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Influence of water insurance upon technological qualities of root crops of sugar beet of various lifeforms

Goal. To investigate the influence of different modes of moisture provision on the formation of technological qualities of sugar beet root crops of different breeding origin. **Methods.** Vegetative, laboratory, statistical. **Results.** On the basis of the analysis of the research results, the influence of three modes of moisture supply of the soil - 45, 60 and 75% of the total field moisture content (PPV) on the formation of technological qualities of beet sugar of different breeding origin during the harvesting period was revealed. **Conclusions.** For increasing the level of soil moisture from 45 to 75%, the technological yield of sugar beet sugar varieties and hybrids of various biological forms ($R^2 = 0,93 - 0,99$) increases due to the increase in the mass of root crops. However, it is advisable to determine the optimal conditions for moisture provision separately for each grade or hybrid.

Key words: sugar beet, hybrids, HW regime, variety, technological qualities.

Introduction. On the formation of productivity and productivity and technological qualities of the root-crop of beet fruit. Of particular relevance is the question of sugar influenced by several factors: aroklimatych-takes in modern conditions of mass vyro-ni conditions, agriculture cultivation, fertilizer, sugar beet hybrids schuvannya different se-sort, methods and timing of harvest and lecture form, because each has other hybrids. [1, 3-5]. In particular, the treatment significantly affects individual response to specific volohozabezpechennya level of soil moisture as part volohozabezpechennya soil. To deeper proficiency in the process of growth and development of plants is one of the teachings of this issue, and the current one is urged. For beets, the sugar character is a change in climatic conditions in Ukraine. it is the economical use of water, but the purpose of research - establishing the impact of the lack of quantity in the soil, especially big-volohozabezpechennya different modes of ground t at a critical period of growth, the performance of the technological quality of sugar beet root crop plants sharply reduced [8 - 11]. At the same time, sugar is of different breeding origin. Precipitation contributes to the high-quality dissolution of Materials and Methods of Research. They fertilizers [2, 7], which in turn increases the study was conducted at the growing site laboratory diagnostics and power optimization of the Institute of Political bioenerhe-crops and sugar beet NAAS. We used the vessel Wagner (d - 21 cm, h - 35 cm) with a capacity of 14.5 kg of air-ground NASUA the vessel, which fill-typical black soil shaft vyluhuvanyum with agrochemical characteristics: humus - 3.8 - 4%; PH of the salt - 6,4 - 6,6; Ng - 1.4-1.7 mg • equivalent to 100 grams of soil mobile phosphorus and potassium exchange for Chirikov - 184-197 and 81-89 mg / kg soil luzhnohidro-interim nitrogen - 159-163 mg / kg soil (Behind Cornfield) In the experiment, we studied 3 variants of moisture-freezing of soil: 45, 60 and 75% of APV. The required moisture was maintained by watering the soil in mass-vessels. Experiments were conducted on the background of an optimal dose of fertilizers 3 g dp / vessel NPK. Nitrogen fertilizers - ammonium nitrate, phosphorus - a simple granulated superphosphate, potassium - potassium chloride. Investigated the reaction to the waterproofing of sugar beet beet Uladovsky monocotyledon 35, a hybrid Ukrainian SS 70, created by domestic breeders, Extra and Robert - selection of the company "KVS" (Germany) and KV Zbruch, created at the Yaltushkovskoye research and selection station of the Institute of bioenergetic cultures And sugar beets of NAAS using the line of pollinator of the CVS. Sowing was carried out at the end of April - in early May, the harvest was harvested - in early October. Repeat 7 times. Determination of sugar content and technological

qualities of root crops during the period of harvesting of beet sugar was carried out in accordance with generally accepted methods [6].

