ASSESSMENT OF THE VALUE CHARACTERISTICS OF LOCAL "SOCHILMAS" AND "NAFIS" VARIETIES OF SOY

Juraev S. T.
Tashkent State Agrarian University, Doctor of Biological Sciences, Professor

Sobirova D. Z.
Master Student of Tashkent State Agrarian University

ABSTRACT

The article deals with the methods of evaluating the economic characteristics of local soybean varieties "Sochilmas" and "Nafis".

Keywords: shade, variety, farm signs, assessment.

SOYANING MAXALLIY "SOCHILMAS" VA "NAFIS" NAVLARINING QIMMATLI XO'JALIK BELGILARINI BAHOLASH

Jo'raev S. T.
Toshkent davlat agrar universiteti, Biologiya fanlari doktori, professor

Sobirova D. Z.
Toshkent davlat agrar universiteti magisitranti

ANNOTATSIYA

maqolada soyaning maxalliy "Sochilmas" va "Nafis" navlarining qimmatli xo'jalik belgilarini baholash usullari haqida gap borgan.

Kalit so'zlar: soya, nav, xo'jalik belgilari, baholash.

INTRODUCTION

It is known that recently the amount of humus in the soil is decreasing. Enzymes work very hard to increase productivity, cotton fields are given 700-800 kilograms of mineral fertilizer per hectare, and wheat fields are given 400-5000 kilograms, sometimes up to 800 kilograms. It is necessary to give less nitrogen fertilizers to the soil and achieve a high yield. For this, it is necessary to use the experience of growing soybeans on large areas. Because soybean accumulates 120-150 kilograms of ecologically clean nitrogen in the soil, improves soil structure and microflora. Soybean fields can increase yield by 35-40% on average when other agricultural crops are planted next year. The productivity of plants depends on its biological characteristics, adequate supply of nutrients and water during the growing season, soil fertility and agrotechnical measures. Types and varieties of plants differ in their hereditary characteristics, duration of vegetation, morphophysiological characteristics and durability. Currently, soybeans are cultivated on 14% of the cultivated land in the United States, and more than 100 varieties are planted. The United States produces 95 percent of the soybeans produced in the world market.

Types and varieties of plants differ in their hereditary characteristics, duration of vegetation, morphophysiological characteristics and durability. Decision No. PQ-2832 of the President of the Republic of Uzbekistan dated March 14, 2017 "On measures to increase planting of soybean crops and soybean production in the Republic in 2017-2021", this decision No. PQ-3144 dated July 24, 2017 in the decision on amendments and additions to the decision, the tasks of increasing soybean production in the republic, filling the domestic consumer market by increasing the volume of production of non-traditional local oil and oil products at oil enterprises, and establishing selection and seed production of local soybean varieties were strictly defined. Over the past decade, soybean production has grown at an average annual rate of 2.7 percent, and global soybean trade has increased by 5.1 percent. In 2019-2020, the gross harvest of soybeans in the world was about 342 million tons, and the world trade increased by about 152 million tons. According to the decision of the Cabinet of Ministers "On measures to grow soybeans and fully satisfy the population's needs for soybean oil" in 2017-2021, the area of soybean cultivation will be increased step by step, during this period, the main area will be 92,266 hectares, and the main area will be 40,557 hectares. it is planned to be planted as a repeated crop. In 2021, it is planned to plant 30,000 hectares as a main crop and 10,000 hectares as a repeat crop. The increase in the planting area, in turn, allows to obtain more products from the soybean plant, as well as to positively solve a number of problems in agriculture by effectively using the valuable economic characteristics of soybeans.

RESEARCH RESULTS

Experiments will be conducted in 2021-2023 at the "Dormon" experimental farm of the UzRFA Institute of Genetics and Experimental Biology of Plants, Kybrai District, Tashkent Region.

Research methods and objects.

