maize of Fusarium etiology: main causes and consequences (review) // Bulletin of plant protection. – 2012. – №. 4. - S. 3-19.
2. Gagkaeva, T. Yu., Gavrilova, O. P., Levitin, M. M., Novozhilov, K. V. (2011). Fusarium of grain crops. Plant Protection and Quarantine, 5(69), 1.
3. Svidunovich N. L., Zhukovsky A. G. Influence of the timing of infection of corn cobs with Fusarium pathogens on the decrease in yield // Plant Protection. – 2022. – no. 43. - S. 195-202.