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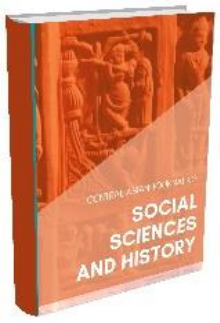

Influence of Morpho-Physiological Indicators of Local Soybean Varieties on Productivity

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Annotation:
This article studied the amount of chlorophyll in the leaf of one plant, which is one of the important physiological characteristics of local soybean varieties grown in the conditions of the Tashkent region, and the morphological features of bean formation. Among the local soybean varieties, the Genetik-1 variety was distinguished by a high content of chlorophyll in the leaves, and the Baraka variety was distinguished by high morphological characteristics of bean formation.

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In recent years, the acceleration of food and feed production requires an increase in soybean cultivation. Grain is an environmentally friendly quality raw material used in the food industry.% is obtained from soybeans. In the linoleum industry, the highest quality and most expensive car paints are obtained

It is known that about 95% of the dry matter of plants is organic matter resulting from photosynthesis. Most of the organic matter in plants is used to form reproductive organs. Usually, plant productivity depends primarily on the net productivity of photosynthesis, the duration of the assimilation period on the leaf surface, the amount of organic matter used for respiration, external and internal factors.

ANALYSIS AND METHODOLOGY OF THE LITERATURE

One of the conditions for increasing plant productivity is associated with an increase in the intensity of photosynthesis processes. Photosynthesis is an important biological process that underlies life on Earth. All the energy needed for life processes comes from the sun. It is known that soybean photosynthesis is an important process associated with the vital activity of soybeans, i.e. growth and

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development, this process is important both from a physiological and biochemical point of view, is integrally related to the function and is carried out with the participation of pigments in granules and stromal plates chloroplasts. Chlorophyll pigments combine with proteins and lipids in chloroplasts to form a complex compound. In the process of photosynthesis, chlorophyll is considered not only as a substance that absorbs solar energy, but also as a participant in other biochemical processes. The first products formed in the process of photosynthesis, i.e., organic compounds, first accumulate in chloroplasts. The rate of absorption and assimilation of carbon dioxide from the air is related to the rate of dark reactions of photosynthesis. The rate of assimilation depends on the provision of the cell with mineral elements, the amount of chlorophyll, the amount of water, the size and age of the leaf, the intensity of sunlight and other factors. All these external factors are of great importance in changing the quality and quantity of shadow activity.

It is closely related to external factors in the process of photosynthesis that occurs during the growth of the soybean plant. Of these, light, humidity, temperature, air concentration are important in the activity of photosynthesis. During the life of a plant, the rate of photosynthesis and assimilation processes increases to varying degrees. It is necessary to know that the rate of photosynthesis and the productivity of photosynthesis differ from each other. The rate of photosynthesis is the amount of carbon dioxide absorbed by a unit of leaf surface per unit of time.

The intensity of photosynthesis gradually increases during the growing season, its highest level falls on the period of budding, flowering, pod formation, then this figure decreases. The efficiency of photosynthesis in different plants is different, and early-ripening varieties begin to bear fruit earlier. Therefore, their yield will not be very high. Vegetation of late varieties is longer and accumulates more organic matter. Usually, the change in photosynthesis during the day is determined by the specific place where the plant grows, that is, geographical conditions.

RESULTS

In our studies carried out in the conditions of the Tashkent region, we studied the height of plants, the number of leaves on one plant and the number of segments according to morphological characteristics in the phases of budding, flowering and bean formation of local soybean varieties. For the experiment, 10 plants of each variety were studied and the average value was calculated:

Analysis of the results of studying the morphological characteristics of local soybean varieties

Analysis of the results of the study of morphological traits of local soybean varieties Among morphobiological traits, soybean growth type, stem and its subelements are of great importance. Morphological traits are important traits for soybean plants. In our studies on morphological characteristics in the phases of budding, flowering and bean formation of local soybean varieties, we studied the length of the plant, the number of leaves on one plant and the number of segments.

Indicators of morphological traits in the phase of maturation of local soybean varieties (29.05.2020)

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

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Among the soybean varieties planted in the Tashkent region in the flowering phase, the lowest indicator was recorded in the Orzu variety, the height of the main stem was 13.5 cm.