Research is conducted in laboratory and field conditions. In conducting them, V.A. Dospekhov methods are used for statistical analysis of the results of phenological observations "Methods of conducting field experiments" developed by the experimental farm "Dormon" of the Institute of Genetics and Experimental Plant Biology of the RFA. Conducting field experiments, planting, crop care, harvest, calculation and analysis based on the generally accepted methods and recommendations of the Ministry of Agriculture, the State Commission for Testing New Varieties of Agricultural Crops of the Republic of Uzbekistan was carried out. In the experiments, phenological observation according to the method of the State Variety Testing Commission, biometric measurements (plant height, stem, number of side branches, leaf number and level) according to the method of the Agricultural Scientific Research Institute, productivity 'indicators were studied by selecting 10 plants from each plot in different cultivars and experimental options.

Total protein was determined using Lowry's and Amid black. Amount of carbohydrates A.I. Ermakov et al. total fat content was determined by Soxalet apparatus.

Experiments were carried out in 3x7 m lysimeter in the territory of Qibray district of Tashkent region during 2021-2022. The agrotechnical activities carried out in the experimental fields were carried out on the basis of methods widely used in this region and taking into account the biological characteristics of soybean varieties. When sowing seeds in 2021-2022, the width of the rows was 60 cm, the distance between the seeds was 8-9 cm, and the planting depth was 5-

7 cm. Sampling and studying the seasonal development of plants were carried out according to generally accepted methods

Morphological indicators of soybean plant. In our experiments, the morphological parameters of the soybean plant were studied mainly in the stages of tillering, flowering and podding. For this purpose, 10 plants of Nafis and Sochilmas soybean varieties were selected, their length was measured using a ruler in the stages of budding, flowering and pod formation, and the average was determined using the method of Dospekhov 1985. From the morphological characters, the number of leaves and joints on the main stem was determined by counting 10 plants in each phase.

The following valuable economic signs were studied. Plant stem height, number of leaves per plant and number of joints per stem, plant yield, number of pods per plant, total grain weight per plant, 1000 grain weight weight was determined by generally accepted methods. The amount of oil in soybeans was analyzed by the Soxhlet method using the DW-SXT-02 DRAWELL Lab 500 ml Soxhlet extractor. The amount of protein in grain was determined according to the K'el'dal method.

Research object:

Below we present the morphobiological descriptions of soybean varieties taken as objects:

"NAFIS" variety of soy

Authors: Saitkanova R.U., Sadikova N.I., Ibragimov F.Yu., Sattarov M.A., Mirzaeva I. Created by a single selection method at the Scientific Research Institute of Rice Breeding of Uzbekistan. Botanical type - Glycine hispida L. Growing period 115-120 days. The height of the plant is 145-150 cm. The location of the lower pod is 14-16 cm, the number of branches is 2-4, the number of pods in one plant is 120-130, the number of grains in one pod is 2-4. 1000 seeds weigh 165-175 g. Protein content of grain is 40-41%, oil content of grain is 25-27%. It is resistant to lodging, shedding, diseases and is designed for harvesting with the help of mechanization. Under favorable conditions, 30-32 s/ha of grain yield and 250-300 s/ha of green mass can be obtained from the variety.

"Sochilmas" variety of soy

Authors: Abzalov M.F., Baratova N.R and others. Economic characteristics: growth period - 90-100 days, plant height 60-80 cm, number of joints - 18-20 pieces, number of pods per plant - 90-130.1 The number of pods in the grain is 5-6, the number of grains in the pod is 2-3, the weight of 1000 grains is 138 g, the protein content is 40-45%, the fat content is 22-23%, the yield is 25-30 s. to . Morphological characteristics: the stem is dark green, the hairiness of the stem is medium, the leaf is lanceolate, 3-lobed, the flower is white, the grain is yellow, the pith in the seed is brown. At the end of the growing season, the leaves turn yellow and fall. Agrotechnics. The most favorable period for planting in the Republic is when the soil temperature is 14-16 degrees. In the southern districts, this period is from March 20 to April 1, and in the northern districts, from April 4 to 10. The soil is irrigated 3-5 times depending on the climatic conditions and the characteristics of the variety.

