PHYTOSANITARY CONTROL OF *FUSARIUM* DISEASE IN VINEYARDS

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ABSTRACT. *This article presents the results of phytosanitary control of grape plants growing in farms specializing in viticulture in the Syrdarya region. During the study, a total of 127 hectares of land were divided into 3 groups. The total number of infected vineyards in the 1st group is the average symptomatology of fusarium disease - 18.03%, in the 2nd group - 22.97% of fusarium infestation, in the 3rd group the degree of damage is 26.01%.*

Key words: *fusarium, phytosanitary control, damage, vine plant.*

INTRODUCTION. In our country, the viticulture sector is one of the most important agricultural sectors, and it is a type of plant that plays an important role in increasing the volume of import of agricultural products and meeting the domestic needs of the population. Since ancient times, grapes and grape products, which are widely grown in almost all regions of the world, are nutritious, high-calorie, and play an important role in medicine and pharmaceuticals.

Although damage by harmful insects and microorganisms in the process of growing grapes on a global scale is small compared to other plants, the loss of grapes in a large number of field areas due to the influence of observed pests and microbiological organisms, this process leads to the next stages of grape storage and preparation of grape-based products, also has a significant effect, requires the improvement of measures to fight vine diseases and pests.

LITERATURE ANALYSIS AND METHODOLOGY. As we know, vines are often damaged by microorganisms like other plants [4]. In 2008, scientists from the University of California studied several vineyards and isolated microbes belonging to the genus *Fusarium*. Due to the fact that *Fusarium oxysporum* isolates cause severe damage to vines, 110R and St.George varieties were created based on Vitis vinifera Carignane variety, which is resistant to Fusarium fungus, by infecting 8 vine varieties with these isolates [7].

For the first time, Ukrainian scientists isolated from the flower and fruit of the vine (grape) the strain of saprophytic microorganisms *Bacillus thuringiensis, Alcaligenes faecalis, Lactobacillus plantarum,* pathogenic microorganisms *Agrobacterium spp.* [5].

Scientists from the California Polytechnic University, Antoinette de Senna and Amanda Lathrop, identified Botrytis cinerea, Fusarium pallidoroseum and *Fusarium moniliforme* as the most dangerous fungi in vineyards, causing significant damage during and after harvest [1].

Fungi found on vine branches and grape fruits have been widely studied worldwide, and the phylogenetic classification of these fungi was explained by Kasemeyer in an excellent and understandable way [6]. Also Serra [8], Uyovbisere [9], Whitelow-Weckert [10] and Gams [3] identified fungi found in vine plant organs and grape fruit and recommended their use for taxonomic description in research works.

According to, several factors have a negative impact on the development of viticulture in local conditions. In particular, negative consequences such as the increase in soil erosion, the sharp increase in the level of soil and water salinity, and the sharp increase in pests and diseases in agricultural crops have an impact on the development of the viticulture sector.

Vineyards are considered to be important strategic plants in agriculture, vines are distinguished by the availability of varieties that adapt to all climatic conditions, and are especially low in demand for water. In the conditions of Uzbekistan, vines are

noted as one of the plants that are susceptible to the least harmful insects and diseases.

Nevertheless, in recent years, in addition to traditional vineyard diseases, a large part of vineyards are affected by *fusarium* disease in local vineyards. Therefore, in the course of our research work, a number of farm fields specializing in viticulture and horticulture infected with symptoms of *fusarium* disease, located in the territory of Syrdarya region, were subjected to phytosanitary control.

During the analysis of scientific sources, the objects of research in the study of microorganisms found in vine plants are studied in several parts:

soil of vine growing areas;

vegetative organs of a vine plant (root, body, branches, leaves, flowers);

vegetable fruit and products based on it (grape fruit, fruit juice, fruit-based wine and wine materials) [4].

The experiment was carried out in laboratory conditions, taking as samples the soil of plants with symptoms of the disease, vegetative organs (branches, leaves) and fruits of grape plants. In this case, microscopy and wet chamber methods were used [2, 11].

RESULTS. Phytosanitary control was studied by dividing into 3 sample groups, taking into account the proximity of farms specializing in viticulture and horticulture, water consumption from the same area, and division into regions depending on the varieties of vines (Table 1).

These farms were selected due to the proximity of these farms, the high prevalence of fusarium disease symptoms, and the possibility of testing research works on the same farms.

