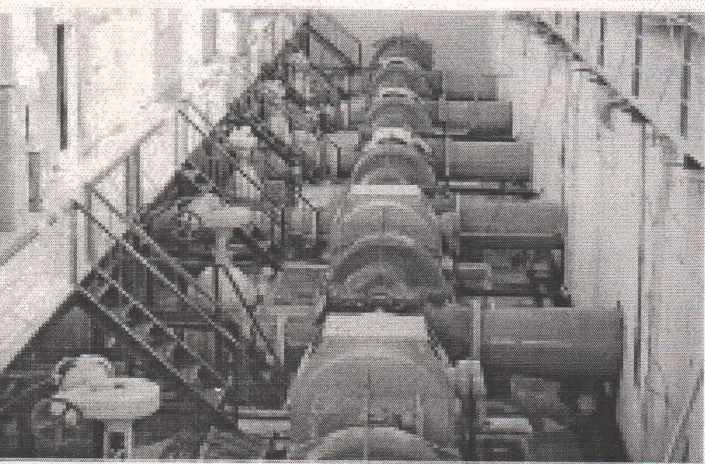
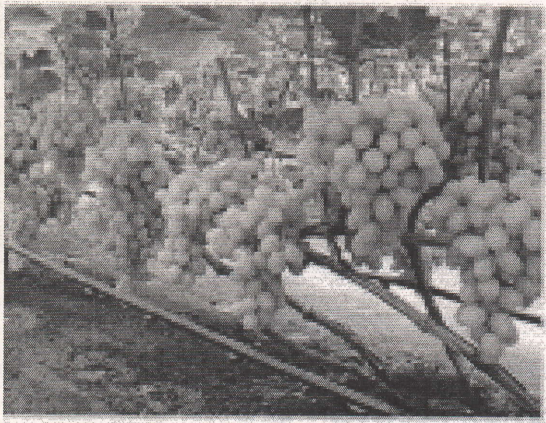


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MIGRATION OF ELEMENTS IN THE SYSTEM "SOIL-WATER-PLANT" AFTER ELECTRIC INFLUENCE

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Abstract

In the article, one of the most important problems in agriculture is the development and implementation of new ways to increase the productivity of industrial enterprises. The study should study the anthropogenic impact on the soil-plant-environment system and not have negative environmental consequences. On irrigated soils there is a significant reduction in plant nutrients (nitrogen, phosphorus, potassium), insufficient use of scientifically based technologies for the use of organic and mineral fertilizers; the increase in the cost and cost of fertilizers (phosphorus and potassium). Investigation of the influence of electrical processing on the basic electro physical, chemical, physical and mechanical properties of cotton fields. The effectiveness of the electrochemical treatment of the transported phosphorus in the soil (horizon 0-30 cm). Control of absorption forms of phosphorus in electric processing options.

Key words: soil, crop rotation, vegetation, electrical conductivity, resistance, humus, mechanical composition,

Introduction. Currently, one of the most important problems in agriculture is the development and implementation of new ways to increase the productivity of industrial plants. The formation of highly productive agricultural production, increasing its efficiency, sustainability and stability should be based on the rational use of available energy and material and technical resources. At the same time, the anthropogenic impact on the system "soil - plant - environment" should be selective and not accompanied by negative environmental consequences. The high rates of chemicalization of agricultural production, in particular cotton growing, determined the pace of scientific and technical support, the level of qualifications and technological discipline of producers and went beyond the scope of expediency. At relatively low growth rates of gross agricultural output, the specific consumption of energy resources is increasing.

Plant organisms, similar to other living systems, obey the physicochemical laws of the conversion of substances and energy, and their life features are specific to the structure and methods of interaction with the environment and primarily with water and soil.

Further development of agricultural production in the republic will be determined to a large extent, along with economic, organizational and other measures, scientifically-based regulation of soil fertility in order to increase its productivity.

Irrigated soils are the most intensively used lands, the main crops are grown on them, and the bulk of crop production is obtained. Therefore, the first task requiring close attention as agricultural research institutions and production specialists is to solve the problems of maintaining and improving the fertility of irrigated soils. Along with this, there is a significant decrease in the content of the main plant nutrition elements (nitrogen, phosphorus, potassium) in irrigated soils, on the one hand, as a result of insufficient implementation of evidence-based technologies for the use of organic and mineral fertilizers, and, on the other hand, as a result of insufficient production (phosphorus and potash) and increasing the cost of mineral fertilizers. In addition, another cause of nutrient deficiency in irrigated soils is the irreversible removal of nutrients (including trace elements) of nutrition and health (for example, selenium) by crops, which affects the productivity of soils and the

economic efficiency of agricultural production.

