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Research Article

THE ROLE OF SOY IN SOIL PRODUCTIVITY AND EFFICIENT USE OF LANDS

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ABSTRACT

The article describes the conditions of cultivation of soy on saline soils Bukhara, its positive impact on productivity of the subsequent crops, soil fertility, as well as efficient use of lands.

KEYWORDS

Land, soil salinity, soil fertility, specie, breed, cotton, crop yield.

INTRODUCTION

The soils of the Bukhara oasis are mainly meadow alluvial and formed on the basis of the sediments of the Zarafshan river flowing through the water for thousands of years. The climate is a sharply changing continental climate. The history of farming goes back several thousand years. Irrigation farming is mainly developed in Bukhara. Since the soils of Bukhara are of different degrees of salinity, agrotechnical activities of salt washing are carried out in these lands in the autumn and winter season, and this event also leads to a decrease in soil fertility. A number of scientists F. Jumaev, N. Safarova 2018y, F. Jumaev, Yu. Hikmatova 2019, F. Jumaev, Z. Ataeva 2021. (1-3) have scientifically studied how to increase soil fertility by planting leguminous crops.

Irrigated agriculture is developed in the Bukhara region, and the land areas where all agricultural crops are grown are made up of soils with varying degrees of salinity. Therefore, effective use of land, selection of exportable crops suitable for these soil conditions, and increasing soil fertility is one of the urgent tasks of today.

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Effective use of land, obtaining high yields from planted crops, ensuring food security, covering costs incurred from designated land and achieving profitability are important tasks for existing farms.

Genetic-1 type	Orzu type	Bukhara-6 type

Picture-1. Soy and cotton varieties

Soybean plant with leguminous, oily, protein-rich is of great importance in agriculture, effective use of land with low quality and productivity, ensuring national economy and food security, increasing land productivity and achieving economic profitability.

Method of the experiment: The experiments were conducted at the training-field experimental farm of the Faculty of Agronomy and Biotechnology of the Bukhara State University and at the "Arbob Botir" farm in the Bukhara district. done. Genetic-1, Orzu and cotton Bukhara-6 varieties of soybeans were used in the experiment (picture-1).

Experimental results: Soy belongs to the genus Glycine L., which is divided into two subspecies. The first is the subgenus Glycine Wild, which includes 9 species, and the second is Soja (Moench) F.Y.NERM. 2 species belong to the subfamily, according to R. G. Palmer (4), there are 11 species in total. When the polyploid level of soybean was studied (haploid n-20), it was found that there are mainly diploid (2n=40) and two tetraploid (2n=80) species (5).

Soja (Moench) F.Y.NERM. There are 2 species in the subfamily, the diploid (2n-40) G. soja Sieb and the cultured G. max L. Meer. According to V. B. Enken (6), the cultured soybean type G. max L. Meer is divided into 6, i.e., semi-cultured, Indian, Chinese, Korean, Manchurian and Slavic subtypes.

In the world, N.I. Vavilov (7) identified two centers of origin for the soybean plant, i.e., the center of Australia, although the center of soybean is more ancient, Southeast Asia. Although central Australia is more ancient, soybeans have been cultivated by humans in Southeast Asia. The United States is the largest soybean-growing region in the world. These

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cultivated areas are 35.6 million hectares in the USA, 33.3 million hectares in Brazil, 11 million hectares in China, and 3 million hectares in Japan. It is also cultivated in many countries such as Russia, India, Korea, Vietnam, Indonesia, European countries, North Africa, Australia (8).

Soybean production in the world is 320.5 mln. tons, of which Brazil has 106.6 mln. tons, the USA currently has 106.1 million. tons, Argentina 58.5 mln. produces tons. Brazil is the leading country in the sale of soybean grain and meal, or 57.6 mln. tons of soybeans and 15.6 million tons of wheat flour. The main purchasing country is China (8).

The soybean plant is heat demanding. A temperature of 12-14°C is recommended for seed germination and 18-20° for grass formation. The temperature of 1600-1700°C is necessary for the earliest varieties of soybean, 200-2200° for middle-ripening varieties, and 2800-3000°C for late-ripening varieties. 4-5 kg of nitrogen, 2.3-2.5 kg of phosphorus and 3.5-3.7 kg of potassium are used to obtain one centner of soybeans. Soybean grows and yields well in all saline soils in Uzbekistan.

