

GROWTH AND PRODUCTIVITY INDICATORS OF VEGETABLE (SWEET) MAIZE MEGATON F1 AND GOLD F1 HYBRIDS IN SOUTHERN REGIONS

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Abstract. The article analyzes the growth development and productivity indicators of the vegetable sweet corn Megaton F₁ and Gold F₁ plants in the conditions of the southern region Kashkadarya and presents the results obtained.

Key words. Sweet corn, hybrid, growth, yield, productivity, fertilization.

Introduction. One of the main problems in world agriculture is the lack of quality and nutritious food products. Because of its rich nutritional value, sweet corn is eaten when the unripe cobs are plump. It is usually eaten boiled, steamed or fried and mixed with various vegetables. Sweet corn (*Zea mays ssp. saccharata*) is becoming more and more important among the many subspecies of corn cultivated [2,5]. Sweet corn's taste and nutritional value have made it a prized crop in all countries, and sweet corn production is steadily increasing among countries around the world. The yield and productivity of sweet corn varies depending on the specific fertility status of the soil, the season of planting, the variety and species planted. Among other factors, the yield of sweet corn is influenced by the fertility status of the soil and the amount of fertilizers applied[3].

Materials and methods. Field experiments were carried out in 2022-2023 in the conditions of light gray soils that have been irrigated since ancient times in Karshi district of Kashkadarya region. The purpose of the study is to evaluate the growth, development and productivity of vegetable corn Megaton F1(st) and Gold F1 hybrids as main and repeated crops in different periods. Planting was carried out in 70x20 scheme as main crop on 10.03, 20.03, 20.04, 10.05 as repeated crop on 30.06, 10.07, 20.07 at a depth of 4-5 cm.

Megaton F1(st) is a hybrid heterozygous plant that produces bright yellow full and dense seeded pods at pod maturity. The pods are perfect for eating, storing and

canning when they are ripe. According to the growth period, it is a medium hybrid. With a strong root system, the plant forms stems that are resistant to falling under the influence of wind. At the time of the plant stumps, 1.8-2 pieces of almost the same size are formed on each stem of the same cylindrical shape. The amount of dry matter in the plant is 28%. The height of the formation of the fertile joint in the plant is 75-80 cm. The length of the stumps is 24-26 cm, and when good agrotechnics are used, it produces a stump of 28-30 cm. The side section of the bulb is 5 cm and forms full and dense large grains with 18-20 rows. The product does not lose its quality for a long time. A hybrid suitable for main and repeated planting, resistant to blister and powdery mildew disease [5,7].

Gold F1 is a sweet corn hybrid suitable for main and repeat crops and requires relatively warm temperatures. For the growth and development of the hybrid, the optimum temperature of the soil is required to be around 20-25 °C. When hybrid seeds are sown with a favorable planting time and a favorable soil environment, the seeds will produce uniform lawns in 7-10 days. It is a hybrid medium-sized plant with a growing period of 90-100 days[5,7].

During the experiment, seeds were sown at a depth of 4-5 cm in 10.03, 20.03, 20.04 and 10.05 as the main crop. During the planting period, the precipitation was observed in March, and the germination process was 7-10 days, and in the other periods, 5-7 days, respectively. The process of sprouting took place with the formation of even grasses. In the course of the experiments, when the height of the plants reached 12-15 cm, the treatment between the first row was carried out.

It can be seen from the data that germination was delayed in both hybrids planted in 10.03 period. It was found that Megaton F1(st) hybrid slightly outperformed Gold F1 hybrid in terms of germination index even at relatively low temperature. Almost no differences were observed in the seeds sown in the period 20.03. Germination was found to be 80-81%. When it was planted in 20.04 period, it was observed that the germination rate was equal in both varieties, i.e. 97-98%. When planted in the 10.05 period, a relatively low rate of germination was noted due

to the lack of moisture in the soil. It was found that standard plants were formed with uniform growth and development when appropriate agrotechnical measures were applied to plants.

Discussion of research results. According to Table 1, planting periods for plant growth, development and productivity indicators had a significant impact. It was found that Megaton F1(st) and Gold F1 hybrids planted at 10.03 were 175 cm and 178 cm, respectively, with no significant difference in growth. It was found that the samples planted in the 20.03 period were on average 171 cm and 175 cm, respectively.

