IMPROVEMENT OF ECOLOGICAL STATUS OF SOIL IN ORGANIC AGRICULTURE

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Abstract

This article investigates major points of this improvement of ecological status of soil in organic agriculture. Moreover, on this way, soil in organic agriculture has been investigated both theoricatal and methodological ways. Finally, research has been pinpointed on various categories to make further developments.

Keywords : improvement, ecological status, soil, organic agriculture, Uzbekistan.

INTRODUCTION

It is known from history that agriculture first appeared in the late Stone Age (Neolithic). The study of the effects of anthropogenomil on the biosphere also dates back to the Neolithic period. The first cultivated soils were underdeveloped but had high natural fertility. Continuous use of fertile land has led to a deterioration in the ecological condition of the soil.

Deforestation for agricultural purposes and the expansion of new lands have disrupted the stability of natural ecosystems. The role of soil in nature is unique, it is the surface layer of the lithosphere, which is important in the cycle of matter and energy in the biosphere. Soil formation during evolution is the product of a long-term large-scale geological cycle. Soil as an ecological factor is a living environment and food source for living organisms. Indicators of soil properties, such as physical properties, chemical and mechanical composition, are one of the factors determining soil structure and fertility.

The long-term use of land resources by anthropogenomils has led to changes in soil structure and declining productivity. The focus on soil fertility is not one-sided, but is achieved through a combination of physicochemical, biochemical, and biological properties. Measures aimed at restoring the integrity of the soil play an important role in improving the ecological condition of the soil.

MAIN PART

Demographic growth is leading to a sharp increase in demand for food and serious problems with it. Our land may be able to support the growing population, but it may not be able to feed it. While 3 billion people in the world are starving and starving, more than 8 million are suffering from hunger. Inequality in the amount of fertilizer applied to the soil does not correspond to the energy of the crop, which leads to a decrease in soil fertility. President of the Republic Sh.M. Improving the reclamation of irrigated lands, development of irrigation and reclamation facilities, ensuring their safety and stability in the "Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021" adopted by Mirziyoyev, a clear program for the rational and economical use of water resources and, on this basis, the achievement of sustainable agricultural production. The task of the Action Strategy is to reduce the area under cotton and cereals, to create potatoes, melons, legumes, annual oilseeds, new vineyards and intensive crops on the vacant lands in order to radically reform agriculture is marked.

In the last 40-50 years in our country, improper organization of crop rotation in the agricultural system, the perennial cotton monopoly has led to a decrease in soil fertility to 45-50%. Taking into account the growing demand, organic farming is the most effective solution to fully satisfy the demand of the population of the Republic for agricultural products and increase the potential for export of surplus products to world markets. The term organic farming is also synonymous with organic farming. Organic agriculture became widespread in 2016 in many countries around the world. In particular, it is used in about 180 countries around the world, including the United States, India, Vietnam and Bangladesh. An important requirement of organic farming is the use of biological methods in the fight against pests, natural fertilizers without pesticides, pesticides and chemicals. This method simultaneously improves the quality and ecological condition of the soil.

Currently, 6.8% of irrigated lands in Kashkadarya region have deteriorated. According to the analysis, the quality of soil quality in the region is determined by an average of 54 points. Despite such unfavorable weather conditions, in growing cotton, wheat, fruits, vegetables and melons, our people are growing high-quality products that are not inferior to any other region. This year, Chirakchi district alone is expected to export 100,000 tons of watermelons. Further improvement of export potential, improvement of the current ecological condition of typical gray soils of Kashkadarya region and implementation of appropriate agro-technical measures in areas where productivity is declining are important issues.

This year will focus on grain yield, grain quality and cotton yield, fiber quality. The experiments will be carried out by conducting field, laboratory, field-laboratory and development experiments in the conditions of typical irrigated gray soils of Chirakchi district of Kashkadarya region in the period of 2020-2023. Special attention is paid to the specific quality indicators of the industry, the varietal characteristics of crops, as well as the specifics of the autumn-winter, winter-early spring and summer climatic conditions.

