



Effects of an Adjustable Weed Control System on Soil Porosity

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Abstract: Plowing the soil against weeds with a two-layer plow at a depth of 28-30 cm, applying herbicides in a coordinated manner, the porosity of the soil in the 0-30 cm layer is up to 0.86%, in the 30-50 cm layer, up to 0.99%, compared to the background treated with a regular plow. ensures that it is high, which in turn has a positive effect on the good growth and development of plants.

Keywords: Soil, cotton, winter, rotation, agro-measures, agro-technologies, cultivation, grow, combination.

In developed countries that grow cotton and winter wheat in the world, research is being carried out on the use of herbicides before plowing, seeding, and during the growing season in the fight against weeds. Taking into account that it is not always possible to improve the phytosanitary condition of fields in the cotton-grain rotation system with soil cultivation measures alone, positive results are obtained as a result of carrying out herbicides in combination with other agro-measures.

In our republic, it is very important to carry out research on the improvement of agro-technologies for growing high and quality crops from winter wheat crops, along with the main methods of soil cultivation, using herbicides in harmony at different times and rates.

From this point of view, it is appropriate to carry out scientific research on the effectiveness of the combined use of herbicides and basic tillage methods in the fight against weeds in cotton and grain fields, as well as their widespread implementation.

Experimental system and methods of transfer

Field experiments were conducted in 6 variants, 4 replications and 1 layer. The area of each option is 720 m², and the accounting area is 360 m². The total area of the experiment is 1,728 hectares. In our experiment in cotton, weed control Dafosat from plow, Stomp 33% e.c. herbicides were sprayed with planting, and in our field experiments on winter wheat, Granstar 75% DF was used against annual weeds, and Granstarplus herbicide was used for perennials. Andijan-35 of cotton and "Krasnodar-99" of winter wheat were cultivated in the experiment.

Research results and their discussion

Effect of different tillage methods on soil porosity. In our study, quantitative research was conducted on soil porosity indicators, which is one of the agrophysical properties.

In our research conducted in cotton, when the soil porosity indicators were studied in the section of options, before planting the seeds, the soil was plowed to a depth of 28-30 cm with a simple plow (option 1), in the control option (option 1), the porosity of the soil in the 0-30 cm layer of the soil was 53.70%, and the plow was 30-50 showed 49.63% in the cm layer, in options 2 and 3 it was observed that these indicators were equal to 52.96-53.33% in the 0-30 cm layer of the soil and

49.26% in the 30-50 cm layer. it was determined that it was 53.33% in the 0-30 cm layer of the soil, and 49.38% in the 30-50 cm layer.

When analyzed in the background section, where the soil was plowed with a two-layer plow at a depth of 28-30 cm, in the 4th option (control), the porosity index in the 0-30 cm layer of the soil was 54.07%, and in the 30-50 cm layer, it was 50.37%. indicators in the 5th and 6th options are 54.44-53.70% in the 0-30 cm layers of the soil, and 50.0% in the 30-50 cm layers, while the background average is 54.07% in the 0-30 cm layer, It was noted that it was equal to 50.12% in the 30-50 cm layer.

As can be seen from the obtained data, it is observed that the effect of soil tillage methods on the porosity indicators is significant. Compared to the background plowed with a simple plow at a depth of 28-30 cm, the soil porosity indicators are 0-30 cm and 30- It was noted that it was less than 0.74% in 50 cm layers, respectively.

By the end of the operation period, when the soil porosity indicators were analyzed in the form of options, according to the methods of soil treatment and the volume weight of the soil, the porosity of the soil in the background plowed to a depth of 28-30 cm with a double-layer plow compared to the background plowed with a simple plow at a depth of 28-30 cm. it was observed that the indicators were up to 0.86% in the 0-30 cm layers, and up to 0.99% in the 30-50 cm layers, and it was found that the porosity of the soil was 0.13% higher compared to the treatment methods.

From the research data, it can be concluded that when the soil is treated with a two-layer plow, the porosity of the soil is higher than when it is treated with a simple plow, which means that the plants in their vegetation. It was found that when the soil was treated with a two-layer plow, the porosity of the soil was higher than when it was treated with a simple plow, which had a positive effect on the development of the root system of plants.

Effect of cultivator cultivation at a depth of 15-20 cm between cotton rows on soil porosity. Analyzes of soil porosity were also conducted in the experimental field where winter wheat was grown.

The obtained results show that when the soil porosity indicators were studied in the section of backgrounds where cotton was cultivated as a previous crop before cultivation with a cultivator at a depth of 15-20 cm between the rows of cotton, the plowing of the soil in the 0-30 cm layer into the soil with a simple plow at a depth of 28-30 cm compared to the soil. it was observed that the background, which was plowed with a two-layer plow at a depth of 28-30 cm, decreased by 60% on average in the 0-30 cm layer, and by 0.62% in the sub-plowing (30-50 cm) layer.

By the end of the winter wheat season, when the soil porosity indicators were studied in the sections of the backgrounds where cotton was cultivated as a predecessor crop, soil plowing in the 0-30 cm layer with a simple plow at a depth of 28-30 cm compared to the background where the soil was cultivated with a two-layer plow at a depth of 28-30 cm although it increased on average by 0.98% in the 0-30 cm layer of the given background, by 0.87% in the driving (30-50 cm) layer, compared to the beginning of the period of validity, it increased by 0.74% in the 0-30 cm layer, 30 It was found that 1.11% was less in the -50 cm layer.

List of used literature

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