Table 1

Growth and productivity indicators in the main and repeated planting

When grown as a main ein																
The period when the seed is sown	Megaton F ₁ (cr)								Gold F ₁							
	Plant height cm	joint spacing cm	Leaf length cm	Leaf width cm	Weight of one sow, gr.	The number of stalks on the bush	The number of rows of grain in the	The number of grains in one soot, pcs	Plant height	joint spacing cm	Leaf length	Leaf width cm	Weight of one sow, gr	The number of stalks on the bush	The number of rows of grain in the	The number of grains in one soot, pcs
10.03	175	17.5	73.1	7.8	498.5	1.9	17	605	178	16.3	80.1	7.5	489.5	2.0	16	601
20.03	171	16.8	75.7	7.1	507.4	2.0	18	609	175	16.7	76.5	7.4	510.4	1.9	16	605
20.04	172	20.4	71.1	7.6	515.4	2.4	20	614	180	18.9	73.5	7.0	512.4	2.3	19	611
10.05	160	14.2	70.2	6.8	498.8	1.8	17	595	167	16.8	73.0	6.5	488.8	1.9	16	591
When grown as a repeat ein																
30.06	172	17.3	72.0	7.9	485.6	1.8	16	599	176	16.9	77.8	7.1	490.5	1.9	17	607
10.07	180	18.4	77.6	8.0	504.5	2.0	18	604	178	17.8	79.2	7.3	499.2	2.2	19	611
20.07	175	19.9	80.2	7.6	503.0	1.7	17	602	172	18.6	75.8	9.0	493.6	2.0	17	608

When planted in this period, the Megaton F1 hybrid showed relative superiority in terms of plant height. The Gold F1 hybrid planted in the period of 20.03 has a low height, that is, an average of 175 cm. Among the planting periods, the tallest plants were planted in the 20.04 period, i.e. 172 cm and 180 cm respectively. It was found that the Gold F1 hybrid recorded a higher result (plant

height) than the standard. Hybrids with the lowest results, i.e. 160 cm and 167 cm, appeared when planted at 10.05. In addition, planting dates had a significant effect on changes in other plant characteristics. The joint spacing in the plant changed according to the planting period, the highest (longest joint spacing) result among the periods was recorded on average 20.4 cm and 18.9 cm respectively when planted in the 20.04 period. The shortest joint spacing was 14.2 cm recorded in the Megaton F1 hybrid planted in 10.05. In the Gold F1 hybrid, the shortest joint spacing, i.e. 16.7 cm, was observed when it was planted at 20.03. In addition, it was found that the length of the leaves in the plants varied depending on the planting dates, and the plants with the longest leaves were found to be 73.1 cm and 80.1 cm, respectively, when planted in the 10.03 period. During this period, there was a difference between the length of the leaves of the planted plants, and relatively longer leaves were observed in the Gold F1 hybrid. The plants with the shortest leaves were found to be 70.2 cm and 73.0 cm when planted at 10.05, respectively. It was 7.8 cm and 7.5 cm respectively when planted in 10.03 period. Plants with the shortest leaf width were 6.5 cm and 6.8 cm when planted at 10.05.

When we analyzed the productivity indicators, it was found that the number of pods per bush, the weight of one pod, the number of rows of grains per pod, and the number of grains per pod changed depending on the planting period. In particular, when planted for the main crop, the number of pods per bush was higher when planted in the period of 20.04, i.e. Megaton F1 2.4 units and Gold F1 2.3 units, and when repeated planting, Megaton F1 2.0 units and Gold F1 produced 2.2 units when planted in the period of 10.07. An increase in the weight of the sows was observed in the hybrids planted during these periods, it was 515.4 g and 512.4 g in the main planting and 504.5 g and 499.2 g in the repeated planting. The increase in the number of grain rows in the field was correspondingly, when the Megaton F1 hybrid was planted in the same period, 20 rows of the Gold F1 hybrid were planted, 19 rows of the Gold F1 hybrid, and 18 rows of the Megaton F1 hybrid, and 19 rows

of the Gold F1 hybrid were produced. The number of grains in one sow also recorded a high index when it was sown in this period.

Conclusion. Planting periods affect the growth, development and productivity of sweet corn, and it was determined that the most favorable planting period was 20.04 hours for the southern region when planted as a main crop, and 10.07 hours for both hybrids when planted as a repeat crop.

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