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EFFECT OF SOWING DATES OF CORN AND BEANS ON CROP YIELD

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Abstract: In the process of globalization of the world, there is a reduction in land and water resources and an increasing shortage of food. This leads to an increase in the population's demand for agricultural products from year to year. We conducted field experiments to develop and study the optimal planting dates of corn and beans as a repeat crop. The experiment emphasizes the fact that planting in June as a repeat crop to obtain high-quality yields of corn and beans is considered optimal.

Keywords: corn, beans, planting dates, yield, root crop, rootstock, residues, nutrients, legumes, soot.

In the process of globalization, land and water resources are decreasing and food shortages are increasing all over the world. This leads to an annual increase in the population's demand for agricultural products. Today, in agriculture, it is necessary to select and plant crops so that they effectively serve in all areas of agriculture and the national economy.

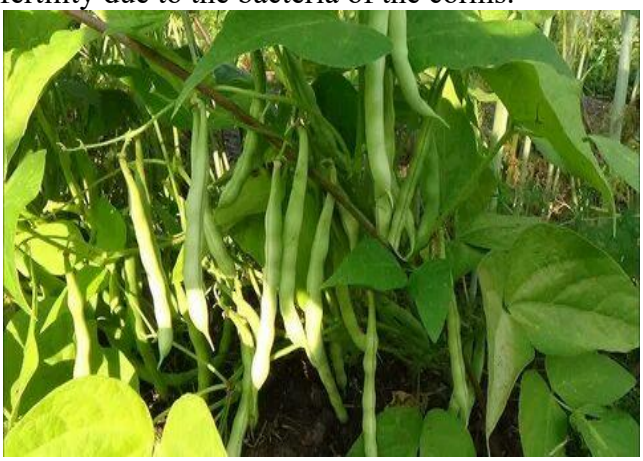
Particular attention in the world is paid to the development and systematic improvement of agricultural technology for growing field crops, taking into account biological characteristics, soil and climatic conditions, meeting the needs of the population for food products, industry for raw materials and livestock for food products.

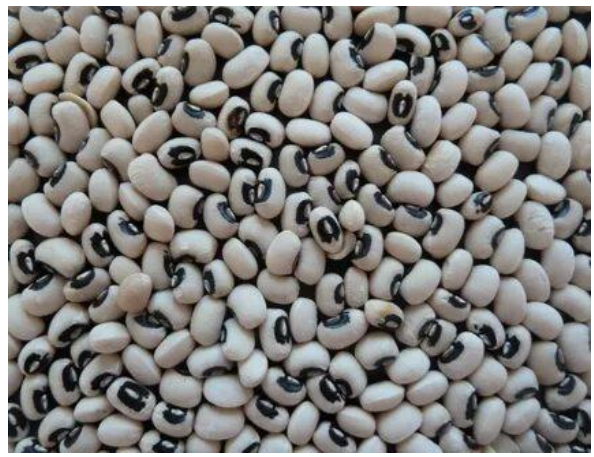
Current issues include the production of environmentally friendly, abundant and high-quality products from agricultural crops, growing crops that preserve the fertility of the soil of repeated crops on sites cleared of winter grain crops, conducting research to obtain additional yields of grain crops.

Satisfying the population's demand for meat and dairy products, corn is distinguished by its nutritional value in livestock farming. In order to regularly provide livestock with feed, crop production worldwide totals 80 million hectares, including more than 19.3 million hectares in the United States, 17.4 million hectares in Brazil, 14.8 million hectares in India, 12.3 million hectares in China, 10 million hectares

in Mexico, 3 million hectares in Australia, and 3.7 million hectares in Pakistan. In world practice, almost full repeat crops are sown on all irrigated lands after winter cereal crops.

It is legumes, including beans, that have important agrotechnical significance for overcoming the full-scale work caused by long-term sowing of the same crops on our soils. By introducing legumes and corn crops into the crop rotation system, a short crop rotation system of cotton + winter wheat + beans + corn is achieved. Legumes grown during one growing season provide a significant improvement in soil fertility due to the bacteria of the corms.





Then, by creating favorable conditions in the soil, especially by maintaining soil moisture at 70-75% relative to the maximum field moisture, it will be possible to maintain the optimal number of seedlings per hectare, and biological nitrogen without nitrates will accumulate on depleted soils, which plants absorb 100%.