The plant needs all the elements of mineral nutrition. In the absence or lack of any of them, metabolic processes are disturbed, growth and development are delayed, which ultimately leads to a decrease in yield and deterioration of its quality. A huge role is played by the level of nutrition and the ratio between the individual elements that exists in the soil, in mineral fertilizers. As a result of the studies, a positive effect of electric processing on the cotton yield and the quality of the raw cotton crop on the soil microflora was revealed.

In this regard, the need arose for a more complete study of the influence of various types of electrical treatment of soil, seeds and plants on the basic agrochemical and chemical properties of the soil, the transformation and migration of elements and substances in it in order to create the optimal technology for the electrical treatment of seeds, soil and crops.

Methods

The purpose of the work is to study the effect of various types of electric processing on the agrochemical and chemical and microbiological properties of the soil under cotton and steaming soil. To achieve this goal, the following tasks:

- To study the effect of electric processing on the content of gross forms of nutrients (macro- and microelements) in the soil under cotton;
- To study the effect of electric processing on the basic electrophysical, chemical, physical and

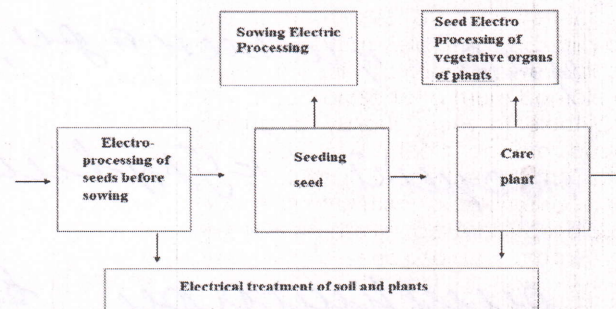


Fig. 1. The compatibility of the electrical treatment of soil, seeds and plants with agricultural methods of sowing seeds and caring for the growth and development of plants

mechanical properties of the soil under cotton (electrical conductivity, resistance, humus, mechanical composition, salinization, carbonates, gypsum, absorbed substrates, + etc.).

The object of research is the old-irrigated typical serozem of the experimental plot of the Tashkent Agrarian University, as well as land plots of various farms of the Republic.

Results. To achieve the goals and objectives of the research, small-scale field experiments will be laid down according to two schemes. The repetition of experiments is 4-fold. The size of the plots is $7.2 \times 8 = 57.6$ m². Test No. 1 was carried out against the background of N200 P1 40 K100. Experience No. 2 without fertilizers. Before setting up the experiment and at the end of the vegetation of plants, soil samples are taken from each option from depths of 0-30, 30-50, 50-75 and 75-100 cm to establish the initial and final state of the agrochemical and chemical properties of the soil. After each electric treatment, after 7, 15 and 30 days, soil samples are taken from the arable layer of soil to determine the mobile forms of macro - microelements.

Effect of electric processing the content of mobile phosphorus in the soil (in the horizon of 0-30 cm) showed that in variants with electric processing the content of assailable forms of phosphorus was 24.1-37.7 mg / kg against 23.3-25.2 mg / kg in the control variants. In addition, the content of exchangeable and water-soluble potassium was also significantly higher than 370-445 mg / kg against 310-345 mg / kg in the control variants. It should be noted that according to the results of completing analyzes of mobile forms of trace

elements in the soil, a significant increase in the content of the latter is also observed under the influence of electric treatment. Thus, the electric treatment of soil and plants positively affects the content of assailable forms of nitrogen, phosphorus and potassium in the soil, which contributes to the creation of a favorable diet for cotton during the growing season.

Conclusion

1. In the future, the most effective combination of different types and terms of electro technological processing of soil and cotton plants will be determined, providing optimal nutritional conditions in the soil for normal cotton growth and development and increasing soil productivity, on the main agrochemical and chemical properties of soils, the nature of the migration of chemical elements and substances in soil.

2. In addition, the amount of exchangeable and water-soluble potassium increases in control variants. Based on the analysis of mobile forms of trace elements in the soil, there is a significant increase in its content under the influence of electrical treatment. Thus, the cultivation of soil and power plants positively affects the absorption of nitrogen, phosphorus and potassium in the soil, thereby contributing to the creation of a favorable diet for cotton during the growing season. In the future, the most effective combination of various types and terms of electro technical processing of soil and cotton will be revealed, which will provide optimal soil nutrition conditions for normal soil growth and development and increase soil fertility, basic agrochemical and chemical properties of the soil, and chemical elements and the nature of the migration of matter into the soil is being investigated.

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