
Study of Physiological Signs of Local Soybean Varieties in Tashkent Region

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Abstract: In this article, field research explains in detail the selection of soybean varieties adapted to the soil climate of the Zangiata district of the Tashkent region, the study of their physiological and morphological characteristics in relation to valuable economic traits.

Keywords: Plant productivity, soybean, main, old crop, agriculture, nutrients.

INTRODUCTION

It is known that the amount of humus in the soil has recently been decreasing. Farmers are working hard to increase productivity: cotton fields receive 700-800 kilograms per hectare, wheat fields - 400-500 kilograms, and sometimes up to 800 kilograms of mineral fertilizers.

It is necessary to apply less nitrogen fertilizers to the soil and achieve higher yields. It requires intensive cultivation in the shade. Since soybean accumulates 120-150 kg of environmentally friendly nitrogen in the soil, it improves soil structure and micro flora. Soybean yields will increase by an average of 35-40% next year when other crops are sown.

The productivity of plants depends on their biological properties, sufficient supply of nutrients and water during the growing season, soil fertility and agro technical measures.

Species and varieties of plants differ in their genetic characteristics, duration of vegetation, morph physiological characteristics and resistance.

On the irrigated lands of the Tashkent region, the most widely cultivated varieties of the country were selected, and four varieties of local soybean varieties were planted as the main crop.

ANALYSIS AND METHODOLOGY OF THE LITERATURE

The shadow is a very old kind of culture. The study of the variety of shapes and types of shadows led scientists to the idea that they are mainly formed in 3 centers. These are: Southeast Asia, Australia and East Africa. Most scientists believe that the shadow comes from Southeast Asia. In the countries of the East, soybean has long been cultivated as a food crop (Kuzin, 1976; Yermatova, 1989, 2004)

Our study was conducted in 2021 in the Zangiata district of the Tashkent region. As an object of study, local varieties Genetik-1, Sochilmas, Orzu, Baraka were planted as the main crop. The biological characteristics of varieties, irrigation and fertilizing regimes also play an important role in the formation of legumes. According to Kh. Atabayeva's research, 10-15 days after the start of flowering, pods begin to form in the lower layers of the soybean plant, and flowering and pod formation occur alternately from the lower part of the stem to the upper part. The resulting whole pods gradually turn yellow and ripen. According to Korsakov, Bulakh (1978) and Leshchenko (1987), the number of soybean leguminous plants,

apparently, does not depend on the external environment. Genetic analysis shows that the role of the genotype in the phenotypic manifestation of this trait is 45%, which also varies depending on the genotypic status of the variety. An increase in the feeding area leads to an increase in the number of legumes in the plant. Delayed seeding or re-seeding will reduce the number of legumes on the plant for several days.

In our observations, the morphological characteristics of plant height, the number of leaves per plant, and the number of segments were studied according to the morphological characteristics of the phases of shading and bean formation of local shade-tolerant varieties. For the experiment, 10 plants of each variety were studied and averaged.

RESULTS

In our study, in the shading phase (05/29/2021), Genetik-1 was distinguished by high plant height, the height of the main stem was 18.3 cm. Of the studied varieties, Sochilmas and Baraka had average marks (17.2 cm and 15.4 cm, respectively).

Indicators of morphological features of the shading phase of local shading varieties;

№	Varieties	plant height (cm)	God's quantity (pcs.)	Number of sheets (pcs.)
1	Sochilmas	17,2±1,2	6,9±0,1	7,1±0,5
2	Genetik-1	18,3±0,5	7,7±0,3	7,0±0,2
3	Orzu	13,5±0,1	5,8±0,9	6,4±0,1
4	Baraka	15,4±0,1	6,2±0,3	7,8±0,1

In the soybean phase in the Tashkent region, the lowest soybean yield was recorded in the Orzu variety, with a height of the main stem of 13.5 cm.

When studying the number of syllables from morphological features in the phase of complete shading of the shadow, the most rapidly maturing genetic type-1 was obtained (7.7). Orzu Navi also had the lowest score (5.8). Baraka and Sochilmas had similar scores (6.9 and 6.2, respectively).

We also studied the number of fleas on the studied shaded plants in the weeding phase. Leaves are an important plant organ and most of the photosynthesis takes place in the leaves. The larger the leaf and the larger its surface area, the faster the process of photosynthesis in the plant. As a result of the rapid process of photosynthesis, the plant grows faster and more generative organs develop. In our experiments, it was found that the number of fleas in the mowing phase in the Baraka variety was higher than in other varieties (7.8), and the relative number of leaves was observed in the Orzu variety (6.4).

The study of morphological indicators in local soybean varieties was continued in the phase of formation of legumes (July 23, 2021). In the studied local soybean varieties grown in the Tashkent region, a relatively high indicator of the height of the main stem was noted in the Baraka variety (118.5 cm), a relatively low one in the Genetik-1 variety (95.8 cm.) has been defined.

In our experiment, the total amount of water in the leaves of soybean plants was calculated from the growth point of the soybean plant during the formation of large pods of 3 leaves. According to the results, a relatively high level of total water content in the leaves was recorded in the Baraka variety with an estimate of 79.4%. This means that the higher the temperature, the less water evaporates and it can be grown even in dry regions. A relatively low level of total water in the leaves was noted in Genetik-1 with a mark of 71.9%. Orzu and

Sochilmas are average (74.8% and 76.3% respectively) and show water savings at high temperatures.

% of total moisture during the period of the gross harvest of legumes in local varieties of soybeans;

№	Varieties	χ	δ	V
1	Sochilmas	74,8	1,8	2,4
2	Orzu	76,3	4,2	5,5
3	Baraka	79,4	2,2	2,8
4	Genetik-1	71,9	8,6	12,0

In our study, the number of legumes per plant was studied according to valuable economic traits. According to the results, the largest number of legumes per plant was recorded in the Baraka variety, which amounted to 309.0.

Number of pods per plant in local soybean varieties;

№	Varieties	O.F	V%
1	Baraka	309,0	16,3
2	Sochilmas	114,5	14,2
3	Genetik-1	80,3	11,3
4	Orzu	176,0	18,3

In the dream variety, the average number of beans was 176.0, which is an average. The number of legumes in the hairless variety was 114.5. The smallest number of legumes was found in the fast-growing variety Genetik-1 with a score of 80.3.

CONCLUSION

Thus, in the conditions of the Tashkent region, the number of syllables of morphological features of local soybean varieties, when studied in the continuous weeding phase, showed a high rate of morphological features in the early stages of soybean development in the Genetik-1 variety. On the basis of morphological features, it can be concluded that the variety Genetik-1 is an early ripening variety and can be recommended as a secondary crop in the conditions of the Tashkent region.

This is due to the fact that morphological characters can develop rapidly in the early stages, and in later stages, mainly in the development of generative organs.

The physiological marker of water balance in leaves was high in genetic genus-1. We recommend the variety Baraka due to the strong development of morphological characters and the fact that the plant has a tall main stem and a large number of leaves. Among the valuable agricultural brands, the Baraka variety had the largest number of pods per plant.

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