Naturally, this biological nitrogen is also directly used by corn, and the yield increases. Taking this into account, we conducted field experiments during 2022-2023. The field experiment was carried out in 4 replicates. Observations, calculations, determinations, agrochemical analysis of soil and plants during the studies "Methodology of agrochemical. Based on such guidelines, agrophysical, microbiological studies were carried out in irrigated cotton areas "(1963)," Methodology of state variety testing of agricultural crops "(1964).

According to the results of the research, the Uzbekistan-3300 and Yulduz corn varieties, as well as the rhubarb and Marzhon bean varieties, were grown at two different planting dates. Corn is considered to be a crop that leaves a large number of roots and tubers in the soil, and the number of roots and tubers left by it is directly dependent on the type of soil, crop variety, planting dates and a number of other factors.

The data obtained in the experiments with planting corn confirm that after this crop, the largest number of root and stem residues remained in the 0-50 cm soil layer. However, due to the fact that this crop absorbs a lot of nutrients from the soil, the remaining root and shoot residues ensure the preservation of soil fertility.

In the experiment, corn was planted on June 25, the yield was

4.35-4.42 t / ha, root residue - 4.02-4.22 t / ha in the variant with planting on July 5. Traces and root residues. So, it is clear that both the planting period and the Uzbekistan-300 corn variety have high performance indicators.

Depending on the duration of bean planting, the number of roots and shoots in the 0-50 cm soil layer also varies in the variants with bean planting, and in the 7th variant, where planting is carried out on

5.07, it is 0.92 and 0. 32 t / ha of organic residues remained. The general norm is 1.25 t / ha, but this is the lowest figure among these variants. The data obtained in the 4th variant of the experiment also differ slightly compared to the 3rd variant and left a total amount of

1.35 t / ha of organic residues, of which 1.02 t / ha is accounted for by the root and 0.34 t / ha for the

part it was anguise. In the 3rd and 4th variants, planted on July 5, the highest norm of 1.35 and 1.55 t / ha was achieved without sharp differences from each other. In addition, the amount of roots and root residues remaining from crops and the nutrient content in them are acceptable and affect the improvement of soil fertility. Therefore, in our research, we analyzed the root and shoot residues remaining after each crop to determine the amount of nutrients in them in the laboratory.

The data obtained in the first year of research show that among crops, the amount of nutrients in the root and root residues of beans is characterized by a high amount compared to corn, but we see that the ratio of these amounts is definitely related to the period of their planting. That is, the amount of NPK remaining in the soil of roots and shoots will also decrease if beans are planted late.

At the same time, their optimal ratios are relatively high in variants 3-4 with the planting date of June 25, and in the root composition N-1.452%, P-0.922% and K-1.135%, while in the root composition, these indicators are 1.239 in relation to NPK substances; This amounted to 0.332 and 1.685 percent. The planting dates in variants 7 and 8, carried out on July 5, are close to variants 7 in 8 variants, that is, N -1.429%, P-0.917% and K-1.133% in the root composition, N -1.230 in the root composition. ; P-0.321 and K-1.679 percent.

The lowest indicators were recorded in the 7th and 8th variants with sowing dates of July 5 (H-1399 and 1419; P-0.872 and 0.882; K-1057 and 1115% by root content, H-1192 and 1229; P-0.288 and 0.323; K-1584 and 1640 percent).

In our experiments, we also studied the yield indicators of corn varieties, and in the repetitions planted on June 25, the yield indicators varied from 54 to 75 c/ha. Among the varieties, the highest average yield was observed in the Uzbekistan-300 variety when planted on June 25 and amounted to 75 c/ha, and the lowest these indicators were in the Yulduz variety - 59 c/ha. The number of pods per plant was 14.5, while for the Marzhon variety it was 13.8. Delay in planting resulted in a decrease in the number of pods per plant. The yield of grain legumes depends on the number of grains and the weight of the grain. However, the abundance of grain is the basis for high grain yield.

Since the quantity and weight of grain is at the level of demand, this ensures the abundance and quality of the harvest. Planting dates affected the grain yield of the Rowon and Marzhon bean varieties. The grain yield varied from 34.8 c/ha to 29.3 c/ha depending on the sowing methods.

Thus, it is clear that planting corn and beans after the first of July leads to a decrease in soil fertility and the yield of agricultural crops.

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