"Orzu", "Nafis", "Genetic-1" in the early part of the republic, "Dostlik", "To'maris", "Oyjamol", "Uzbekskaya-2", "Parvoz" and "Baraka", "Uzbekskaya-6" " late ripening varieties were created. Early varieties ripen in 75-90 days, medium-ripening varieties in 100-120 days, and late-ripening varieties in 135-140 days. The productivity of soybeans is very dependent on the varieties. (9).

To increase livestock productivity, when animals are fed soybean meal, their daily weight gain doubles. In order to reach 100 kg of live weight, the feeding period is shortened by 10-15 days, and the quality of the product increases. For fodder, soybean meal, flour, and greens are used. Kunjara contains 38.7% protein and 5.5% oil. Soybean meal and meal replaces milk in calf rations. 1t. 750-800 kg of meal can be obtained from soybean meal when it contains 40% protein and 1.4% oil. It is observed when it is harvested during flowering and grain maturity, which is valuable for livestock. 145-301 grams of protein per serving of soybean greens.

Soybean is a valuable plant that is of great importance in the food industry, medicine, and especially in agriculture to improve soil fertility. Soybean seeds leave behind 85-95 kg of ecologically pure biological nitrogen on one hectare of land when they are not treated with nitrogen bacteria. This ensures rapid growth and high yield of the next planted agricultural plants.

When obtaining a high yield from agricultural crops, soil fertility undergoes important biological processes, and with the participation of microorganisms, complex organic substances turn into active substances absorbed by plants. The amount of microorganisms in the soil, their activity depends on the mechanical composition of the soil, its density, the amount of humus, the level of humidity and other factors.

According to the decision of the President of the Republic of Uzbekistan dated December 29, 2015 No. PQ-2460, during the period 2016-2020, 10 thousand hectares of cotton yielding 12-15 centners of cotton and 5 thousand hectares of grain fields yielding 15-20 centners of cotton in the period 2016-2020, a total of 15 thousand hectares of low productivity areas have been reduced, and in order to effectively use these areas and increase their productivity, to improve the soil structure, it has been decided to establish vegetable, oil leguminous crops and intensive vineyards. Based on this decision, the selection and planting of leguminous soybean varieties suitable for the conditions of Bukhara in the fields of farms in the

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Bukhara region, and its effect on the effective use of land, soil fertility and the yield of subsequent crops were studied.

In the educational and practical field of the Bukhara State University, a comparative analysis was made of the grain yield of the soybean variety "Genetic-1" planted in April and as a repeat crop after the autumn spiked grain in July, and the yield of the cotton variety Bukhara-6 planted the following year in the fields planted and not planted with soybeans. In addition, the productivity of soybean variety "Orzu" will be analyzed at "Arbob Batir" farm in Bukhara district. The data obtained on the basis of experiments show that when the "Genetic-1" variety of soybeans was planted on April 12, it fully ripened by August 20, and on average, in 2012-2015, 32.1 centners of grain was obtained per hectare, and when it was planted after repeated sowing, a harvest of 24.5 centners was achieved. After soybeans, an average yield of 36.8 t/ha was obtained from the area planted with Bukhoro-6 variety, while an average yield of 31.7 t/ha was obtained from the area without soybeans. Also, on average, 29.5 t/ha of soybeans were planted on 1.5 hectares of "Arbob Botir" farm. In the following year, 35.6 t/ha of raw cotton was obtained from cotton in this area, and the yield in the contour next to soybeans was 31.2 quintals.

CONCLUSION

As a result of scientific research, it is possible to conclude based on the data obtained from the experimental field of Bukh.DU and from the farm fields and recommend to farmers that in the conditions of Bukhara region, for effective and productive use of land, to increase soil fertility and to obtain a high yield from cotton, the main and early varieties of leguminous soybean should be used. planting as a repeated crop is of great importance, which provides an average additional yield of 4-6 centners per hectare.

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