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STUDY OF THE IMPORTANT ECONOMIC TRAITS OF SOYBEAN VARIETIES PLANTED AS A RECIPROCAL CROP

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Abstract
This article provides information about valuable economic characteristics of soybean varieties planted as repeated crops in Navoi region.

Keywords: soybean, local, foreign, valuable, legume, grain, productivity.

Аннотация:
в данной статье представлены сведения о ценных хозяйственных характеристиках сортов сои, выращиваемых в качестве повторных культур в Навоийской области.

Ключевые слова: соя, местная, зарубежная, ценная, бобовая, зерно, урожайность.

Introduction

Soybean is the most widely grown protein crop worldwide, and due to the sharp increase in demand for soybean products, the area under cultivation of this plant is expanding in recent years. At this point, it is necessary to select and plant varieties of soybeans adapted to different soil and climate conditions as a repeated crop on the lands vacated by autumn grain crops, to study and breed valuable economic traits, to create varieties resistant to various stress factors and there is a strong emphasis on testing and learning in different ecological regions.

Study of the topic and research methods

Soybean crop productivity is provided by the following parameters: the number of plants per unit area, the number of pods per plant, the number of grains per plant and the weight of 1000 grains, that is, the yield of the variety of plants depends on productivity (average yield of one plant) and the thickness of the crop (seedling) in the area [9].

The bean of the soybean plant is large (6-7 cm), medium (4-5 cm), small (3-4 cm), upright, curved. The number of pods in one plant varies from 10 to 350, depending on the characteristics of the variety and soil and climate conditions. The pod is hairy, the pod contains 1-4 seeds. The color of the pods is light brown, dark brown, blue, gray. In some varieties, the pods crackle when ripe. Pods are located in the lower, middle and upper parts of the plant stem. The seed is black, brown, green, yellow. The shape is spherical, ship-shaped, oblong, flat. The seed is small and large. The weight of 1000 seeds is 100-520 g, depending on their size. The length of the seed is 5-17 mm, the width is 4-9 mm, the shell is smooth, shiny or dull. The surface of the surface is smooth, oblong, and poniform. Soybean varieties are distinguished by the following characteristics: flower color (white, pink, purple), bush color (white, brown), seed shape (round, spherical, poniform, flat), seed color (yellow, green, brown, black and purple), seed size - (length 6-13 mm, width 4-85 mm,

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weight of 1000 350-370 g), color of seed coat (white, brown and black color) is determined depending on [8].

Results and discussion

Scientific research work was carried out in the field conditions of Karmana district of Navoi region during 2020-2022. As the object of the study, the domestic soybean varieties Ustoz-MMAn-60, To'maris-MMAn-60, Oyjamol, Selekta-201 belonging to the selection of foreign Russia (control) and Nena belonging to the selection of Sparta, Kazakhstan were used.[2] , [3].

In 2020, it was observed that the number of pods per plant in domestic and foreign soybean varieties planted in the conditions of Navoi region was higher in all varieties compared to the control variety. The highest indicators were found in the foreign Sparta variety (130.7±6.35 units). It was noted that the number of pods in one plant is from 70 to 131 in soybean varieties. It was noted that the number of pods per bush is higher in the Sparta variety.

In 2021, the number of pods per bush in soybean varieties was the highest in the Oyjamol variety, 106.5±3.87 units, and the lowest indicator was in the control variety (73.6±3.26 units, respectively).

In 2022, the number of pods was in the Oyjamol variety (277.2±8.6 pieces), and the lowest indicator was found in the Nena variety (97.5±8.21 pieces).

Indicators of the number of pods per plant in the Navoi region, it was noted that foreign Sparta and local Oyjamol varieties had a higher number of pods compared to the control and other varieties. It was found that the number of pods per bush is low in Nena variety compared to other experimental varieties (Table 1).

Table 1 **Indicators of the number of pods per plant in soybean varieties planted as a repeated crop in the conditions of Navoi region, units**

S/n	Domestic and foreign soybean varieties	2020	2021	2022
1	Selekta-201(control)	69,8±1,68	73,6±3,26	100,6±3,6
2	Sparta	130,7±6,35	98,8±7,38	214,0±10,31
3	Nena	96,4±2,9	94,5±3,25	97,5±8,21
4	Oyjamol	97,1±4,96	106,5±3,87	277,2±8,6
5	Ustoz-MMAn-60	85,6±1,85	85±5,76	110,9±4,87
6	Tomaris-MMAn-60	80,3±3,5	75,6±5,22	131,6±2,41

Total number of grains per plant in domestic and foreign soybean varieties grown as a repeated crop. In 2020, in domestic and foreign soybean varieties planted in Navoi region, the highest indicator of the total number of grains per plant compared to the control variety is in the local Ustoz-MMAn-60 variety (389.9±6.2 pieces), and the lowest The indicator was found in the control variety (201.2±7.47 units). According to the results recorded during 2021-2022, the highest indicator was determined in the Oyjamol variety (424.6±8.93 units, respectively). (Table 2).

