CONDITIONS AND METHODS OF CARRYING OUT RESEARCH IN MELON GROWING (IN THE CONDITIONS OF KHOREZM REGION)

[1]Sadullaev Sanjarbek Madiyarovych, [2]Jumaniyozova Gulyor Yodgor qizi, [3]Matmurotova Iqlima Tulqin qizi, [4]Saidmurotova Aziza Ollaberganovna

[1] Urganch State University, associate professor, PhD.

[2,3,4] Students of Urgench State University

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Abstract. *In the cultivation of melon varieties, it is important to study the main features of the climate of the region: hot summer, cold winter, sudden changes of weather during the day, low rainfall, dry air.*

Keywords: *in the study, to determine the effectiveness of the optimal use of hydrogel for the growth and development of early, mid-ripening and late-ripening melon varieties.*

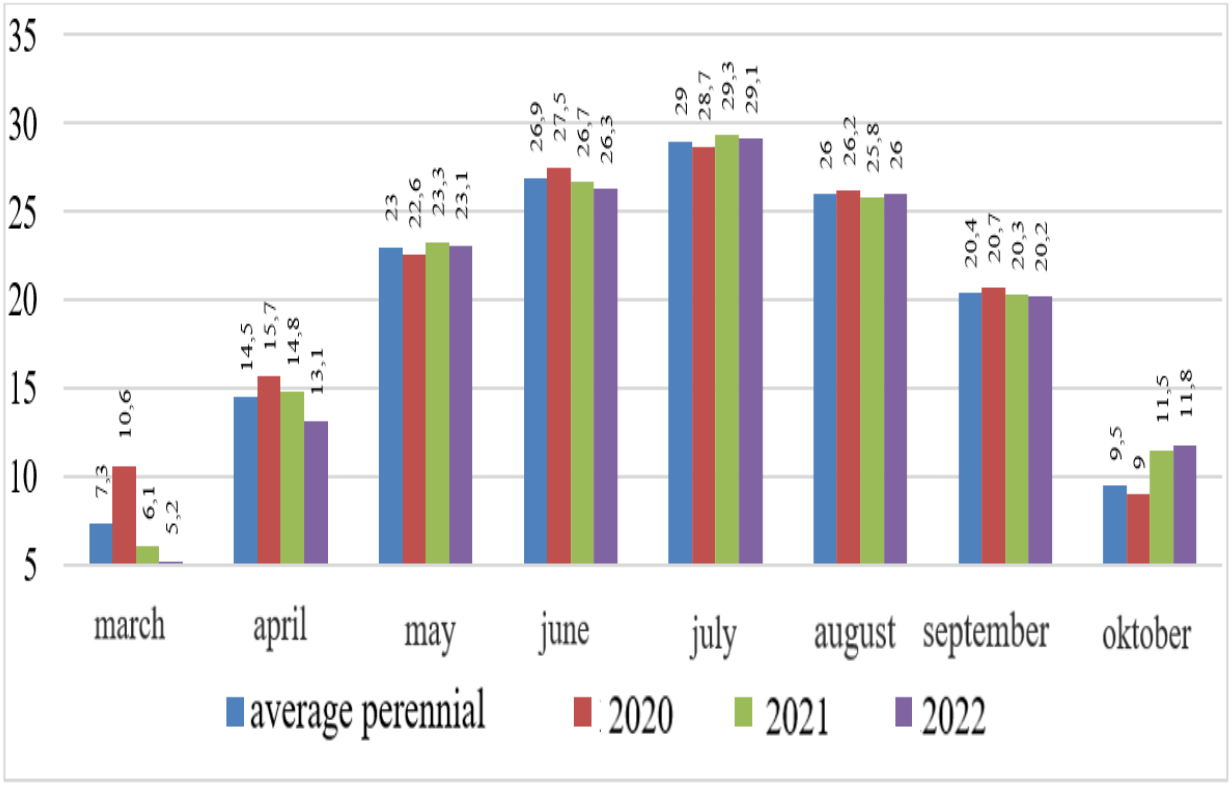
Introduction: It is located in the north-western part of the Republic of Uzbekistan between 40° and 42° north latitudes, 60-62° east longitudes. The northernmost point of the region corresponds to the Nuranbobo grove near the village of Olchin in the Gurlan Tumush. The southern tip is located a little south of Tuproqkala. The region stretches 280 km from northwest to southeast. It is about 80 km long from west to east, where the city of Urganch of the region is located. More than 80 percent of the territory of the province is located on the left bank of Amudarya, and the rest is on the right bank. Experimental fields are located in Gurlan district of Khorezm region.

The climate of the region is sharply continental, with a very high annual amplitude. The difference between the maximum and minimum temperatures reaches 78 degrees. Table 1 shows the average monthly temperature and relative humidity of the region during the experiment period, in which the average monthly temperature during the growing season was 20.4-29.0 degrees. The relative humidity of the air was 31.8-38.2 percent.Table 1.

