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"OFTOB" VARIETIES RESISTANT TO MELON FLOUR DEW DISEASE

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Abstract:

Long-term breeding work on the creation of melon varieties resistant to flour mildew disease was carried out at the Research Institute of Vegetable, Melon crops and Potato. As a result of the breeding work, the genes of resistance to powdery mildew disease were transferred to local varieties, and a melon variety was created, the fruits of which have high taste qualities. It was added to the state register in 2022.

Keywords: Melon, breeding, variety, hybrid, powdery mildew.

INTRODUCTION. Melon belongs to the Cucubitaceae Juss family and belongs to the Melo Adans family. Eating melon helps to control many physiological processes in the human body. It is used as a medicine for atherosclerosis, kidney, stomach, liver, nerve, cardiovascular diseases, tuberculosis, tuberculosis and anemia [5; 7].

Melon is a very common fruit consumed all over the world and is an excellent source of biologically active compounds for humans due to its good taste and rich chemical composition. Melon contains glucose, fructose, vitamins A, D, C, K, E and some vitamins of group B [6]. Vitamins (thiamine-vitamin B_1, riboflavin-vitamin B_2, nicotinic acid-vitamin RR) contained in the fruits of polys crops are part of enzymes, and their biological value depends on their participation in the processes of food digestion and metabolism. Vitamin E participates in the metabolism of carbohydrates and proteins in the body. It is a source of trace elements such as iron and cobalt, as well as folic acid, which plays an important role in the formation of blood in the body. Consuming the fruits of polys crops has a good effect on the formation of bile in the body, smoothens the work of the thyroid gland, and improves the reactivity of the nerves. Melon is recommended for liver diseases and atherosclerosis. Melon has been found to have a calming effect on the nervous system [8]. Since ancient times, melon has been a sweet food for humans, a nutritious product, a medicinal product for patients with small stones in the bladder [7]. Melon seed tinctures are used to treat cough, skin and stone diseases. The seeds contain compounds of high functional and nutritional potential. Biologically active compounds such as tocopherols, phospholipids and sterols are abundant in melon seeds, which have beneficial effects on humans [6;9]. The demand for such a healing blessing is increasing day by day in the domestic and foreign markets. Melons of Uzbekistan have a special sweet taste, a pleasant aroma, and different weights and shapes, characteristic of our region.

In our republic, an average of 150,000 hectares of poliza is planted every year, of which 35-40% is occupied by melons. The yield from each hectare of land is 20-24 tons. One of the factors that have a negative effect on the productivity of melons is powdery mildew, wilt disease and melon fly. In the years when these diseases and pests are widespread, the average yield decreases by 30-35%. Creating varieties resistant to powdery mildew and wilting of melons is one of the most important tasks.

RESEARCH METHOD AND MATERIALS. Breeding of local melon varieties with varieties resistant to powdery mildew, re-breeding, and selection methods were carried out [1].

The foreign variety Dorado, which is resistant to powdery mildew and fusarium, and the variety Obi novvot, which is resistant to local diseases, were used for selection. In the process of hybridization, the local Obi novvot variety was used as the maternal form, and the foreign Dorado variety was used as the paternal form.

In the G'2 generation of hybrids, disease-resistant plants were backcrossed 2 times with the local Obi novvot variety. Single and mass selection methods were used until the cultivar had genetic uniformity [4].

RESEARCH RESULTS. BC_2F_2 (Obi novvot x Dorado) x Obi novvot hybrid was selected based on the selection of small fruits, rounder appearance, smooth slices, lemon color, sertor and resistant to powdery mildew. The promising new L-161 line was tested in comparison with the Kishkintoy variety, whose fruits are included in the State Register.

As a result of phenological observations, the L-161 line and the comparative Kishkintoy variety germinated in 14 days. There was no significant difference in the opening of flowers between father and mother. In fruit ripening, L-161 line was 6 days earlier than the comparative variety, i.e. 84 days, compared to 90 days in the comparative Kichkintoy variety.

According to the results of biometric measurements, the length of the main stem of the L-161 line is 159.5 cm, the comparative Kichkintoy variety is 157.5 cm, the total length of the leaf is 934.0 cm in the line, the comparative variety is 753.5 cm, the number of side branches is 5 in the line, the comparative variety is 4 grain, so the new line is a strong growing bush. 161 liniyani fruits are rounder, lemon-colored, flowerless, some have white-yellow spots. The fruit is whole, some are 3/4 covered with a net, slightly sliced. The fruit is small in size, the average weight of a quality fruit is 1.8 kg, the flesh is white, the thickness is 3.7-4.0 cm, soft, soft, honey is delicious. The amount of soluble dry matter in the composition is on average 16.5%, the highest is 19.0%. It is 100% resistant to powdery mildew. The total yield is 22.5 t/ha, the quality yield is 19.7 t/ha, the total yield is 121.6%, the quality yield is 127.9% higher than the comparative variety (Table 1-2).

As a result of the environmental test conducted at the Samarkand Scientific Experiment Station, the amount of soluble dry matter in the L-161 line is on average 16.0%, the highest is 18.3%. It is 100% resistant to powdery mildew. The total yield was 20.5 t/ha, and the quality yield was 18.7 t/ha.

Table 1

Description of Melon Prospective Oftob (L-161 line) variety according to economic characteristics

Variety, line	Resistance to powdery mildew, %	Average fruit weight, kg	Soluble dry matter content, %		The thickness of the meat, cm
			average	the most	
Kichkintoy (st)	100	0,9	11,8	15,5	3,1
L-161 line	100	1,8	16,5	19,0	4,0

Table 2

Productivity indicators of the Oftob variety of melon

Variety, line	Total yield		Product yield		Commodity harvest, %	
	t/ha	in relation to st, %	t/ha	in relation to st, %	ratio to the total yield	in relation to st
Kichkintoy (st)	18,5	100	15,4	100	83,2	100
L-161 line	22,5	121,6	19,7	127,9	87,2	104,8
LSD_{05}	1,36					
Sx%	2,30					

At the Andijan scientific experimental station, the L-161 line had a total yield of 21.5 t/ha, a quality yield of 18.3 t/ha, and the amount of soluble dry matter in the content was 16.5% on average, the highest was 18.7%. The flour is 100% resistant to powdery mildew [3].

The L-161 line was included in the State Register of agricultural crops recommended for planting in the territory of the Republic of Uzbekistan under the name "Oftob" in 2022 [2].

CONCLUSIONS. In order to create varieties resistant to powdery mildew, the disease-resistant foreign "Dorado" variety was crossed with the local disease-resistant "Obi Novvot" variety, using the method of backcrossing 2 times.

In the environmental test conducted at the institute's Samarkand and Andijan scientific experimental stations, the total yield was 20.5-21.5 tons per hectare, and the quality was 18.7-18.3 tons.

The amount of soluble dry matter in the fruit is on average 16.0%, the highest is 18.7%. It is 100% resistant to powdery mildew.

Oftob variety was included in the State Register of agricultural crops recommended for planting in the territory of the Republic of Uzbekistan in 2022. PATENT No. NAP 00420 was issued.

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