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QUALITY INDICATORS OF SWEET CORN VARIETIES PLANTED AS MAIN AND REPEATED CROP IN LIGHT GRAY SOILS

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Abstract: In this article, work was carried out to determine the technological indicators of the quality of sweet corn seeds of the Zamon and Mazza varieties planted as the main and secondary crops in light gray soil conditions in the irrigated areas of the republic and it was found that the quality indicators were higher when sowing varieties of sweet corn as a secondary crop.

Keywords: Sweet corn, main, repeated, grain, variety, control, fertilizer, rate, sowing pattern, protein, moisture, quality indicators.

Relevance of the topic. In the era of market economy in our republic, one of the important issues is to meet the demand of the population for food products and industry for raw materials. It is important to expand the areas of sweet corn, which is in growing demand of the population, to choose suitable varieties for each soil and climatic region, and to develop the technology of their cultivation.

Sweet corn (Z.m.L. Saccharata), one of the subspecies of the corn (Zea mays. L.) genus, has large and medium-sized grains. The shape of the grain is different, concave, slightly angular, wrinkled, horn-like endosperm is well developed, flour-like endosperm is absent. The color of the grain is white, light yellow, brown. It is used for the preparation of preserves during the milk ripening period of Sosati grain [1]. Therefore, after harvest, sweet corn should be eaten as soon as possible or canned or frozen [2].

The correct selection of sowing rates is the main element of the intensive corn cultivation technology, which allows to increase the yield by 30%. [3]. Physical properties of sweet corn vary from 9.12 to 17.06% depending on grain moisture content. [4]. corn seeds can be made on every farm. For this purpose, the seeds should be kept in the greenhouse until the planting season. Moisture content of grain during storage should not exceed 14-15%. [5].

The purpose of the study. The purpose of this study is to determine the effectiveness of planting sweet corn as a main and repeated crop in the conditions of irrigated light gray soils of Kashkadarya region, and to determine the effectiveness of using fertilizers in different rates, and to develop and introduce agrotechnics into production.

Research methods. Researches were conducted at the central experimental farm

of the Southern Agricultural Research Institute. The amount of total NPK and mobile NPK in soil, plants and grains, as well as quality indicators, were determined in the laboratories of the Southern Agricultural Research Institute.

Grain quality indicators were conducted based on GOST 29305-92 moisture content, GOST 7698-93 starch content, GOST 10846-91 protein content and GOST 8808-91 moisture content. Soil samples for analysis were taken according to the methods of "Metody agrokhimicheskih, agrofizicheskih i mikrobilochicheskih issledovaniy v polivnyx khlopkovyx rayonakh" (1963).

Amount of humus according to the method of I.V. Tyurin (GOST-26213); nitrate nitrogen-ion selective method, GOST-13496-10; total nitrogen, phosphorus and potassium in one sample I.M. Maltseva, L.P. Gritsenko's method; mobile phosphorus in 1% ammonium carbonate solution by the method of B.P. Machigin; by the method of P.V. Protasov in an alternating potassium flame photocalorimeter; water-soluble salts and dry residue were determined by the generally accepted method, GOST-26423-85, using a potentiometer in pH aqueous absorption.

In field conditions, the density of the soil is determined by the Kachinsky method using a 500 cm3 cylinder; specific mass by pycnometric method; soil porosity in the calculation method; water permeability of the soil was performed by the Kaczynski method.

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Результаты перевода

Перевод

Field and laboratory experiments were carried out on the basis of the methodological manual of the All-Russian Research Institute of Plant Science (1985). Phenological observations and biometric analyzes were carried out according to the methodological manual of the State Commission for Testing Agricultural Crops (1989).

Research results. In the experimental field of the Southern Agricultural Scientific Research Institute, sweet corn varieties "Zamon" and "Mazza" were planted as main and repeated crops in 90x10, 90x15, 90x20 planting schemes in 3 rotations, and different fertilizer standards were used, and harvesting was carried out in milk-wax ripening phases. After the seeds have passed the dormancy period, grain quality indicators (protein, moisture) were determined in laboratory conditions.

When the N_{90} P_{90} K_{60} fertilizer rate was applied to the sweet corn varieties planted as the main and repeated crops, it was observed that the moisture content of the grain was higher compared to the control and other fertilizer rate options. When applying the N_{90} P_{90} K_{60} fertilizer rate to the sweet corn varieties planted as the main crop, it was found that the grain moisture content was 12.4% in the Zamon variety and 12.3% in the Mazza variety in the 90x10 planting scheme. In the 90x15 planting scheme, it was noted that 13.2% was in the Zamon variety, and 12.9% in the Mazza variety. In the 90x20 planting scheme, it

was observed that it was 13% in the Zamon variety and 12.4% in the Mazza variety.

