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STUDY OF THE MELON COLLECTION IN THE CONDITIONS OF THE CLOSED GROUND OF UZBEKISTAN

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ABSTRACT

Breeding for the creation of varieties and hybrids of melons for protected ground in Uzbekistan is a new and promising direction.Unfortunately, until recently, having a wide variety of local melons for open ground, which are the best in the world, capable of satisfying the most refined tastes, nevertheless, work on creating varieties of melons for protected ground has not been carried out. The studied collection of melons and the varieties we have selected will subsequently be used for breeding purposes.

KEYWORDS: *Varieties, Hybrids, Protected Soil, Melons, Fruit Weight, Quality, Disease Resistance.*

INTRODUCTION

Central Asia, including Uzbekistan, has long been the center of melon cultivation. Melons in Uzbekistan are among the best in the world, capable of satisfying the most sophisticated tastes of consumers [6].

Melon is not only tasty, but also healthy. Traditional medicine has long recommended the melon to emaciated patients, especially after undergoing operations. Previously, a decoction of seeds was used to treat gonorrhea, and a decoction of the peel and roots was used to cleanse the stomach [5].

The high iron content makes melon useful for anemia, atherosclerosis and cardiovascular diseases. Like watermelon, melon is effective for kidney stones (Avicenna wrote about this).

Of paramount importance is their taste, which mainly depends on the sugar content of the pulp. The fruits contain such essential substances for the body as vitamin C, provitamin A (carotene) and pectins. Melon seeds contain up to 23–35% fat [1, 3, 12].

Currently, in the Republic of Uzbekistan, the area for melon cultivation occupies over 25,000 hectares, for watermelons, 25569 hectares, about 60 varieties have been zoned, of which more than 40 varieties of local selection [13].

However, until recently, selection work has not been carried out to create early ripening, highly productive, with high taste, resistant to powdery mildew, fusarium wilt with a fruit weight of 0.8 - 2.5 kg suitable for growing in greenhouses local varieties.

Materials and Methods

In the first scientific research institutes of vegetable and melon crops and potatoes in the greenhouse economy, since 2018, work has begun on breeding to create varieties and hybrids of melons.

In our experiments for 2020, the temperature on sunny days was 25-320C in March, 8-150C at night, 17-250C on cloudy days, 30-350C in the afternoon, 20-250C at night, in May and June the temperature reached on some days up to 550C without shading, after shading, the temperature in the greenhouses dropped to 350C, at night it was at the level of 22-260C.

According to our observations, the air humidity inside the film greenhouse was at the level of 80-90%, on rainy days it reached up to 95%. With good ventilation, this figure was at the level of 75-85%

One of the most promising cultivars is the method of heterotic breeding. So, as hybrid varieties, they have increased viability, which provides a sharp increase in yield [9].

The basic directions for obtaining hybrid seeds by natural cross-pollination of the original parental forms are: use as one of the parental forms of plants with signs of male sterility, the use of forms with signaling signs, the effect on the maternal forms of physiologically active substances in order to enhance the female sex, and the use of female (genocidal) forms [4, 7, 11, 14].

The methodology of intervarietal hybridization in melon has been studied by many researchers. It was found that the best time for crossing is morning hours (from 7 to 10 hours). It has been proven that the best set of hybrid fruits occurs when freshly harvested male flowers are pollinated with pollen. According to the generally accepted method of crossing, used for breeding purposes, the melon on the eve of the opening of female flowers is castrated, and in the morning only pollination and isolation [2, 8, 10].

Research Results

In our experimentswas studied a collection of 41 varieties of melons of foreign and local selection for open ground. The zoned local melon variety, Kichkintoy(meaning Tiny) for open ground, was taken as the standard, since in the Republic of Uzbekistan not a single melon variety has yet been zoned in protected soils, the Kichkintoy(Tiny) variety is medium-early ripe, the growing season is 75-80 days.

Fruits are spherical, fruit weight 0.8-1.2 kg, surface is smooth, background color is yellow, mesh is partial, coarse-meshed, bark hardness is average. The pulp is white, tender, dense, aromatic, tastes like honey. The sugar content is 8.3-11.8%. Productivity is 20-26 t / ha.

Of the studied melon cultivars, 19 cultivars were early ripening, 73-84 days, 10 mid-ripening cultivars - 86-93 days, 12 late-ripening cultivars - 104-123 days from mass shoots.