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Table 2 **Indicators of the total number of grains per plant in soybean varieties planted as a repeated crop in the conditions of Navoi region, grains**

T/r	Domestic and foreign soybean varieties	2020	2021	2022
1	Selekta-201(control)	201,2±7,47	214,9±8,47	298,4±5,97
2	Sparta	251,2±7,03	294,6±6,03	408,2±7,03
3	Nena	285,6±7,76	281,3±9,76	299,6±8,76
4	Oyjamol	288,4±8,93	420,0±5,93	424,6±8,93
5	Ustoz MMAn-60	389,9±6,2	312,3±6,7	316,7±6,2
6	Tomaris MMAn-60	238,9±8,52	215,1±5,52	387,9±5,77

One of the main indicators determining the quality of seed grain is its absolute weight. In the course of our research, one of the most important economic indicators was the total grain weight per plant. Among local and foreign soybean varieties in the Navoi region, the highest indicator compared to the control variant in 2020-2022 is the local Oyjamol variety (160.8±3.5 g, 162.26±3.53 g, 310±0.91 g, respectively) and the lowest value was found in Nena variety (63.07±0.85 gr, 64.55±0.86 gr, 69.86±0.92 gr, respectively) (Table 3).

Table 3 **Indicators of total grain weight per plant of soybean varieties planted as a repeated crop in the conditions of Navoi region, grams**

T/r	Domestic and foreign soybean varieties	2020	2021	2022
1	Selekta-201(control)	67,13±1,05	68,62±1,04	71,71±0,99
2	Sparta	99,74±0,8	101,19±0,83	120,76±0,85
3	Nena	63,07±0,85	64,55±0,86	69,86±0,92
4	Oyjamol	160,8±3,5	162,26±3,53	310±0,91
5	Ustoz-MMAn-60	82,94±1,78	84,37±1,77	92,43±1,1
6	Tomaris-MMAn-60	109,12±0,51	110,64±0,59	126,66±2,01

The weight of 1000 grains of local and foreign soybean varieties planted as a repeated crop in the conditions of Navoi region. The weight of 1,000 seeds is of great importance in increasing the yield, germination capacity, germination and seed fertility of soybean varieties created and being created by breeders. Fertilization of such seeds is good and allows for high yield. The fuller the seed, the more sufficient nutrient reserves are created for its sprout to be fully supplied with the necessary nutrients in the first stages of its development [4], [7].

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Grain size as a crop element has a significant effect on productivity. The weight of 1,000 grains also changes depending on the external environment and the agricultural technology used. Favorable temperature and nutritional regime allow the formation of large grains, on the contrary, hot and dry air, lack of moisture, weeds, pests and diseases reduce the index of weight of 1000 grains [5], [6], [1].

In 2020, the highest indicator of the weight of 1000 grains of local and foreign soybean varieties in Navoi region was determined in the Oyjamol variety of 184.02±1.95 g. The lowest indicator was observed in Selekta-201 (control) variety (respectively 162.34±0.55 g). The rest of the varieties showed higher values compared to the control option.

In 2021, the highest indicator compared to the control was recorded in the Sparta variety (respectively 176.26±2.07 g). It was found that the weight of 1000 grains in Nena variety is less than other varieties in the experiment.

In 2022, the highest index compared to the control variety in terms of weight of 1000 grains among foreign soybean varieties was found in the Sparta variety (215.65±3.39 g), and the lowest indicator was found in the Selekta-201 (control) variety (respectively 174.56±1.46 g) was observed (Table 4).

Table 4 **Indicators of the weight of 1000 grains of soybean varieties planted as a repeated crop in the conditions of Navoi region, (gr).**

T/r	Domestic and foreign soybean varieties	2020	2021	2022
1	Selekta-201(control)	162,34±0,55	157,24±0,85	174,56±1,46
2	Sparta	178,06±0,66	176,26±2,07	215,65±3,39
3	Nena	171,02±0,71	149,96±2,32	176,16±0,77
4	Oyjamol	184,02±1,95	175,66±1,44	197,31±1,42
5	Ustoz-MMAn-60	171,92±1,25	156,02±1	177,04±2,2
6	Tomaris-MMAn-60	163,58±1,11	158,6±1,69	190,91±0,74

Conclusion

In our experiments, when the 1000-grain weight indicators of domestic and foreign soybean varieties planted in Navoi region between 2020 and 2022 were studied, Sparta and Oyjamol soybean varieties in Navoi region have higher indicators compared to Selekta-201 (control) control variety and other genotypes. was found to be.

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