

UDC: 631.51+632.95.028

THE EFFECT OF DIFFERENT SOIL TREATMENT AND HERBICIDES ON THE ACTIVITY OF SOIL MICROORGANISMS

A.M.Djuraev

Independet researcher of Tashkent state agrarian university

Abstract: Herbicides Granstar 75% - 15 g/ha, Peak 75% - 15 g/ha, Axial 50 KE-0.75 l/ha are used in the scientific article to fight against weeds spread in the field of winter wheat separately and in combination Peak 75 % -15 g/ha+Axial 50 KE-0.75 l/ha norms of soil bacteria, it was stated that it did not have a negative effect on the amount of fungi and actinomycetes.

Keywords. Tillage, herbicides, microorganisms, bacteria, fungi, actinomycetes.

Introduction. It is known that soil fertility, improvement of its agrophysical and agrochemical properties are directly related to the activity of microorganisms in the soil. Microorganisms actively participate in the processes occurring in the soil, decompose organic residues and form valuable organic matter - humus [1,3]. Various influences on the soil: irrigation, fertilization, soil cultivation, and the rate of pesticides used are of great importance for the activity of microorganisms in the soil. In this regard, the harmful effects of the type of herbicides used to combat weeds, their composition, and application rates remain major problems in agriculture. [4].

Materials and methods. In scientific studies conducted in 2021-2023, the effect of various soil tillage and herbicide application rates and methods on the activity of microorganisms in the soil was determined in the fight against weeds in winter wheat fields. Soil samples were taken from the 0-30 cm topsoil layer, and the number of bacteria, fungi, and actinomycetes in 1 gram of soil was studied and tested in laboratory conditions by inoculating them on meat peptone agar (HPA) nutrient medium, Chapek solid nutrient medium (Chapek Medium), and starch-ammonia agar (KAA) media. [2].

The obtained results and their analysis. According to the obtained data, in the first year of the experiment (2021), the number of bacteria in the 0-30 cm layer was 49.7-52.1 million per 1 g of soil in the options where plowing 20-25 cm + chipping 18-22 cm + grinding was carried out before applying herbicides in the spring, fungi 69.1-72.4 thousand/piece, actinomycetes It was 46.7-49.8 million/piece. These indicators are respectively: 50.1-52.8 million/piece, 69.6-72.4 thousand/piece, 49.3-52.8 million/ was taken into account. In the cases where the land is plowed directly into the soil at 18-22 cm, and wheat is cultivated by milling, the number of bacteria in 1 g of soil is 51.6-53.5 million/piece, fungi 70.8-73.8 thousand/piece, actinomycetes 50, It was 2-52.1 million/piece.

There were no significant differences in the activity of microorganisms according to different tillage methods and depths.

In the experiment, Granstar 75% -15 g/ha (reference), Peak 75% -15 g/ha, Axial 50 KE -0.75 l/ha and herbicides Peak 75% -15 g/ha+ Axial 50 were applied against winter wheat weeds. KE - 0.75 l/ha after the application of herbicides in order to study the effect of application in the form of a joint mixture on the activity of microorganisms, at the end of the period of operation of winter wheat, the amount of bacteria in the 0-30 cm layer in 1 g of soil, respectively, in the options where herbicides were not applied to the soil under different tillage conditions: 60.4; 62.3 and 61.6 million/piece, fungi 82.1; 83.6 and 82.7 thousand/piece, actinomycetes 53.2; It was 55.1 and 54.3 million units. These indicators are plow, 20-25 cm+ chiseling 18-22 cm+grinding background herbicides Granstar 75% -15 g/ha (standard), Peak 75% -15 g/ha, Axial 50 KE -0.75 l/ha and herbicides Peak 75% -15 g/ha+ Axial 50 KE - 0.75 l/ha co-applied respectively in variants: 57.4; 59.4; 56.3; 55.1 million/piece, 79.8; 78.8; 77.2; 75.6 thousand/piece, 50.4; 51.7; 52.3; It was taken into account that it was 49.7 million/piece. Chiselash 18-22 cm, and in the options where herbicides are used in the background of grinding, the amount of bacteria in 1g of soil is 60.4; 61.6; 60.3; 59.4 million/piece, fungi 81.7; 80.8; 79.6; 78.2 thousand/piece, actinomycetes 53.6; 54.5; 52.7; If it was 52.2 million/piece,

plowing is 30-35 cm, chiseling is 18-22 cm, and in the variants of milling background, 60.8; 57.5; 58.3; 56.7 million/piece, 79.3; 78.5; 78.3; 77.8 thousand/piece, 50.6; 51.8; 50.2; It was 49.5 million/pc.

Conclusion. According to soil analysis data, Granstar 75% -15 g/ha (standard), Peak 75% -15 g/ha, Axial 50 KE -0.75 l/ha and herbicides were used against common weeds in the winter wheat field. Peak 75% -15 g/ha + Axial 50 KE - 0.75 l/ha norms of application in the soil It was found in our experiments that it did not have a harmful effect on microorganisms (bacteria, fungi, actinomycetes), but that their activity improved.

References.

1. Juraev A.M., Rizaev Sh.Kh. Effect of herbicides and soil cultivation on weed infestation of winter wheat crops. J. Actual problems of modern science. - Moscow, 2024. - No. 3 (138). -P. 33-43.
2. Methods of agrochemical, agrophysical and microbiological research in field cotton areas. -Tashkent, 1963. -439 p.
3. Djuraeva S.F., Rizaev Sh.Kh. Influence of Weed Control Measures on Soil Fertility and Microflora in Cereal Fields. // International Journal of Biological Engineering and Agriculture ISSN: 2833-5376 Volume 1. No 3. Sep-2022. Pp. 5-7.
4. Shukhrat Rizaev, Kamolidin Sharifov, Sabir Sanayev, Sabirjan Isaev, and Bobur Kholmurzaev. Efficiency of agrotechnical and chemical measures in control of weeds in onion (*Allium cepa* L.) fields. 5th International Conference on Energetics, Civil and Agricultural Engineering (ICECAE 2024). [E3S Web Conf., 497 \(2024\) 03036](#).

ITALY

EPS 10