Research results. Studies have established that the level of saturation of soil in the womb influences the content of sugars in the root-crops. In the version with minimal collateral moisture (45% PPV) sugar beet and potatoes for the period of harvesting sugar beet varieties and hybrids that are studied in the experiments was 18.38% -18.68. Hydration (run-tu) 60% PPV positive effect on sugar beet root crop sugar selection of different origin, it do-stovirno increased compared to the previous version and was 18,57-19,33%. The impact of further increasing soil moisture to 75% PPV for sugar beet root crop sugar Ukrainian selection was insignificant, and sugar beets foreign and joint selection characterized by its decrease-tion to 17,93-18,70% compared to the option provided where PPV ground level 60%. This is due to the increase in the weight of the co-rhenium, since a significant part of the assimilates formed during photosynthesis is spent on growth processes. The results of researches indicate that the content of -amine nitrogen in sugar beet root crops during the harvesting period decreased for increasing the level of moisture content of the soil. Its lowest rate against the background of 45% PPV was found in sugar beets and Robert hi-brydiv Extra - 0.096 and 0.097%, while the maximum - in a variety Uladvivskyy odno-nasinnyy 35 - 0,130%. With an increase in the moisture content in the soil to 60% of the APV, there was a decrease in the content of -amine nitrogen in the root crops and on average in hybrids it was 0.079-0.106%. Against 75% PPV sposteri-haly further reduction of -amino nitrogen in sugar beet roots po-hodzhennya various indicators and its contents ranged within 0,062-0,097% with a maximum of hibry-da Ukrainian FM 70 and minimum of hybrid HF Zbruch (Table) Conductometric ash contents in wheat crops of variants with 45% of SRV was 0.390-0.535%, where the sugar beet of the joint selection of ZBrush beet was the smallest and the highest one was Uladovsky monocotyledon 35. The maximum value of the content of konduktometric ash was 60% In the root crops in sugar beet beetles the Ukrainian SS 70 (0,527%), against the background of 75% - Robert (0,501%). The smallest parameters of the parameter remained on the hybrid KV Zbruch - 0,429 and 0,378% respectively. The purity (benignity) of the juice did not change in the background of humidity and was within the range of 91,92-95,54%. Only in variants with 75% of the PPV in sugar beet root crops and domestic breeding hybrids this figure reached 96.59 and 97.05% respectively. The loss of sugar beet molasses in the sugar beet and potatoes sort Uladvivskyy odno-nasinnyy 35 and the hybrid of Robert reached its peak on the background of 45% PPV - 2.01 and 1.87% respectively. In hybrids Ukrainian SS 70 and KV Zbruch - for 60% of the PPV - 1.98 and 1.63%, and the hybrid extra on the background of 75% of the PPV - 1.81%. According to the technological capacity for processing to the category "good", where the beneficity of purified juice was more than 91.6% and the MB factor was less than 30, the root crops of all studied varieties and hybrids belonged to all modes of moisture provision.

Technological qualities of root crops of beet sugar of different origin depending on the level of soil moisture provision

Proceeding from the technological qualities of non-corn beet sugar, the maximum expected technological yield of sugar in the pre-trace is recorded in variants with 75% EPV in beets of sugar beet hybrid of the selection of KV Zbruch - 189.94 g / vessel. His hybrids of foreign selection Extra and Robert were somewhat different - 178,43 and 170,66 g / per vessel. On the background of 60% of the HPV leader was the hybrid Extra (166.70 g / vessel), against the background of 45% PPV - a hybrid of Robert (135.72 g / vessel). Increasing the moisture content of the soil from 45 to 60% positively influenced the indicators of technological output of sugar. The difference between these variants for sugar beet hybrids and Extra was 19.7%, for KV Zbruch - 15.5, Ukrainian World Cup 70 - 15.2%. The plants of the hybrid KV Zbruch responded to the level of 75% of the HPV as much as possible and the expected technological yield of sugar increased by 20% compared with 60% of the HPV. The correlation between the level of soil moisture provision and the high technology yield of sugar from the root of the sugar beet root of all varieties and hybrids studied in the experiment (figure) was established. The correlation coefficient is $R^2 = 0,95-0,99$.

The dependence of technological yield of sugar of non-corn sugar beets of different breeding from moisture provision of the soil: - Uladovsky perennial 35; - Ukrainian hs 70; - extra; - roberta; - kV in the hand

The growth of the technological output of the sugar of the hybrid Robert, which remained unchanged. As the level of moisture supply increases, the background of 75% of the PPV increasing the estimated yield of 45 to 75% of the HPV occurs mainly on the course of the sugar, compared with 60% of the ARV observed due to the growth of the mass of the root. At the same time, only sugar beets of Ukrainian breeding estimated the

yield of sugar for increasing the level (15,94-16,61%). In the remaining hybrids, moisture content ranges from 45 to 60% of the PPV counting yield of sugar significantly decreased, increased in grades and hybrids (15.87-16.82%), except for Xia - 15.25-16.38%.

Conclusions

The increase in the level of soil moisture from 45 to 75% is due to an increase in the technological yield of sugar beets of sugar varieties and hybrids of various biological forms ($R^2 = 0,93 - 0,99$) due to the increase in the mass of the root. The highest rates were found in the hybrid of the joint selection of KV Zbruch on the background of 75% of the HPV - 189.94 g / vessel. At the same time, the estimated yield of sugar was positively influenced by the growth of SFW from 45 to 60%, except for the Robert hybrid, where it remained at the same level. Further increase in the level of moisture up to 75% contributed to an increase in the estimated yield of sugar in sugar beets of Ukrainian selection, while in the remaining hybrids it decreased significantly. That is, only due to careful study of the peculiarities of the reaction of sugar beet plants to the level of moisture provision it is possible to determine its optimum parameters in order to provide favorable conditions for the cultivation of a variety or hybrid, which guarantee the maximum realization of the biological potential laid in the genotype of the culture.

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