The number of leaves on the studied soybean plants in the tillering phase was also studied. Leaves are an important plant organ and most of the photosynthesis takes place in the leaves. The more leaves and the larger the surface, the faster the process of photosynthesis in the plant. As a result of the acceleration of the process of photosynthesis, the plant grows faster and the generative organs develop more strongly.

Indicators of morphological characteristics of the stage of bean formation of local soybean varieties

№	Varieties	plant height (cm)	Number of syllables (a piece)	Number of sheets (pcs.)
1	Sochilmas	112,3	20,0	17,1
2	Genetik-1	95,8	17,6	14,9
3	Orzu	110,5	19,3	17,8
4	Baraka	118,5	22,4	20,6

According to the morphological trait of the number of segments of the studied soybean varieties in the phase of bean formation, a relatively high indicator was noted in the Baraka variety, and the indicator of the trait was 22.4. A relatively low indicator was recorded in the determinant variety Genetik-1 and the indicator of the trait was 17.6. In terms of the number of leaves on the main stem, the variety Baraka dominated, the indicator of the indicator was 20.6, while the least number of leaves was recorded in the determinant variety Genetik-1, the indicator of the indicator was 14.9.

Based on the morphological features studied in the course of our research, we can conclude that the Genetik-1 variety is a fast-growing variety and can be recommended as a re-crop in the conditions of the Tashkent region. The reason is that in the initial phases, morphological features develop rapidly, and in later phases, the development of predominantly generative organs may accelerate.

We recommend the Baraka variety due to the strong development of morphological characteristics and the fact that the main stem of the plant is tall and the number of leaves is large, as a result of good photosynthesis, a high yield can be obtained, and the stems and leaves can be used as livestock feed.

The activity of the photosynthesis process primarily depends on the amount of chlorophyll in the leaf. The production of more than usual chlorophyll in plants allows for an increase in the rate of photosynthesis. This can be especially observed at a time when the temperature is not too high, that is, in the morning and evening. The photochemical activity of chlorophyll is determined by the assimilation number. This is equal to the amount of carbon dioxide absorbed by a unit of chlorophyll per unit of time. The main part of solar radiation is absorbed by the leaves of the upper layer of crops. The leaves of this layer have a high content of chlorophyll. Therefore, the amount of chlorophyll is an important and main factor in the activity of photosynthesis.

With this in mind, in our experiments we studied the amount of chlorophyll, which is one of the important physiological traits.

According to the results, the highest level of chlorophyll "a" was noted in the Tezpishar Genetik-1 variety and amounted to 3.16 mg/g, and the lowest level was noted in the Baraka variety and amounted

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to 2.39 mg/g. High levels of chlorophyll "b" in the leaves was also noted in the variety Genetika-1, and the sign index was 1.40 mg/g. The lowest level of chlorophyll “b” in the leaves was noted in the Orzu variety and amounted to 0.96 mg / g. The rate of transpiration in the leaves of soybean plants. Transpiration is one of the most important physiological processes. It is important when studying the water exchange of plants growing in the regions. It is believed that the main part of the water received by plants evaporates due to transpiration. transpiration rate. In drought conditions, there can be a lot of water in the plant body. It will cause an imbalance and an increase in water deficiency. Transpiration is not only the evaporation of water by a leaf, but with its help, water and water are adsorbed and dissolved in it, the movement of substances throughout the plant is also ensured.

Transpiration rate during large sowing in local soybean varieties, mg/g

№	Varieties	χ	δ	V
1	Sochilmas	365,2	59,8	16,4
2	Orzu	279,1	26,0	9,3
3	Baraka	360,3	82,7	22,9
4	Genetik-1	411,9	95,4	23,2

CONCLUSION

Based on the results obtained, it can be said that a high level of chlorophylls "a" and "b" in the legume phase indicates a rapid photosynthesis in the plant. As a result of the acceleration of photosynthesis in early ripening varieties, more organic substances are synthesized in the plant, which ensures the development of generative organs and their better maturation. Based on the results obtained, we recommend using it as a re-crop due to the fact that, according to morphological and physiological characteristics, the Genetik-1 variety allows harvesting twice a year in the conditions of the Tashkent region. We recommend the Baraka variety due to the strong development of morphological characteristics and the fact that the main stem of the plant is tall and the number of leaves is large, as a result of good photosynthesis, a high yield can be obtained, and the stems and leaves can be used as livestock feed. Transpiration is not only the evaporation of water by a leaf, but with its help, water and water are adsorbed and dissolved in it, the movement of substances throughout the plant is also ensured.

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