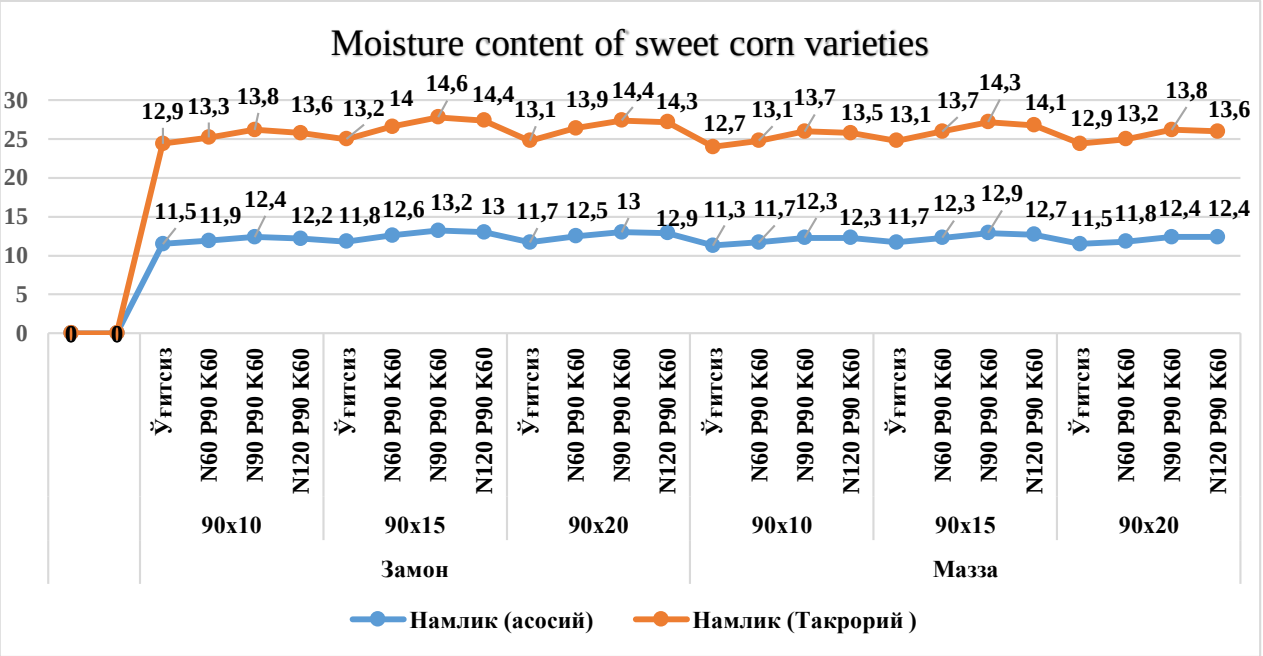

Table -1. Moisture content of sweet corn varieties

When the fertilizer standard $N_{90}\,P_{90}\,K_{60}$ was applied to the sweet corn varieties planted as a repeated crop, the moisture content of the grain was on average 13.8% in the Zamon variety and 13.7% in the Mazza variety in the 90x10 planting scheme, and 14.6% in the Zamon variety and 14.6% in the Mazza variety in the 90x15 planting scheme. It was noted that it was .3%. In the 90x20 planting scheme, it was found to be 14.4% in the Zamon variety, and 13.8% in the Mazza variety.

According to the results of the research, when the sweet corn varieties planted as the main crop were planted in the 90x10 planting scheme, the protein content of the grain was the lowest in the control variant, while the highest indicator was observed when the $N_{90}\,P_{90}\,K_{60}$ fertilizer standard was used. When $N_{90}\,P_{90}\,K_{60}$ fertilizer rate was used, it was found that it was 10.7% in Zamon variety and 10% in Mazza variety. In the 90x15 and 90x20 planting scheme, the lowest rate was in the control variant, while the highest rate was observed when $N_{90}\,P_{90}\,K_{60}$ fertilizer rate was applied. In the 90x15 planting scheme, when $N_{90}\,P_{90}\,K_{60}$ fertilizer rate was used, it was 11.2% in Zamon variety and 10.5% in Mazza variety, while in 90x20 planting scheme, it was 11% in Zamon variety and 10.3% in Mazza variety.

