

Effect of Resource-Saving Technologies on Fusarium (*F.Oxygroum Melonis*) Disease in Melon Crop

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Abstract: *the article presents the results of the research on the effect of the use of resource-efficient technologies on Fusarium (*F.oxygroum melonis*) disease in melon crops.*

Keywords: *melon varieties, resource-efficient technologies, furrow irrigation and drip irrigation, Fusarium (*F.oxygroum melonis*) disease, degree of damage.*

Introduction

The ecological status of melons crops is one of the main factors determining the quality and productivity of crops. The existing plant protection system includes the collection of phytosanitary data, as well as the status of pest populations and the management of weeds in cultivated crops. This system is called ecological (phytosanitary) monitoring [2,4].

Various pests and diseases can also cause irreparable damage to cultivated plants, including the melon plant. Damage to the leafy biomass of plants with harmful diseases reduces their productivity. Taking into account all these factors, we assessed the ecological status of the researched field using the method of visual inspection of the presence of diseases [1,3,5].

Materials and Methods

Researches were carried out at the Department of "Fruit-Vegetable growing and Viticulture" of Tashkent State Agrarian University. Field experiments were conducted in 2020-2022 at the "Center for Innovative Developments and Consultancy in Agriculture" DUK pilot farm.

Experiments were carried out in two variants (watering by irrigation; furrow irrigation), and each variant was placed in 4 replicates. Planting scheme "Kichkintoy" variety (210+70): 2x60 cm, feeding area 0.84 m²; "Kok tinni 1087" variety (210+70): 2x100 cm, 1.4 m². One return area is 33.6 m² according to varieties; 56m². One option area is 134.4; 224 m². The total area of the experiment is 716.8 m².

In the experiment, damage to melon varieties was evaluated on a 5-point scale: 0 points - plants are healthy; 1 point - damage to 10% of the leaf surface; 2 points-up to 11-25%; 3-point from 26-50%; 4-point more than 50%; 5-point complete death of the plant.

Results and Discussion

Infection of the leaf, stem and fruit mass of melon crops with harmful diseases reduces their productivity. This is primarily due to the weakening of the photosynthetic activity, that is, the reduction of the leaf area of the affected plants.

The intensive spread of diseases does not allow to realize the genetic and biological potential of melon crops for productivity. Different fungicides are used 5-10 times during the growing season in the leading countries of the world, and 1-2 times in our country. One of the main agrotechnical



methods affecting the ecological status of the melon crop, as mentioned above, is the irrigation regime. In addition to the study of the spread of weeds in melon crops, depending on the irrigation technology, we studied the experimental field for the detection of diseases (Table 1).

During the experiments, the disease was not observed in 2020-2021, but in 2022 it was infected with Fusarium wilt (*F.oxysgroum melonis*). In the experiments, damage to melon varieties was assessed on a 5-point scale, and observations were made on 40 plants. "Kichkintoy" variety had 31.2% of Fusarium wilt and 25.2% of drip irrigation, while "Kok tinni1087" variety had 29.2%; It was found to be 22.7.

Table 1 Effects of irrigation methods of melon cultivars on Fusarium (*F.oxysgroum melonis*) disease in cultivated fields, 2022.

Watering methods	Number of plants, pcs	Infection with disease, point						Total point scale	Disease spread, %
		0	1	2	3	4	5		
"Kichkintoy" variety									
Furrow irrigation (control)	40	27,5	6,0	3,4	2,0	1,1	0,0	12,5	31,2
Drip irrigation	40	29,9	4,7	2,8	1,7	0,9	0,0	10,1	25,2
"Kok tinni 1087" variety									
Furrow irrigation (control)	40	28,3	5,7	3,1	1,9	1,0	0,0	11,7	29,2
Drip irrigation	40	30,9	4,3	2,5	1,6	0,7	0,0	9,1	22,7

When it is watered, not only the root layer, but the whole plant is watered. This leads to the spread of the disease. We know that fusarium thrives best when extreme humidity occurs. With drip irrigation, humidity is controlled and does not exceed the norm. Due to this, the disease is prevented.

Conclusion

If the "Kichkintoy" variety was irrigated by drip irrigation, the spread of the disease was 31.2%, and 25.2% when it was dripped, while in the "Kok tinni 1087" variety, these indicators were 29.2, respectively; It was found to be 22.7.

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