Summary of Chapter II:

Our ongoing scientific research was conducted in the conditions of the experimental site, i.e., lysimeters, located in the Qibray district of the Tashkent region, and in the laboratory. The object of our scientific research was the selection of quality soybean varieties, and scientific

research was conducted on Nafis and Sochilmas varieties from local soybean varieties. In our research, generally accepted methods were used in order to analyze the obtained results of some physiological and valuable economic characteristics of soybean varieties.

Analysis of the results of studying the morphological characteristics of soybean varieties planted as a repeated crop:

Morphological signs are important signs for soybean plants. Therefore, during the budding, flowering and podding periods of Nafis, Sochilmas soybean varieties studied in our research, the height of the plant stem, the number of joints, the plant height, the number of leaves and pods in one plant are among the morphological characters. number was studied. For the experiment, 10 plants each in 2 replications of each variety were studied and the average was calculated. According to the analysis of the results obtained in the budding stage of the local Nafis and Sochilmas varieties of soybeans in the control variant, a high indicator was obtained. It is known that the root is one of the main organs of the plant and performs the following physiological and mechanical functions in the life of plants; it receives water and mineral substances dissolved in it from the soil, attaches the plant to the soil, as a result of which a unique stability is realized. It makes the plant interact with the microorganisms in the soil, collects reserve nutrients, serves vegetative reproduction. [Nukus 2016 Plants Phys.]

The root of the soybean plant has a strongly developed axial root system that penetrates the soil to a depth of two meters, but the main part of the root is located in the 0-50 cm layer. Soybean roots are highly branched and form a branching root system that makes up 52-64 percent of the soybean root and grows in the plant until seed formation. According to experts, the surface area of the soybean root system, excluding root hairs, is on average 350.95-406.0 cm² per plant, and it is 16.68-22.7 cm² at the branching stage, 84 at the flowering stage. ,32-119.73 cm² is equal to 124.15-146.7cm² during podding and 281.21-366.94cm² during ripening [Atabaeva 2004 Plant Science].

The main stem length of our soybean plant was higher (14.01±0.16 cm) compared to the control variety Genetic-1 (14.01±0.16 cm). done. In 2021 (12.96±0.5 cm) and 2022 (14.96±0.2 cm) in Nafis variety. In terms of the main root length indicator, according to the results of our experience during the 2021 weeding period, the highest indicator is in the Sochilmas variety (6.11±0.28 cm), and in the Nafis variety (4.11±0, 25 cm). In 2022, the indicators are in the Sochilmas variety (7.4±0.25 cm) and the Nafis variety (5.78±0.22 cm) (see table 3.1).

3.1-table In 2021-2022, the length of the main stem and the length of the main root of local soybean varieties at the weeding stage in the conditions of the Tashkent region (cm)

№	Local soybean varieties	Main stem length		Main root length	
		2021	2022	2021	2022
1	Nafis	12,96±0,5	14,96±0,2	4,11±0,18	5,78±0,22
2	Sochilmas	14,01±0,16	15,96±0,3	6,11±0,14	7,4±0,25
3	Genetic -1$_{Nazorat}$	13,08±0,64	14,34±0,41	5,81±0,73	6,4±0,72

The stem of the soybean plant ripens early, depending on the conditions of cultivation, and varies dramatically depending on the lateness. It is usually an upright grower, and when the

growth conditions change, that is, when the feeding area is reduced, when the light regime is disturbed by planting between gardens, the tendency of the stem to lie down increases [Atabaeva2004].

Characteristics such as the height, thickness, number of joints of the soybean stem and the degree of branching change rapidly depending on the soil and climatic conditions in which the plant is grown and especially how it is grown [H.S. Yoldoshev 2003].

A bud is considered a flower bud of this plant, and it is written as gulag. A bud differs from a simple leaf bud of plants by its size and blunt tip. All parts of the flower are formed in the bud. The bud (flower bud) formed from the axil of a leaf grows and develops and the period that has passed until it is written is called the budding period. This period is the main characteristic of the plant species. The popular word "shona" (in relation to some plants) actually means bud, so the period of budding is also called the period of budding.

