



INFLUENCE OF ORGANIC-MINERAL FERTILIZERS ON OIL CONTENT OF COTTON PLANT

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ABSTRACT

This article describes the effectiveness of the preparation and use of compost by mixing various organic wastes in order to improve soil fertility in the current state of local fertilizers. It is given when using various composts to reduce the specific gravity of the soil, increase porosity, active nitrogen, phosphorus and potassium in the soil in a certain amount, intensive growth and development of cotton and ensure high quality yields.

KEY WORDS: *compost, organo-mineral, waste, cotton, yield, oil content.*

INTRODUCTION

Agriculture is one of the major areas of the national economy, is of great importance in the country's economy, in improving the material well-being of the people.

Cotton is one of the most valuable raw materials for the production of industrial and food products. Raw cotton serves as a raw material for the cotton ginning industry, and cotton fiber is a semi-finished product for textile, knitwear, footwear, oil milling and many other branches of the light and food industries. From 1 ton of raw cotton, 320-340 kg of fiber, 560-580 kg of seeds are produced. From 340 kg of fiber, in turn, it is possible to produce 3500 m² of fabric, and from 580 kg of seeds - 112 kg of oil, 10 kg of soap, 270 kg of cake, 170 kg of husk and 8 kg of lint.

Oil is used to produce various types of refined oil for public consumption, and from unprocessed oil and its waste - glycerin and fatty acids, from which soap, washing powders, linoleum, insulating tapes, oilcloth, film, waterproof fabric, artificial leather and rubber are obtained.

An important indicator of soil fertility is its agrophysical properties. For example, the mechanical properties of the soil, structure, bulk density, porosity, water resistance, water permeability, and others. For the normal development of the root system of plants,

optimal metabolism, aeration and water properties of the soil are necessary.

It has been established that with sufficient provision of the arable layer of soil with moisture, air, heat and nutrients, an intensive passage of microbiological processes occurs. Also, under the influence of various factors, a peculiar change in the volumetric mass of the soil occurs.

On the basis of scientific research conducted in heavy loamy soils, N.A. Kachinsky [1. -p. 236-318] came to the conclusion that the productive capacity of soil fertility depends on its mechanical composition, that is, in most cases, in light loamy soils, the development of crops occurs intensively.

Numerous scientific studies have established that with the systematic application of organic fertilizers, intensive cultivation of the soil occurs, it is enriched with humus faster, its biological, physicochemical properties, water, air and food regimes improve [2. -p. 18; 3. -p. 67-70; 4. -p. 352-355].

Compost was applied on the soil (KR manure + sawdust). Under the influence of long-term use of compost, the physical properties of the soil have significantly improved. The water-retaining capacity increased, incl. according to available moisture for plants and matrix potential. The parameters of soil porosity have noticeably improved. The biological

properties of the soil have improved. As a result, these changes contributed to an increase in crop yields [5. -p. 535-539].

AIM

The use of organo-mineral compost has a positive effect on the agrophysical and agrochemical properties of the soil, and the yield and quality of crops, including cotton, also increase.

Composting of phosphogypsum with organic matter (manure, chicken manure, sawdust) was carried out in the following ratios:

1) N₂₀₀; P₁₄₀; K₁₀₀ (control); 2) NPK + 20 t/ha manure; 3) NPK + 20 t/ha compost - 2. Compost composition (rice and sawdust - 25%, manure - 25%, bird droppings - 35%, phosphogypsum - 15%).

The quantity and quality of agricultural products obtained depend on the doses and ratios of mineral fertilizers used in agriculture, especially nitrogen and phosphorus. For their rational use, it is necessary to know the content of humus and nutrients in the soil itself.

Results of the research. The study of the need of cotton for phosphorus nutrition showed the positive effect of phosphorus from the very beginning of seed germination.

Shallow application of phosphate fertilizers before or during sowing promotes the growth and development of cotton. In many experiments, plants lacking phosphorus before the appearance of the first pair of true leaves looked strongly oppressed, which adversely affected their further development. An early supply of even a very small amount of readily available phosphorus fertilizer is essential for the further growth of cotton.

Phosphorus nutrition against the background of sufficient nitrogen supply has a great influence on the growth of the cotton root system. A well-developed root system ensures faster plant growth and speeds up the development phases.

The need for phosphate fertilizers is increasing from year to year, despite the shortage of phosphorus ores.

The content of mobile phosphorus increases due to the increase in the application of organomineral fertilizers. Thus, the introduction of FG increased the

content of mobile phosphorus in the soil, which affected the growth, development and yield of cotton.

The quality of the crop is affected by the condition of phosphorus nutrition. Phosphorus is directly involved in the synthesis of amino acids, proteins, fats, starch, sugar and other compounds found in plants. With the direct influence of phosphorus, plants accumulate the energy necessary for synthesis. Phosphorus is a constituent of nucleic acids and cell nuclei. Its deficiency retards the development of plants. It has been established that the application of phosphate fertilizers accelerates flowering, fruit formation and maturation of bolls. This is of great practical importance, since favorable conditions are being created for the timely harvesting of raw cotton and preparing the soil for the coming year.

Under the influence of phosphorus fertilizers, plant roots develop better, penetrate deeper into the soil, due to which plants use moisture and nutrients more fully. Phosphorus is of great importance in metabolism. Its lack in the soil limits the use of nitrogen, so even excessive doses of nitrogen fertilizers with a lack of phosphorus do not give the desired effect.

Composting terms - 1, 15, 30, 60, 90 days. After each period, the samples were processed in the same way as before the laying of the experiment and mobile phosphorus was determined by colorimetric method.

Therefore, when studying the fixation of phosphorus in connection with the introduction of FG, we also monitored the exchange Ca. The results showed the following: in connection with the introduction of FG, the content of Ca increases in soils and sands. The greatest amount is fixed on the first day, and then gradually in small quantities.

If we compare the results of analysis in soils, we can see that in the same norms, the application of FG, the amount of Ca in soils is several times greater than in sands, which can be explained by the decomposition of Ca in the soil.

Thus, studies show that the stabilization of the calcium regime of irrigated soils by introducing FG is one of the essential factors in maintaining their fertility.

Our studies have established that heavy phosphogypsum in terms of mechanical composition contributes to: improving water-physical properties, increasing the productive capacity of soils;

- has a positive effect on the content of mobile phosphorus in the soil, improves the content of calcium,

which leads to the stabilization of the calcium regime of irrigated soils, which is one of the essential factors in maintaining fertility;

- the pH of the aqueous suspension improves, it becomes neutral or slightly alkaline and, finally, in the

application of organo-mineral fertilizers of 20 t / ha, favorable conditions are created for the growth and development of cotton crops during three to four years, which ultimately leads to an increase in yield raw cotton at 5-6 q/ha.

Variants	The weight of 1000 seeds, gr	Oil content of 1 ton of seeds, kg
N ₂₀₀ ; P ₁₄₀ ; K ₁₀₀ (control);	110	112
NPK + 20 t/ha manure	113	115
NPK + 20 t/ha compost	117	118

CONCLUSION

Under the influence of organo-mineral fertilizers, the oil content changes. In the variant where compost was used at a rate of 20 t/ha, the oil content increased to 118 kg in 1 ton of cotton seeds. This is due to the presence of calcium in the composition of organo-mineral fertilizers.

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