The experiments will also be based on the recommended guidelines for the system of organic fertilizer for cotton in the irrigated lands of Kashkadarya region, practical manuals and new recommendations.To develop scientifically proven and growing technologies for the impact of organic biofertilizers on grain yield and grain quality

EXPERIMENTAL SCHEME (FOR WINTER WHEAT)

1. Plow (control)
2. Plow + rizakon-2
3. Dung (30t / ha)
4. Dung (30t / ha + rizakon-2)
5. Siderate (oil + green peas + barley)
6. Siderate (oilcake + green peas + barley + rhizome 2)

Experimental scheme for the development of technologies to scientifically prove the effect of organic biofertilizers on cotton yields and fiber quality (for cotton):

1. Plow (control)
2. Shudgor + fostim-3
3. Gung (30t / ha)

4. Gung (30t / ha + fostim-3)
5. Siderate (oil + green peas + barley)
6. Siderate (oilseed rape + green peas + barley + fostim-3)

New early ripening varieties of cotton-siderate (green gung), gung, rhizakom-2, fosstim-3, Bukhara-102, Namangan-77, Porloq-4, Bukhara-6 are among the varieties of cotton grown in the region and included in the state register. varieties are planted, in particular, the varieties of cereals typical of the selection of Uzbekistan and the Krasnodar Territory of Russia Zamin-1, Shavkat, Mars, Bobur, Tanyavaboshk; we use Vostok-55, Zafar or other varieties of barley, Raduga of oil radish and fosstim-2, rhizocom-3 bio-fertilizers developed by the Institute of Microbiology. Field, laboratory, field-laboratory and field experiments are carried out in the conditions of typical irrigated gray soils of Chirakchi district of Kashkadarya region. Particular attention is paid to the characteristics of the industry, the varietal characteristics of crops, as well as the characteristics of the autumn-winter, winter-early spring climatic conditions.

Particular attention is paid to the characteristics of the industry, the varietal characteristics of crops, as well as the characteristics of the autumn-winter, winter-early spring climatic conditions. Also, in the experiments, the recommended guidelines for the system of bio-fertilizers for cotton-grain-siderate (green dung), dung, rizakom-2, fosstim-3 in the irrigated lands of Kashkadarya region are based on practical guidelines and new recommendations. is obtained. The field experiments were carried out on the lands of the Ural Numon butcher's private enterprise of the Fayzulla Khojayev collective farm in the Chichichi district, where early-maturing cotton varieties Bukhara-6 were planted.

The advantage of Bukhara-6 variety is that it is resistant to drought and disease. Intermediate crops grown as organic fertilizers were planted between rows of cotton in the first decade of October, with 500-600 m3 of water per hectare and full germination. In spring, it is fed with nitrogen fertilizers at the rate of 60 kg per hectare. All experiments were performed on 100 sample plants in 3-4 repetitive field experiments. The number of bushes of plants was determined in the early spring and pre-harvest periods after grazing, depending on how they were grown during the growing season, and the average number of bushes per 1 m at a distance of 1 m was calculated per hectare. In the third decade of April, green biomass was added to the soil and driven away.

DISCUSSIONS AND RESULTS

Seeds were sown in the field at different times of April, and observations on its germination and growth are underway. Despite the fact that the air temperature in July is 40-43 C0, the height of the cotton is 60-70 cm and the number of budding plants is 20-25 and 5-6. The flowering rate of cotton is 50. -75% is calculated until the flower appears. The agro-physical and agrochemical properties of the soil are studied using the method of the Uzbek Cotton Research Institute (1981, 1985). Soil moisture is carried out by sowing the seeds, drying the soil obtained from the first irrigation of cotton before the last irrigation. For the analysis, odd returns were taken at a depth of 0–20, 20–40 cm from the point of each delyanka, and the volumetric mass of soil was taken from all variants before the first and last irrigation of the cotton in three turns.

Aggregate composition of soil 10.0; 7.0; 5.0; 3.0; 2.0; 1.0; 0.5; and 0.25 mm sieves. The purpose of laboratory analysis of soil samples taken from the study area in accordance with the Medical Protocol No. 271 No. 271, approved by the order of the Ministry of Health of the Republic of Uzbekistan dated December 25, 2017 № 777 , the amount of compounds such as fitor was determined. The soil solution is pH 7.63, NO3 349.3 mg / kg, NO2 1.49 mg / kg, chloride 170.0 mg / kg, fluorine 4.63 mg / kg. The study is ongoing.

CONCLUSION

In conclusion, it should be noted that organic farming is, in fact, a new form of return to the old classical farming. Today's demand is to create a systematic indicator of soil-bio-fertilizer-plant-ecologically clean products. Organic agriculture is a natural solution that preserves biodiversity, increases soil fertility and ensures human health without the use of environmentally harmful chemicals. Therefore, the use of organic farming methods is expected to improve the ecological situation and significantly increase productivity gives the result. Green biofertilizers applied to the soil as a bioenergetic material in the soil improve the nutrient regime in it, have a positive effect on the growth and development of cotton and wheat. Satisfaction of demand for nutrients of cotton and wheat during the season on the siderates allows to grow high yields and quality environmentally friendly products.

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