The budding stage begins almost at the same time as branching. In the budding stage of shade plants, leaf formation is the most and is considered to be the critical period of the plant's water demand. 70-75 percent of ChDNS ensures better flowering of the plant and pollination of more flowers. Pollination of soybean flowers takes place inside the bud [Atabaeva 2004].

Soybean cultivars did not differ significantly in the number of leaves per plant in the budding phase of soybean cultivars. The number of leaves per plant is higher than that of the control variety Sochilmas variety in 2021 (5.36±0.15 pieces) in 2022 (6.50±0.29 pieces), Nafis variety indicators It was found that it was slightly lower in 2021 (4.00±0.19 units) and in 2022 (5.25±0.29 units). Thus, in 2022 compared to 2021, the Sochilmas variety increased by 1.14 percent, and the Nafis variety increased by 1.25 percent (see table 3.2).

3.2-table In 2021-2022, the number of leaves of one plant in the budding phase of local soybean varieties in the conditions of Tashkent region

№	Soy varieties	Number of leaves, pcs					
		2021			2022		
		$\bar{x}\pm S_{\bar{x}}$	δ	V,%	$\pm S_{\bar{x}}$	δ	V,%
1	Nafis	4,00±0,19	0,53	10,69	5,25±0,25	0,30	11,76
2	Sochilmas	5,36±0,15	0,40	9,41	6,50±0,29	0,58	12,83
3	Genetic-1control	5,06±0,15	0,60	9,41	5,50±0,29	0,78	12,83

In order to measure the height of the stem of the plant during the flowering period, 10 plants from each soybean variety were selected and measured using a ruler and the average was calculated. The results show that in 2021, compared to the control variety, the higher index was in the Sochilmas variety (40.27±1.13 cm), and in the Nafis variety (27.43±1.09 cm) in 2022 We can see that a high index (45.00±1.55 cm) was determined in Nafis variety (29.00±1.31 cm). In this case, Sochilmas variety has increased by 2022 compared to 2021, and Nafis has increased (see Table 3.3).

3.3-table In 2021-2022, plant stem height in the flowering phase of local soybean varieties in the conditions of Tashkent region, cm

№	Soy varieties	Plant stem height, cm.					
		2021			2022		
		$\bar{x}\pm S_{\bar{x}}$	δ	V,%	$\bar{x}\pm S_{\bar{x}}$	δ	V,%
1	Nafis	27,43±1,09	2,88	10,49	29,00±1,31	2,63	7,46
2	Sochilmas	40,27±1,13	3,74	9,07	45,00±1,55	4,66	10,85
3	Genetic-1$_{control}$	33,78±0,92	2,77	8,21	39,14±1,60	4,22	12,01

The number of joints, which is one of the important morphological characteristics of soybean, was calculated at the stages of flowering and podding. In this case, the results obtained in 2021-2022 show that compared to the control variety, the Sochilmas variety had a higher index, in which in 2021 (12.91±0.37 units) in 2022 (14.00±0 ,50 pieces) In the elegant variety, the indicators are lower than in the unscattered variety, but higher than the control variety. In 2021, it was (11.43±0.37 units) and in 2022 (12.00±0.41 units). The number of joints did not differ much in 2022 compared to 2021.

CONCLUSION

Soybean plant, which is the object of the study, is highly valued for enriching the soil with biological nitrogen. The agrotechnical importance of soybeans is that as a result of planting 70-100 kg of soybeans on 1 hectare in a year, it allows efficient use of the agro-ecosystem, effective use of soil and climate reserves in the system of crop rotation in agriculture. According to the analysis of the results obtained during the budding period of soybean varieties, the average height of the plant stem was recorded in the local variety Nafis (12.88±0.54) and Sochilmas (16.50±0.54). .

Creation of soybean varieties with high oil content and good quality is one of the current directions of soybean selection. Because the amount of protein and fat in soybeans has an inverse correlation (correlation coefficient (r=-0.25 to r=-0.93). Seeds with high fat content should be sought from forms with low protein content. A high moisture index (from r=0.52 to r=0.71) was determined in soybean with large yellow grains.

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