Table 1.

Air temperature and relative humidity indicators (2021-2022).

Indicators	Months											
	I	II	III	IV	V	IV	VII	VIII	IX	X	XI	XII
Air temperature, t ^{0} C	3.0	2.5	7.3	14.5	23.0	26.9	29.0	26.0	20.4	9.5	10.4	0.4
Relative humidity, %	64.7	54.1	47.9	38.2	35.5	31.8	32.7	33.7	38.2	47.0	52.1	60.4
Precipitation, mm	7.4	10.8	18.0	16.2	9.1	4.3	2.0	1.1	2.2	4.5	10.1	11.7



The fact that the territory of the region is surrounded by sand allows the air temperature to rise up to 43-45 degrees. The average annual temperature in the oasis is +12 degrees and reaches 15 degrees in the extreme southern part. This indicator is 14 degrees in the city of Urganch. The average January temperature in the southern regions of the province is -3°C, in the rest of the region it is -4-5°C. The minimum temperature in the oasis is -32°C - 33°C. The average temperature in July is +28°C, and in the city of Urganch this indicator is equal to 28.5°C. Annual frost-free days in the region are 200 days on average, 204 in the southern part, and 195 in the northern parts.

In the Khorezm region, agriculture cannot be done without irrigation water. Average annual precipitation is 80-110 mm. Evaporation is 18-19 times higher than precipitation. 40% of precipitation falls in spring, 20-25% in autumn, 30-35% in winter, and only 10% in summer. Average monthly rainfall in July, August, September is 2 mm. The most precipitation falls in March (20-25 mm).

Agrochemical composition of the soil of the experimental field

Soil samples were taken from the 0-30, 30-50 cm layers of the soil in the field where scientific research is being conducted and analyzed at the beginning, middle and end of the season.

The analysis of the received data shows that as the soil layer deepens, its density increases. In the 0-30 cm layer, the density was equal to 1.44 g/cm3, and in the 48-150 cm layer, the density was equal to 1.516 g/cm3.

The salinity level was also found to be 1.43 g/kg in the 0-30 cm layer and 0.74 g/kg in the 48-150 cm layer by the end of the growing season (see Table 2.3).

The nitrate form of nitrogen decreased as the layer went down. In the 0-30 cm layer it was 7.12-9.82 mg/kg, and in the 48-150 cm layer it was 2.42 mg/kg. The same situation can be observed in the distribution of the ammonia form of nitrogen along the layers. In the 0-30 cm layer it was 6.05-8.48 mg/kg, and in the 48-150 cm layer it was 4.03 mg/kg.

Table 2.

Soil analysis from different layers of the experimental area.

Layer depth, cm	density г/см^3	salinity, г/кг	mhe nitrate form of nitrogenг/кг	Азотнинг аммиак Шакли, мг/кг	Фосфор, мг/к г	Алмашинувчи калий мг/к г	Чиринди, %	Азот, %	Фосфор, %
0 – 30	1,44	1,43	7,12	6,05	19,01	60	0,657	0,058	0,136
30 – 40	1,428	1,19	5,62	5,75	13,2	80	0,445	0,038	0,118
40 – 102	1,48	1,26	8,45	5,75	9,02	120	0,382	0,024	0,042
104 – 114	1,341	0,77	2,17	4,85	10,01	100	0,339	0,027	0,088
114 – 150	1,665		1,55	4,3	9,02	100	0,382	0,029	0,094
0 – 30	1,478	0,76	9,82	8,48	40,01	80	0,636	0,06	0,143
30 – 40	1,412	0,66	5,17	3,75	20,03	120	0,53	0,048	0,088
48 – 150	1,516	0,74	2,42	4,03	7,02	120	0,254	0,019	0,076

Phosphorus (R2O5) distribution across the layers also decreases as it goes down. It was found to be 19.01-40.01 mg/kg in the 0-30 cm layer, and 7.02-9.02 mg/kg in the 48-150 cm layer.

It is observed that exchangeable potassium (K2O5) distribution across the layers increases as it goes down. It was equal to 60-80 mg/kg in the 0-30 cm layer, and 100-120 mg/kg in the 48-150 cm layer [152; p. 190].

It can be seen that the percentage of humus, nitrogen and phosphorus in the layers decreases as the table goes down.

Melon growing technology in the experiment.

In the territory of the village of "Gandmiyan" of the Khiva district of the Khorezm region, the technology of melon cultivation was carried out according to the recommendation adopted by the Ministry of Agriculture of the Republic of Uzbekistan (2017). In 2018-2020, when the field experiment was carried out, melon varieties were planted as predecessor crops, after rice, cotton and winter wheat. After clearing the field of plant debris, in November, the field was irrigated, organic (20 t/ha) and mineral fertilizers (P150K60 kg/ha) were applied, plowed with a PN-4-35 plow on a DT-75 tractor at a depth of 25-27 cm.

