

THE PERSPECTIVE OF THE CREATION OF BIOPREPARATION OF COMPLEX ACTION ON THE BASIS OF THE *LACTOBACILLUS PLANTARUM*

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In terms of modern agricultural biotechnologies there exists an interest to creation biopreparations of complex action that have several kinds of useful activity (antibacterial, growth-stimulating, fungicidal, positive effects on indicators of soil fertility) (Siraeva Z., 2012). Moreover, an important aspect of developing bacterial biopreparations for plant protection is optimization of nutrient medium, which will allow the strain show the most efficient growth-stimulating activity for plant and antagonistic effect against the phytopathogens.

The aim was to investigation the possibility of using *Lactobacillus plantarum* ONU 12 for creation bacterial biopreparation of plant growth stimulation and their protection from bacterial cancer.

There was found a positive effect of the strain *L. plantarum* ONU 12 on morpho- rhisohenesis of cruciferous and cereal seeds. Compared with negative control - soaking seeds in water, it improved plants vegetation that was equal to 13.0-42.7% for the cress salad and 13.0-35.3% for wheat. Overall processing lactobacilli most positively reflected on the length of the roots of wheat germ: from 23.7 to 34.2%. In our experiments we have identified the optimal composition of growth media for cultivation *L. plantarum* ONU 12 to stimulate the growth of the studied families of plants. If *L. plantarum* ONU 12 were cultivated in a nutrient medium which composed of: yeast extract, MPB, peptone, glucose, casein, MgSO₄, MnSO₄ and further processed of wheat by suspension of lactobacilli, there was observed stimulating activity of the strain on the development of plants. The length of the roots, compared with seeds that grew without handling of *L. plantarum* ONU 12 was higher on 34.2% for the stems 35.3%. When *L. plantarum* ONU 12 was cultured in a nutrient medium which composed of: yeast extract, glucose, casein, citrate, ammonium, CH₃COONa, MgSO₄, MnSO₄, FeSO₄ and further processed of cress salads seeds by suspension of lactobacilli were found stimulating activity of the strain on the development of plants. The length of the roots, compared with seeds that grew without handling of *L. plantarum* ONU 12 was higher on 34.5%, for stems on 42.7% The composition of growth media was selected (3, 927, 1180, 1180M), at which when grown lactobacilli showed more effective stimulating and antagonistic action as compared with the use of more expensive substrate (MRS). Their using will save on costs when receiving biopreparations. To identify antohonistic properties of *L. plantarum* ONU 12 *in vitro*, the well diffusion method was used (Limanska *et al.*, 2012). The high antagonistic activity of the strain *L. plantarum* ONU 12 *in vitro* against 7 strains of phytopatogenic microorganisms, and also 100% inhibitory activity against *Rhizobium radiobacter* C58 *in vivo* have been revealed.

It was found to *L. plantarum* ONU 12 actively rival with the *R. radiobacter* PYZ for adhesion, which is highly promising feature to create microbial biopreparation of plant protection.