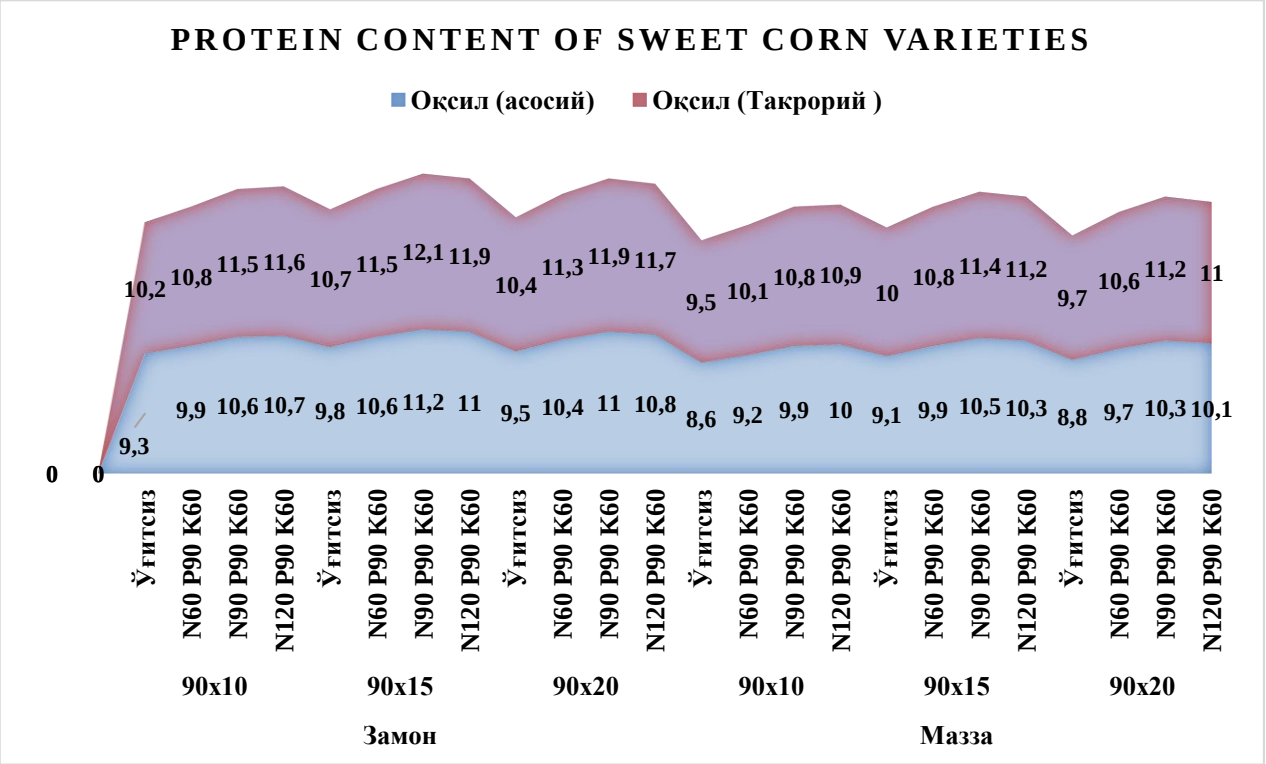

Table-2. Protein content of sweet corn varieties

When the sweet corn cultivars planted as a repeated crop were planted in the 90x10 planting scheme, the lowest indicator of grain protein was in the control option, while the highest indicator was observed when the N120 P90 K60 fertilizer rate was applied. When N120 P90 K60 fertilizer rate was used, it was found that it was 11.6% in Zamon variety and 10.9% in Mazza variety. In the 90x15 and 90x20 planting scheme, the lowest rate was in the control variant, while the highest rate was observed when N90 P90 K60 fertilizer rate was applied. In the 90x15 planting scheme, when N90 P90 K60 fertilizer rate was used, it was 12.1% in Zamon variety and 11.4% in Mazza variety, while in 90x20 planting scheme, it was 11.9% in Zamon variety and 11.2% in Mazza variety.

In conclusion, it can be said that sweet corn varieties planted as a repeat crop had higher grain quality indicators compared to sweet corn varieties planted as a main crop.

Cultivation of sweet corn varieties in the irrigated fields of light gray soils of Kashkadarya region as a repeated crop in the 90x15 planting scheme and the use of fertilizer N90 P90 K60 led to an increase in grain quality indicators.

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