In early spring, in the 1st decade of March, the plowed field was pressed with a chisel, a harrow and a trowel. The remaining 25 percent of phosphorus fertilizer was applied before planting. Then, using the KRN - 2.8A cultivator attached to the MTZ - 80 tractor, markers were taken at a depth of 8-10 cm for planting. The experimental field was planned according to the system of experiments and piled up (see Appendix 1).

Field experiments were planted during 2018-2020 in accordance with the experimental system of melon seeds. The seeding scheme was planted at a depth of 4-6 cm in cm. After the seeds were sown, 500-600 cubic meters of seed water were given and irrigated per hectare.

As soon as the grass sprouted and became a row, light mowing was done and the roughness was eliminated. Then the first yagana was done and two healthy plants were left in each nest. The

field area was first cultivated, in which the soil was tilled to a depth of 10-12 cm. After 6-7 days, it was fed with nitrogen fertilizers (30 percent of the annual rate), the furrow was removed, and then watered.

The period of application of organic and mineral fertilizers was carried out in accordance with the recommendations, half-rotted manure and nitrogen fertilizers (in the form of ammonium nitrate) were fed 2 times (the first at 1-2 leaves, the second before flowering). Plants were polled a second time during the growing season before flowering, leaving one plant in each plot. The tillers and lateral stems were combed 3 times before and after tillage and irrigation. Melon diseases and pests were treated twice (during flowering and fruiting) with fungicides and insectocaricides (Topaz - 1.5 l/ha, Nurell-D - 1 l/ha). In addition, sulfur powder was sprayed at 25 kg per hectare.

During the growing season, the melon plant was harvested twice by hand and cultivated twice. It was watered 1 time when planting seeds, 5 times during the growing season, with an interval of 10-15 days. The rate of irrigation in each irrigation was 500-700 m3 per hectare.

When the melons ripened according to the varieties, they were picked by hand starting from the 2nd decade of July, 3-4 times according to the varieties and dates. The number and weight of fruits were measured in each harvest, and the commercial and non-commercial yield was determined.

Research object and methodology

The purpose, task, object and subject of the research are presented in the introductory part of the dissertation.

In order to cover the topic, research was conducted to fulfill the tasks set in the following main areas:

1. Exploring the melon collection.

2. Separation of high-yielding, disease-resistant and exportable varieties of melon.

3. Determining the optimal planting period for the cultivation of early, mid-ripening and late-ripening varieties of melon.

4. To determine the effectiveness of the optimal use of hydrogel for the growth and development of early, mid-ripening and late-ripening varieties of melon.

1. The following experiment was carried out in the direction of "Research of the melon collection": In this, the collection of 125 varieties of melon samples (2018-2020) stored in the gene pool of our Republic was studied. The experiment is non-returnable, the field has 2 rows, its feeding area is 11.2 m2. Each field is a coupler (cm), length is 4 m, width is 2.8 m. and there are 12 plants on the site.

Germination and germination energy of melon seeds were determined in the laboratory. The seeds were soaked in distilled water for 18 hours, then placed in a thermostat at 22-25 degrees to germinate the seeds on filter paper in Petri dishes. The seeds were observed daily and the germination energy was determined 5 days after sowing and the laboratory germination after 14-16 days. The experiment was carried out with 4 replicates and 10 seeds were planted in each replicate.

2. In 2018-2019, a selection test of melon varieties was conducted in the direction of "Separation of high-yielding, disease-resistant and exportable varieties of melons". In this study, the Kok Gulyabi variety was used as the 1st standard as a comparison to the medium-sized Khan Gizi, Non Gosht Khorezm varieties of melon, and the late-season Bijir, Beshak 9, Beshak 5 forms, Kari Kiz varieties and the Toyona variety were compared to the L-Oibek line as the 2nd standard.

The experiment has 4 turns, each court is 6 m long. and there were 20 plants on the site, the feeding area was 16.8 m2. The seeding time and planting pattern were carried out at the same time as the above experiments.

CONCLUSION

According to the direction "Determining the optimal planting period for the cultivation of early, mid-ripening and late-ripening melon varieties" (2021-2022), early-ripening Tarnak, Khandalik, Gurvak varieties were sown on April 15, April 20, April 25, and May 1, and on April 20 as a control option. compared to the planted variant. The seeds of Ortapishar Ak Novvot, Kari Qiz, Zargulobi varieties were planted on May 5, May 10, May 15, and May 20, and the control option was compared with the option planted on May 15. Kechpishar Amudarya, Sahavat, Gulobi-Khorazmi varieties were planted on May 20, May 25, June 1, and June 5, and compared to the control option planted on May 25.

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