



INFLUENCE OF SOWING PERIODS OF MUNG BEAN ON ITS GROWTH AND DEVELOPMENT

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ANNOTATION

In this article, the yield of mung bean at different sowing periods was studied in experiments. It was observed that high yields can be obtained in the early sowing period. It was found that the yield in the mung bean was somewhat different compared to the late planting periods.

KEYWORDS: *mung bean, legumes, soil, organic, biological nitrogen, sowing periods, early, late.*

INTRODUCTION

Karakalpakstan has a sharply changing climate, it is dry subtropical region, and it has relatively dry and hot weather. It is characterized by the duration of warm days (210-240), which allows to harvest 2-3 times a year agricultural crops in the region. It gives the opportunity to produce fast-growing food crops as a repeated crop. In recent years, when food shortages around the world have become more acute, the ecological balance has been destroyed, and the problem of protein has been observed, the production of legumes as a repeated crop is of great importance. Legumes are very rich in grain protein and valuable amino acids, with an average protein content of 18-40%, which is 1.5-3 times higher than winter wheat.

Mung bean (*Phaseolus Aureus*) is a legume that is characterized by rapid ripening and short vegetation period. Therefore, this crop can be grown as a repeated crop even in relatively late periods. H. Atabaeva [2], I.Israilov, A.Karimov, A.Kurbanov [4], A. Iminov, B. Kholikov [3] carried out a number of scientific works on the cultivation of cereals and legumes as a repeated crop in irrigated lands of Uzbekistan.

According to T.Rajabov, I.Hoshimov [5], in order to get high grain and hay yields from mung bean in the conditions of dry soils, it is necessary to cultivate 190-193 thousand seedlings in the second half of July at a rate of 20 kg of seeds per hectare. During the season, 120 kg of nitrogen and 150 kg of phosphorus were used, and three times irrigation was noted to give high results.

In the scientific researches of I.Abdurahmonov [1], the change of water-physical and agrochemical properties of the soil depends on the remnants of root canals, when mung bean was sown as a repeated crop by leaving 1.96 c/ha roots,

17 c/ha yield was received, and the volume mass in the tillage layer was found to decrease by 0.02–0.03 g/cm³ at the end of the season.

METHODS OF CONDUCTING THE EXPERIMENT

There is not enough scientific data on the cultivation of legumes, including mung bean, under irrigated conditions. Proper selection of mung bean varieties, determination of optimal sowing scheme, seedling thickness and sowing dates are of great scientific and practical importance.

The experiments were conducted in the fields of “Shurtanboy” experimental farm in Nukus district. In the experiment, the variety “Durдона” of mung bean was studied by sowing at different times. In the experiment, the total area of one plot was 112 m² (width 5.6 m, length 20 m), of which the calculated area was 56 m² (width 2.8 m, length 20 m). All monitoring and calculation work was carried out in the calculated area.

RESEARCH RESULTS AND THEIR DISCUSSION

In the experiment, 20 bushes of mung bean were taken for comparison, we can see that their height ranged from 38-98 cm, and the number of legumes ranged from 23-85 in 1 bush. Legume has 8-18 grains, 1000 grains weigh 50-90 g.

The difference between mung bean and other plants is that they have leaf plates. Adequate leaf surface should be formed in the field for normal growth of mung bean. In order to speed up the physiological processes, the total leaf surface in the field is about 30-35 cm². 90-95% of the total biological yield of the plant is formed in the presence of chlorophyll in the leaves and is a product of



photosynthesis. All important physiological processes in the plant: transpiration, photosynthesis, aeration and metabolism take place in the presence of leaves. The total leaf surface depends to some extent on the seed sowing scheme and seedling thickness. Proper determination of the feeding area and seedling thickness has a positive effect on the growth and development of the plant, as well as accelerates the process of photosynthesis. When the plant is sparse, the feeding area is wide, the root system and stems of the plant grow freely, resulting in an adequate leaf surface.

Sowing mung bean provides atmospheric nitrogen accumulation, increase of organic matter, improvement of soil water-physical properties, increase of productivity, prevention of secondary salinization, increase of crop yields by 20-30% as a result of activity of endogenous bacteria living in plant roots.

The chemical and physicochemical properties of the soil, the productivity of the mung bean were studied under different variants in the experiment. It was observed that high yields can be obtained in the early sowing period. It was found that the yield in the mung bean was somewhat different compared to the late planting periods.

It is one of the medicinal crops rich in protein and vitamins, along with increasing the natural fertility of the soil by accumulating 50-100 kg/ha of biological nitrogen and organic matter in the soil during the growing season of legumes.

CONCLUSIONS

In summary, while the delay in sowing times led to a sharp decline in the yield of the mung bean crop, we observe that the yield was higher when the mung bean was sown early.

In the climatic conditions of the Republic of Karakalpakstan, it is recommended to sow legumes, including mung bean, at an early stage to ensure high yields.

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