

# GROWTH, DEVELOPMENT AND PRODUCTIVITY OF MUNG BEAN SOWN ON SIDERATION

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## ANNOTATION

Cultivating mung bean for green manure and plowing into the soil before sowing winter wheat and thereby increase the yield of winter wheat and the humus content in the soil is the main goal of our field experiment.

**Keywords:** sideration, mung bean, biomass, green manure, humus, precursor, straw.

## Introduction

With an increase in soil fertility, scientifically based placement of agricultural crops in the regions of the republic, the correct selection of green manure plants and predecessors in grain crop rotation, the development of advanced technologies for their cultivation is the actual problem.

In the conditions of meadow-grey soils of the Zarafshan Valley, the use of green manure in the cultivation of winter wheat makes it possible to obtain a high and high-quality grain yield and improves the agrophysical properties of these soils.

## Materials and Methods

The multiple experiments, it has been proven that legumes and leguminous crops have a positive effect on soil density. Since nodule bacteria growing symbiotically in the roots of these crops enrich the soil with nitrogen and organic matter and thereby contribute to the improvement of the physical properties of the soil. According to the positive effect on the physical properties of soils from leguminous plants, mung bean is in second place after soybeans.

In addition, with an increase in the sowing rates of mung bean, its positive effect on soil density increases.

Under the conditions of irrigated light gray soils of the Kashkadarya region, the cultivation of mung bean (Durdona variety) after harvesting winter wheat as an intermediate crop at the beginning of the growing season at a soil depth of 0-30 cm, the soil density was equal to 1.138 g/cm<sup>3</sup> and at the end of the growing season, the density of the soil was 1.243 g/cm<sup>3</sup>: at a seeding rate of 90 thousand / ha - 1.241 g / cm<sup>3</sup>, at a seeding rate of 110 thousand / ha - 1.238 g / cm<sup>3</sup>, at a seeding rate of 130 thousand / ha - 1.238 g / cm<sup>3</sup>. At a soil depth of 30-50 cm, these indicators were, respectively, 1.293; 1.292; 1.289 and 1.290 g/cm<sup>3</sup> (B. Khalikov, N. Yadgarov, U. Makhmudov 2019).

Field experiments were carried out in the conditions of old-irrigated meadow-gray soils of the Tailyak district of the Samarkand region in the farm "Bakhriddinov Shokhzhakhon" according to generally accepted methods.

## Results and Discussions

To consolidate the sovereignty of the republic, our state annually needs 4.5-5 million tons of grain. To obtain a high and high-quality grain crop, it is necessary to scientifically substantiate the placement of

predecessors in the crop rotation. It is required to obtain 2 and 3 times the crop yield per year. Soil fertility plays an important role in the existence of these requirements.

At present, organic fertilizer, which increasing the soil fertility - manure is deficit not only in Uzbekistan, but around the world. In this regard, in the conditions of meadow-gray soils of the Samarkand region, an increase in soil fertility, as well as the yield and quality of winter wheat grain, to choose the best predecessor for winter wheat, the widespread use of green manure crops as green fertilizer, the study of the growth, development and yield of green manure crops and their influence on the growth, development and yield of winter wheat was the main goal of our experiment. The experiments were carried out in 2015-2017.

The yield of green mass of mung bean sown as an intermediate crop in 2015 was 8.2 t/ha, the biomass of the aerial part of mung bean was 6.9 t/ha. In 2016, the average yield of green mass of mung bean was 7.9 t/ha, the biomass of the aerial part was 6.3 t/ha, the results of the experiment conducted in 2017 showed that the average yield of green mass of mung bean sown after winter wheat was 8.0 t/ha, and the biomass of the above-ground part of mung bean was 6.5 t/ha. The green mass of mung bean was plowed into the soil before 10-15 days before sowing winter wheat.

In short-term grain crop rotations, the cultivation of mung bean after winter wheat as an intermediate crop plays an important role in solving the food problem of the republic. In the conditions of meadow-saz soils of the Fergana region, an experiment was conducted to study the growth, development and yield of mung bean sown as an intermediate crop at a rate of 160 thousand grains/ha. At the same time, seedlings were traced after 5 days. In the phase of the appearance of a true leaf, the growth of the culture reached 14.1 cm, the number of leaves was up to 3.5 pieces. In the budding phase, plant growth was 31.1 cm, fruit-bearing branches - 3.2 pieces, the number of buds up to 5.0 pieces, and the number of flowers - 14.1 pieces. In the bean formation phase, plant growth grew to 52.3 cm, the number of beans was 22.6 pieces, in the ripening phase, mung bean grew to 63.5 cm, the number of beans reached 31.0 pieces. One bean contained 12.3 pieces of grain, the weight of 1000 grains was 62.0 grams, the grain yield reached 19.0 q/ha (Ergashev N, 2017).

Currently, the area of irrigated land under winter wheat in the republic is more than 1.0 million hectares. On fields freed from winter wheat, beans, soybeans, mung beans, corn, sunflowers, vegetable crops and others can be sown. The yield of secondary crops depends on the fertilization of the main crop and these secondary crops. In conditions of non-saline, deep-lying groundwater (20 m) of typical gray soils, when fertilizing at the rate of N120P90K60 for winter wheat and when fertilizing mung bean at the rate of N25P80K60, if the height of the plants was 44.8 cm, the number of beans is 15.8 pieces, then when fertilizing winter wheat in the norm N180P120K90, and mung bean in the norm N25P80K60, the height of the plants was 46.6 cm, and the number of beans was 17.9 pieces. When fertilizing winter wheat at the rate of N240P140K120 and mung bean at the rate of N25P80K60, mung bean grew by 45.8 cm, and the number of beans was 17.2 pieces. Thus, the optimal fertilizer rates for the main and secondary crops contribute, under certain soil conditions, to the opportunity to obtain economically and environmentally friendly food products (Gafurov D, Mirzaev L and Khaidarova D, 2017).

## Conclusions

Mung bean - sown as a green manure crop and plowed before sowing winter wheat in the conditions of meadow-serozem soils of the Zarafshan Valley, makes it possible to obtain 5-7 c/ha more winter wheat grain than other green manure crops such as peas (4 c/ha) and mustard (3 c/ha).

## References

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