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GROWTH, DEVELOPMENT AND YIELD OF SOYA VARIETIES IN MEDIUM SALTY SOILS

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ABSTRACT

Harmful salts in the soil, which are soluble in water, adversely affect the growth and development of the plant. As a result, there is a sharp decline in productivity. With this in mind, the authors are conducting research on agro-technologies for the cultivation of various soybeans as a secondary crop in areas free of wheat in moderately saline soils.

KEYWORDS: *Soya, Saline Soil, Legumes, Nena, Orzu, Elegant, Yield, Yield, Temperature, Repeat Crop, Planting Rate, Seedling Thickness*

INTRODUCTION

It is known that the productivity of a plant depends on its biological properties, planting norms, planting systems, soil reclamation and agrotechnical measures. Since plant species and varieties differ in mutual hereditary characteristics, duration of vegetation, morpho-physiological properties and durability, optimal agrotechnical is used in order to effectively use their biological potential. In Uzbekistan, 20.7% of agricultural land is irrigated. Today, Uzbekistan has a total of 4.3 million hectares of irrigated land, and as of October 1, 2020, 44.7% of these irrigated lands are at various levels, including 31.0% weak, 11.9% medium and 1.9% strong. highly saline. Growing high yields of crops in such soil conditions is one of the constant problems.

THE MAIN PART

Taking into account the above, field experiments were conducted in the conditions of moderately saline soils of the Fergana region. The Fergana region is located in the northern and western part of the Fergana Valley and covers an area of 7.1 thousand km2. The region is divided into Kokand and Fergana agro-climatic districts. 70% of the total irrigated and cultivated area of the region is meadow and moderately saline grey soils, 20.8% grey soils, 5.2% gravel 2.7% meadow-bald and 1.3% meadow-swamp soils. The soil of the experimental field is meadow-loam, moderately saline, with heavy mechanical content. Groundwater is located at a depth of 1.6-1.8 m. The amount of humus (humus) is around 2%, low in mobile nitrate nitrogen, moderate in moving phosphorus and satisfactory in potassium. The experimental area was irrigated on July

12-13 after the 2020 wheat harvest, ploughed on July 17-18 using a 2-tier plough to a depth of 27-28 cm, and the margins and ridges formed during ploughing were levelled using a long base leveller. Before ploughing, 60 kg of phosphorus and 30 kg of potassium fertilizers were applied per hectare. In the experiment, the varieties of shade "Orzu", "Nafis" and "Nena" were studied. The seeds were treated with nitrogen before sowing. Based on the purpose of this research, that is, to study the impact of planting norms on soybean yield and quality, the experiment was conducted in 10 variants and 3 returns (Table 1). The difference between the options according to the planting norms was 10 kg/ha.

TABLE 1. EXPERIMENTAL SYSTEM

№ Yes	Shade varieties	Planting system	Theoretical seedling thickness, thousand / ha
	Orzu	60x5x1	300-350
		60x40-6x1	300-350
		60x40-5x1	400-450
		60x40-4x1	500-550
	Nafis	60x40-6x1	300-350
		60x40-5x1	400-450
		60x40-4x1	500-550
	Nena	60x40-6x1	300-350
		60x40-5x1	400-450
		60x40-4x1	450-500

METHODOLOGY OF THE EXPERIMENT

By the methodology of the experiment, the experimental field was divided into delyankas for options using measuring instruments, leaving protective corridors on all four sides. Each option, ie delyanka is 2.4 m wide, and 50 m long, the area occupied by all options is 1200 sq.m. The total area of the experimental plot with 3 recirculations is 3600 sq.m. formed. Planting systems 60x40-6x1, 60x40-5x1 and 60x40-4x1 were used for planting experimental varieties. On July 20, 2020, the seeds of Orzu, Nafis and Nena varieties of soybean were sown in the experimental system with 8 rows of pneumatic seeders.60 cm so that the average 45 cm planted to a depth. Phenological observations were made in all variants of the experimental field. In this case, the emergence of shade, the formation of the first three leaves, budding, flowering, the formation and ripening of pods were observed. The experimental area was irrigated 4 times during the growing season, i.e. July 29, August 5, August 13, September 4, and September 23, with an irrigation rate of 700-800 m^3 per hectare. To ensure air circulation in the soil, and improve heat and water permeability during the growing season, on August 10, August 18 and September 28, the plant was treated 3 times between rows, fed 2 times, and applied herbicide “Super Zelek” once.

All agro-technical measures were carried out in accordance with the requirements for field experiments. Phenological observations of the growth and development of soybeans, ie the determination of the main parameters, were carried out mainly in 3 periods: in the phases of flowering, flowering and ripening. Maturation of soybeans was observed in mid-October. The soybean crop was carefully harvested by hand on November 1, when 85-90% of the leaves were

shed. According to the options and returns, the harvested soybean crop was separately ground in a combine harvester and placed in bags with options and return numbers. The obtained data were processed mathematically and the average yield was determined for each variant.

Seed yields of soybean varieties planted as a repeat crop in the experiment are given in Table 3.

According to the experimental results, the highest yield of soybean varieties increases with increasing seedling thickness. The yield of Orzu was 20.4 s / ha, Nafis 21.6 s / ha and Nena 22.0 s / ha, respectively.

TABLE 3. YIELD OF DIFFERENT SHADE VARIETIES (S / HA) IN THE CONDITIONS OF MODERATELY SALINE SOILS OF THE FERGANA REGION

№ Yes	Shade varieties	Planting system	Productivity
	Orzu	60x5x1	18.7
		60x40-6x1	19.0
		60x40-5x1	19.6
		60x40-4x1	20.4
	Nafis	60x40-6x1	20.3
		60x40-5x1	21.6
		60x40-4x1	21.1
	Nena	60x40-6x1	21.5
		60x40-5x1	22.0
		60x40-4x1	20.8

CONCLUSION

When? An increase in the number of salts in the soil is observed when the amount of water evaporated from the surface is greater than the amount of water supplied to the soil. A large number of plants in the field reduces the amount of water evaporating from the soil surface. When growing soybeans in saline soils, if it is intended to adequately cover the soil surface with vegetation, it is advisable to sow in a double method.

As the number of harmful salts in the soil increases, the shade-forming elements are shed. In our scientific research, the seed yield of different soybean varieties can also be explained by the high content of water-soluble harmful salts in the soil is relatively low variants. The use of the double sowing method in the re-cultivation of soybeans under moderately saline soils prevents an increase in the number of salts in the soil. It was found that 60 cm between rows, 20 cm between two rows of plants, and 5 cm between one plant and another plant give good results.

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