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"THE EFFECT OF REPEATED BEANS CROP ON GROWTH DEVELOPMENT AND GRAIN YIELD DEPENDING ON MINERAL FERTILIZER STANDARDS IRRIGATION UNDER CONDITIONS OF EROSIONED SOIL"

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ABSTARCT:

In this article given the scientific sources on the achievement of high grain yields as a result of an increase in the number of pods when applying mineral fertilizer standards $N_{50}P_{80}K_{60}$ kg /hec. for repeated mowing after autumn wheat in addition to good growth and development in the washed part of the soil under typical gray soils under erosion.

KEYWORDS: irrigation erosion, beans, nitrogen, phosphorus, potassium, dry mass, growth and development

INTRODUCTION:

Today, soil erosion protection in the agricultural sector of the Republic is one of the most important and urgent problems in many countries located in arid climates, especially in Uzbekistan. In the country, 722,000 hectares of land were affected by irrigation erosion, 1,812,000 hectares by wind erosion (in arable lands), including 1,929,000 hectares by water and wind erosion (Mirzajanov and others, 2011). One of the reasons for the sharp decline in crop yields under the influence of these factors is that it affects the leaching of nutrients from the soil due to irrigation erosion.

According to the results of the research, this identified that, the soil fertility in a field varies, which in turn demands to irrigate the fields accordingly, to require fertilization, tillage and crop rotation.

In crop rotation, according to the information of foreign scientists J.K. Bisht, A.S. Chandel [5; pp. 429-432], in the sequence of growing corn for soybeans, the yield of cotton increases as the soybean plants fix the atmospheric nitrogen and increase soil fertility, especially soil nitrogen and consequently increase the yield of subsequent crops.

According to the above considerations, it requires the introduction of short-term crop rotation systems, which, depending on soil fertility, are included in the cotton complex, ensuring an increase in crop yield and quality. At the same time, the cultivation of crops in these systems, which maintain and increase soil fertility, requires improvement. In addition, the annual population growth in the country has led to the efficient use of each hectare of

land, crop rotation two or three times a year, the state demand for grain and its products is growing rapidly from year to year. It requires the gradual development of grain growing in order to fully satisfied the existing needs. For this, first of all, it is necessary to work on the basis of a scientific program, to test and select a new fertile regional climate. The demand of cultivars for nutrients, water and other care factors should be studied in depth and act on a scientific basis. This process requires the planting of crops that maintain and restore soil fertility, along with the timely and quality implementation of agro-technical measures applied to them. It is also important to maintain and increase soil fertility that, helps us to achieve positive results use of legumes in the system of efficient crop rotation for high yields. With this in mind, we conducted field experiments in the conditions of typical gray soils of Tashkent region subject to irrigation erosion in order to increase the growth and yield of high-yielding crops in the vacant lands after winter wheat, depending on the norms of mineral fertilizers. The experiments were carried out on the washed part of the soil, taking into account that the main part of the soils affected by irrigation erosion is the washed part of the soil. In the experiment, 3 varieties of "Durdona" beans variety with differentiated mineral fertilizer norms were used as a repeat crop ($N_{25}P_{80}K_{60}$; $N_{50}P_{80}K_{60}$; $N_{75}P_{80}K_{60}$) kg/hec. Phenological observations were made during the growing period of growth, development of the moss crop, and at the end of the application period we were able to obtain a high grain yield. In the experiment, phosphorus and potassium fertilizers were applied twice before plowing and during the growing season with nitrogen fertilizers. Field experiments were conducted in accordance with the guidelines "Methods of conducting field experiments" (2007). After the winter wheat was harvested, replanted crops were planted on July 9 in the experimental field and seed water was given on July 11-12. Beans seeds germinated fully in 7 days after watering.

Four days after full germination, the seedlings began to produce true leaves. Flowering period was observed in August, 20–25 days after leaf emergence. 7–10 days after the onset of flowering (August 25), the beans began to bloom, and on September 1–5. The beans start to ripen on September 25-30 and are fully ripe on October 15-20.

Table 1 Growth development of beans planted as a secondary crop and grain yield / hec.

Mineral fertilizers used in autumn wheat FUND	The norm of mineral fertilizers in repeated beans crops, kg /hec.	variant	2-3 leaf period		Fruiting period		End of validity period		
			Plant height, sm	Number of leaves	Plant height, sm	Number of pods, seeds	Plant height, sm	Number of pods, seeds	Grain yield ts / hec.
$N_{250}P_{175}K_{125}$	**The washed part of the ankle**								
	$N_{25}P_{80}K_{60}$	1	18,2	4,2	43,6	4,6	44,9	22,9	14,4
	$N_{50}P_{80}K_{60}$	2	22,6	5,2	44,5	5,2	45,8	27,8	15,9
	$N_{75}P_{80}K_{60}$	3	25,5	6,5	48,3	4,8	51,0	25,3	14,1

The beans lasted 90-95 days from full germination to full ripening. (Table 1) When we observed the growth development of beans in August, the height of the plant varied from one variant to another.

CONCLUSION:

Our research has shown its impact on the growth and development of beans and grain yield, as mineral fertilizer rates vary in each variant. In 1 variant planted as a repeat crop in the washed part of the soil, the plant height is 18, 2 cm in 2-3-leaf dervishes, 43.6 cm during the fruiting period and 44.9 cm at the end of the application period, the number of pods was 22.9, while the highest rates of growth and development were observed in our 3rd variant. Mineral fertilizer standards in this option $N_{75}P_{80}K_{60}$ kg/hec. Although the plant height is 25.5 cm during the 2-3 leaf period, 48.3 cm during the fruiting period and 51.0 cm at the end of the applied dervish, at the end of the beans period, the number of pods decreased and the grain yield was 14.1 ts / s.

Norms of mineral fertilizers in practice $N_{50}P_{80}K_{60}$ kg/hec. in the applied variant 22.6 sm during the 2-3 leaf period and 44.5 sm during the fruiting period and at the end of the application period it was 45.8 sm, but at the end of the application period the number of pods was higher than in the first and third options, ie 27.8 units and the grain yield was 15.9 ts/hec. So, the good growth development of the beans crop in the washed part of the soil under the conditions of typical gray soils subject to irrigation erosion and an increase in the number of legumes proved that mineral fertilizer standards should be applied to $N_{50}P_{80}K_{60}$ kg /hec to obtain a high grain yield.

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