Table 1 and Figure 1 show the economically valuable characteristics of the melon varieties that emerged in the experiments of 2020 -2021.

Table 1. Economic evaluation of the separated varieties of melon when grown in film protected soil of Scientific-Research Institute of Vegetables Crops, Melons and Potatoes Republic of Uzbekistan(2020-2021)

№	Varietysamples	Descriptionoffruits				Tastingassessment, score
		Height, length, cm	Pulpthicknesscm	Pulpcolor	Fruitpulp	
variety	Kichkintoy (Tiny)	11x9	2,5	Lightgreen	soft	5
1	L-1	15,2x12	3,3	white	soft	4
2	L-2	23,3x13	3,5	white	soft	4
3	L-3	17x11,2	2,8	white	soft	4
4	L-6	14x12	3,9	white	soft	5
5	L-161	12x9	2,6	white	soft	5
6	Rohat	14x12	2,8	white	soft	5
7	L-15	14x12	3,0	white	soft	5
8	L-160	14x11	2,7	white	soft	5
9	F_1 -179	13x9	2,4	white	soft	5
10	L-161a	13x10	2,6	white	soft	5
11	L-1a	7x15	3,4	Lightwhite	soft	5
12	F_1 -Dave	13x12	3,4	white	soft	5
13	F_1Galimax	10x14	3,3	Lightwhite	soft	5
14	NS-168	22x12	3,4	white	soft	4
15	Company	21x12	3,0	white	soft	4
16	REM	18x14	3,5	white	soft	4
17	MEL-004	14x13	2,9	Lightwhite	soft	5

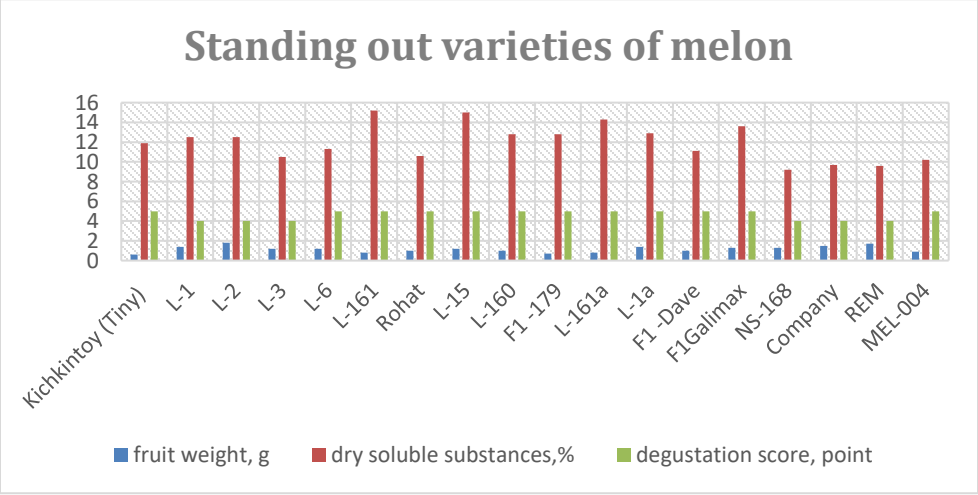

Fig. 1. Evaluation of stand-out varieties of melon

As can be seen from table 1, the separated varieties of melon had an average fruit weight of 0.6-1.8 kilograms, RSV (soluble dry matter) from 9.2-15.2%.

However, under greenhouse conditions, not all cultivars were resistant to powdery mildew (Pseudoperonosporacubensis), fusarium wilt (Fusariumoxysporum f. sp. melonis), and root rot (Rhizoctoniasolani).

Relatively resistant to root rot and fusarium wilt were F1 -179, REM, Kichkintoy, NS-168, F_1-Dave. The rest of the varieties were affected by fusarium wilting from 10-20%.

So, we can make a preliminary conclusion that in the collection nursery out of 41 varieties of foreign and local selection, 18 varieties were identified as the most interesting for selection, including the Kichkintoy standard. These varieties had high taste, appearance, relative resistance to powdery mildew, fusarium wilt.

CONCLUSION

Varieties L-161, L-15, L-161a, L-160, F_1-179, L-1, L-2, L-1a, F_1-Galimax, Kichkintoy were distinguished by high taste, the melon fruit pulp was soft, sweet, aromatic. The tasting score ranged from 4-5 points. These varieties were selected and will subsequently be used for breeding purposes.

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