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## **DETERMINATION OF PHOSPHORUS COMPOUND IN THE MEDIA OF BACTERIA CULTIVATION**

Microorganisms are an important part of the soil formation process and a link that provides the ecological balance of any soil ecosystem. They have a major role in the transformation of plant residues, nutrient elements, the formation of humus, etc. Due to the activity of soil microorganisms, nitrogen compounds, mobile forms of phosphorus and potassium accumulate in the soil [3].

One of the main elements of plant nutrition is phosphorus. Proper use of it accelerates the growth and development of plants, increases the yield and quality of agricultural products. The introduction of phosphate fertilizers increases the content of starch in potato tubers, positively affects the accumulation of sugar in sugar beet, and also plays a major role in the processes of energy metabolism, reproduction, etc. However, mineral fertilizers change the conditions for the existence of soil microorganisms [2].

The purpose of this work was to find the conditions for determining the content of phosphate in different environments of cultivation of bacteria involved in soil formation. Ashbee, Zengen and meat-pepton broth (MPB), prepared from beef and tendon, as well as phosphate fertilizers phosphate flour and superphosphate, were used.

The environment of Ashby as a source of phosphorus contained  $K_2HPO_4$  ( $Na_2HPO_4$ ) at concentrations of 0.22 g/l and 0.44 g/l. In the Zengen environment, phosphate fertilizers were introduced at concentrations of 5 g/l and 10 g/l [1].

In the environments of Ashby and Zengen, the phosphate ion content was determined by the formation of a yellow phosphomolybdenum complex (PMC) according to the known Osmond and Deniz method without probabilization. The

control was the environment without bacteria. The study of the effect of superphosphate on the accumulation of biomass by bacteria *Bacillus brevis* B-14 V and *Bacillus subtilis* BKM B-428 in the Zengen medium showed that the concentration of 5 g / l, which producers usually recommend to observe, slightly stimulated the growth of the studied cultures, and twice higher (10 g / l) had an inhibitory effect on the growth of bacteria of the genus *Bacillus* by 26-28% [3].

The color and turbidity of the medium depend on the method of preparation and the length of storage of MPB. Therefore, such samples required sample preparation. It is expedient to determine the content of phosphate for the formation of blue PMC. As a reducing agent, 10% solution of ascorbic acid was used. The composition and, accordingly, the color of the blue PMC depends on the chosen method of mineralization of the MPB [4].

Thus, an important role in the transformation of organic matter of the soil and the creation of the prerequisites for its fertility belongs to soil microorganisms which are an extremely important factor in the formation of humus, as well as its decomposition. The presence in the soil ecosystems of a wide variety of microorganisms, which differ in biological and biochemical specificity, causes their enormous importance in the most complex processes occurring in the soil.

In the course of my research, the conditions for determining the content of phosphate in different environments of cultivation of bacteria involved in soil formation were selected Ashbee, Zengen and meat-pepton broth (MPB).

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