

AZOTOBACTER CHROOCOCCUM BIOLOGICAL PREPARATIONS INFLUENCE ON THE PLANTS GROWTH

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Introduction. Bacterial species *Azotobacter chroococcum* is a typical member of free-living soil microorganisms, that are nitrogen fixers. They have a pronounced antagonistic activity against wide range of phytopathogenic microorganisms, and are characterized by a number of positive effects on the plants development. Biological products derived from this bacteria designed to improve crop yields and increase plants resistance to various diseases. Such preparations are an integral part of modern agricultural activities, agrobiotechnology and microbiology. These preparations are used to increase phytobacteriology nitrogen-fixing symbiosis capacity implementation in agrocenoses.

Aim. The aim is to study the effect of biologicals containing *Azotobacter chroococcum* on the pumpkin plants growth parameters.

Materials and methods. We used a biopreparation *Azotophyte-r*® (manufacturer: private enterprise "BTU-Center" Ukraine, Vinnitsa region, Ladyzhyn) and studied the effect of *Azotobacter chroococcum* pure cultures, isolated from it, on pumpkin variety Hokkaido seeds germination, germination energy and growth of seedlings. Research methods – microbiological, laboratory agrobiological and statistical.

Results and discussion. Object of the study is pumpkin variety Hokkaido. Pumpkin flesh has a stable consistency, contains a large amount of beta-carotene (provitamin A), vitamins B1, B2, B6, C, E, folic acid, magnesium, iron and phosphorus. Biopreparation *Azotophyte-r*® contains *Azotobacter chroococcum* cells and micro - and macronutrients, enzymes, amino acids, vitamins, phytohormones. To biologicals obtaining *Azotobacter* culture was grown on solid Ashby medium, over 96 h at $(29\pm 1)^{\circ}\text{C}$, pH 6,8-7,0. The living culture suspension was standardized by the viable bacteria number. Germination energy and seed germination, seedlings mass and linear growth parameters were calculated according to GOST 12038-84.

Conclusion. The plants nitrogen nutrition efficiency is due to forms of nitrogen compounds and the conditions of their application. Currently to enrich the soil with nitrogen and increase plant yield new harmless to human health and environment biological preparations are used. The results obtained in the study can be used for the bio-fertilizers and biologicals quality improving in olericulture.