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Table of Contents

ORAL PRESENTATIONS

Change Of Soil Phosphatase Activity During Inoculation Of Sugar Beet Seeds By Polymycobacterium And Agrofil

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Abstract

Enzymes of the soil, including phosphatase, are the product of the metabolism of soil biocenosis. [1]. Under the influence of mineral fertilizers, pesticides, weather conditions, the microflora and the enzymatic activity of the soil changes, that accurately reflects the biological properties of the soil and their changes under the influence of anthropogenic factors [1]. As a result of long-term agricultural production, the biologically valuable microflora of the soil has been decreased. The coefficient of phosphorus use is no more than 0,60. As a result of the facts meaned above a number of mineral phosphorus insoluble in soil solution and organic phosphorus in different soils5-24 t / ha in terms of P_2O_5 has been accumulated. To reduce the anthropogenic impact of pesticides, mineral fertilizers and soil phosphorus solumobilization, the phosphate mobilizing bacterial drug Polymixobacterium - based on strain of bacteria Bacillus polymixa strain - KB [3], Agrofil - a nitrogen fixing agent based on the strain of associative bacteria Agrobacterium radiobacter 10 that inoculates seeds of sugar hybrids beets have been used. The research was conducted on the gray forest oxidized dust-soils alkaline soils at the Vinnytsia SSGDS and the research field of VNAU. Determination of phosphatase activity was carried out by the method of I. T. Geller and K. E. Ginzburg. The research was carried out in 2000-2018 at various organoleptic mineral feeds (without fertilizers, N_{160} P_{120} K_{160} and N_{160} P_{120} K_{160} + Manure, 32 t / ha) and in different weather conditions. During inoculation with Polymycobacterin, an increase in the phosphatase activity of the soil in the rhizosphere of sugar beet root crops was found to be 15-38% ($P>0.95$) in comparison with control. When co-inoculated with Polymycobacterin and Agrofil, the soil phosphatase activity in the root crop rotation was increased by 21-46% ($P>0.95$) with a significant trend increase in phosphatase activity during vegetation in both experimental variants.

Keywords: phosphatase, sugar beet, phosphate solumobilization, nitrogen fixing.

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