As a result of phytosanitary control carried out on the vineyards of the 1st group, signs of *fusarium* in the territories of “Agroekotexnologiya” LLC on an area of 10.0 hectares averaged 18.62%, in the “Global Ideal” LLC, on an area of 20.0 hectares 17.43%, It has been established that in the vineyards of “Isroil ota” on an area of 5.0 hectares there are 18.68% of vineyards infected with *fusarium* symptoms, on average

17.38% in the vineyards of the farm of “Muxammad Xumoyinbogi” LLC on an area of 13.0 hectares. It was determined that the studied area in the vineyards of group 1 amounted to 48 hectares, and the average level of manifestation of *fusarium* disease was 18.03%.

Table 1.

Results of phytosanitary control in vineyards in the regions of Syrdarya region

№	The name of a farm specializing in viticulture	Agricultural vineyards, hectares	Areas with signs of Fusarium disease, hectares
Group 1 vineyards			
1	«Agroekotexnologiya» LLC (Xaqiqat SIU)	10	18,62
2	«Global Ideal» LLC (Uzoqov SIU)	20	17,43
3	«Isroil ota» LLC (Siddiqov SIU)	5	18,68
4	Muxammad Xumoyinbogi (Siddiqov SIU)	13	17,38
Group 1 total		48	18,03
Group 2 vineyards			
5	Baxovuddin Nakshbandiy (Bobur SIU)	6	17,72
6	Erqulota orzusi LLC (Gulistan district)	10	42,36
7	Jaxongir Mirza (Bobur SIU)	10	17,24
8	Alisher Sunnatilla (Bobur SIU)	10	19,12
9	Isayev Umit Ergashevich (Bobur SIU)	10	18,42
Group 2 total		46	22,97
Group 3 vineyards			
10	Erkin Madadkor (Boyovut SIU)	7	17,68
11	Sanjarbek Jurayev (Boyovut SIU)	10	19,86
12	Zukko Ziyo Lochin (3-Boyovut SIU)	10	19,72
13	Alijon Quvonchbek bogi (Gulistan district)	6	46,76
Group 3 total		33	26,01
According to the total studied vineyards:		127	22,33

According to the results of phytosanitary control in the vineyards of group 2 - 17.72% for 6.0 hectares of vineyards of the “Baxovuddin Nakshbandiy” estate, 42.36% for 10 hectares of vineyards of “Erqulota orzusi” LLC, 17.24% for 10

hectares of vineyards of the “Jaxongir Mirza”, 19.12% of the 10 hectares of vineyards on the farm of “Alisher Sunnatilla”, 18.42% of the 10 hectares of vineyards on the farm of “Isayev Umit Ergashevich” have signs of *fusarium* disease. In group 2, the total number of infected vineyards was 46.0 hectares, and it was found that the average level of *fusarium* infection was 22.97%.

As a result of phytosanitary control in Group 3 vineyards, 17.68% in 7.0 hectares of vineyards of the “Erkin Madadkor” farm, 19.86% in 10.0 hectares of vineyards of the “Sanjarbek Jurayev” farm, 10.86% of the “Zukko Ziyo Lochin” farm, It was found that 19.72% of vines in 10 hectares of vineyards, and 46.76% in 6.0 hectares of vineyards of “Alijon Quvonchbek bogi” farm are infected with *fusarium*. According to group 3, a total of 33.0 hectares of vineyards were subjected to phytosanitary inspection, and it was found that the average rate of damage of these vineyards with symptoms of *fusarium* disease was 26.01%.

DISCUSSION based on the results of this phytosportion study, although the total indicator of the defeat of all three studied groups of vineyards was lower than the requirements of quarantine and fence, 42.36% of the damage from the symptoms of fusariosis in the vineyards of “Erqulota orzusi” LLC located on the vineyards of the 2nd groups and 46.76% of the defeat symptoms of *fusarium* of the “Alijon Quvonchbek” bogi of the economy requires serious mycological study.

CONCLUSION, as can be seen from the above results, in the case of Syrdarya region, the total area of studied vineyards in farms specializing in viticulture and horticulture was 127.0 hectares, and it was found that the average number of vineyards affected by *fusarium* disease was 22.33%. Taking into account that these indicators increase with the arrival of wet weather, it is recommended to study the phytosanitary indicators of these vineyards at a deeper level due to the fact that there is a risk of spreading to nearby vineyards, control measures are carried out for many years, and it affects the quality and quantity of the harvest.

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