



Effects of intercropping on soil fertility and yield of winter wheat

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Abstract. In order to maintain and increase soil fertility in the areas freed from winter wheat, planting of previous crops such as cotton, corn, mung bean, peas, rapeseed and their effect on winter wheat productivity was studied. As a result of the planting of plants that have a positive effect on soil fertility, such as mash, peas, and rapeseed, it was observed that the yield indicators of winter wheat changed in a positive direction.

Key words: previous crop, soil fertility, mung bean, pea, rapeseed, winter wheat, root and ear residues, growing season, biological nitrogen, sideration, productivity.

Introduction Currently, 2.1 billion tons of grain are grown worldwide, of which wheat grain is 759.6 million tons of the total harvest. The wheat cultivation area is 243.5 million ha, including countries such as the USA, Germany, China, India, Brazil, Australia, Canada, Russia, and Ukraine. . ni, and 1.5 t in dry land conditions. is

By 2050, grain production in the world is expected to reach 3 billion tons. For efficient use of areas freed from winter wheat, it allows, among other things, to increase soil fertility and winter wheat productivity. Based on this, the widespread use and implementation of leguminous grain crops and intercrops in winter wheat short-row planting is relevant today [7- 353-394 p.p.].

Materials and methods. Field experiments are aimed at studying soil fertility, its agrophysical and agrochemical properties, winter wheat yield index as a result of planting crops such as cotton, corn, peas, mash, and rapeseed [1; 145 b].

Field experiments were conducted in 6 variants with 4 replications. In the experiment, each plot was 60 m long and 7.2 m wide. Experience options are systematically arranged in one tier.

The obtained results and their analysis. In the researches, it was observed that in the control variant planted with winter wheat, root and stem residues were 3.56 t/ha, 3.73 t/ha when the previous crop was cotton, 4.27 t/ha when corn was planted as the previous crop, and 2.55 t/ha when peas and mash were planted. 2.14 t/ha, and it was observed that the total amount in rapeseed was 5.14 t/ha on average (Fig. 1).

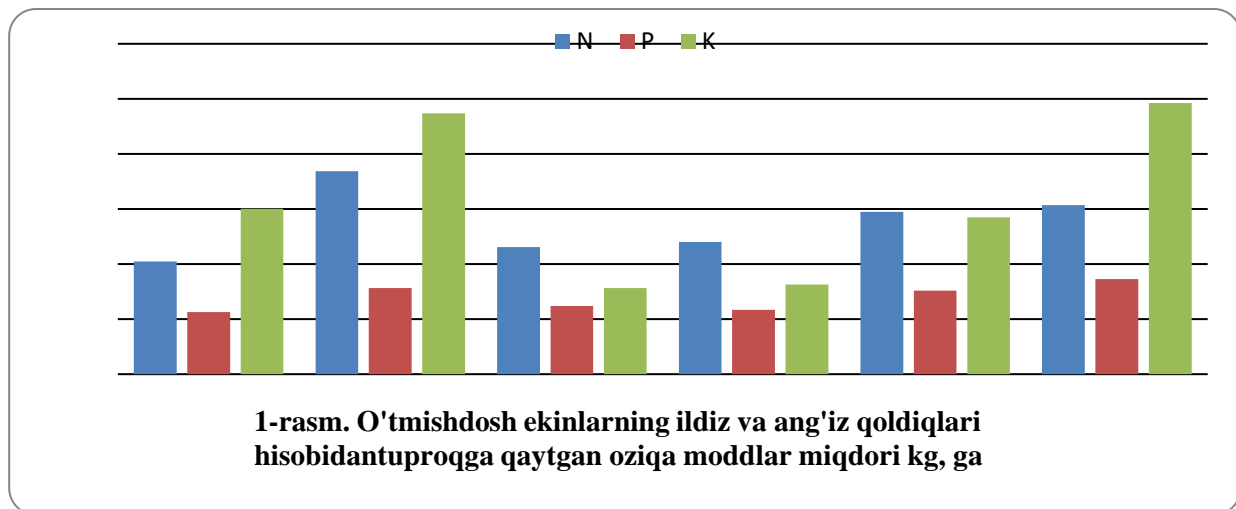
Not only the productivity of winter wheat after peas, mash, and rape planted as predecessor crops, the grain weight in kind was 780, 795 g/l. It is 18.33 g/l, the protein content is 2.0-2.1% higher



than the control variant, and the mass of 1000 grains is 38.5-39.2 g, in accordance with the above. was found to be 2.9-3.6 g higher [5; b. 29].

When leguminous grain and repeated and intermediate crops were planted in the fall wheat field, the amount of nitrogen, phosphorus, and potassium increased compared to the initial amount during the agrochemical analysis of plant residues left in the soil [6; pp. 110-112]

In the researches, in the winter wheat (control) variant, root and stem residues were on average 3.56 t/ha, N-20.47 kg/ha, P-11.30 kg/ha, and K-30.05 kg/ha were observed. 3.73-4.27 t/ha of total roots and tubers on average when cotton and corn are planted from previous crops accumulated residues and nutrients N-36.89-23.11 kg/ha, P-15.62-12.40 kg/ha, K-47.37-15.61 kg/ha were returned to the soil.



As a result of planting mush and other leguminous crops as a repeated crop after winter wheat, many nutrients are returned to the soil in exchange for the remains of roots and shoots, and they noted that soil fertility changes in a positive direction [3; p. 28].

Preceding crop leguminous-cereal crops are peas, mung bean, N-24.03-29.48 kg/ha, P-11.71-15.18 kg/ha, K-16.27-28.47 kg/ha. it was observed that the elements were returned to the soil.

He noted that the yield of green mass of siderates was 6.0 t/ha when planted in a mixed state, and 3.19 t/ha when planted in a pure state [2; pp. 38-39].

In the version of the experiment where rapeseed was planted, the root and stem residues left in the soil amounted to 5.14 t/ha, and returned nutrients N-30.72 kg/ha, P-17.26 kg/ha, and K-49.27 kg/ha identified (Fig. 2).

The data show that, regardless of crop type differences, the positive effect of previous crops on soil fertility was evident.

Summary. In the control version of the experiment, the yield was 48.7 t/ha, under the influence of previous crops, the productivity indicators were 10.1-11.9-11.6 t/ha in the options planted with peas, mash, and rape, which is the highest. It has been determined that the average yield of winter



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wheat grain was 58.7-60.5-60.2 t/ha in the variants planted with peas, mash, and rapeseed as predecessor crops.

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