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## Biotechnological method promoting growth of aspen microclonal transplants

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Due to limited natural resources in Belarus plantation silviculture appears a promising trend of forest management at specially allocated areas. Laying out massive plantations requires sufficient amount of planting stock. The optimal solution of this problem envisages engineering microclonal cultures of valuable wood varieties and large-scale production of derived plantlets. Application of microbial preparations accelerates adaptation of microclonal transplants to non-sterile soil environment. Introduction of eco-friendly low-toxic biological products will allow saving 30-40% of mineral fertilizers and chemical agents. Aim of the study was to assess efficiency of microbial preparations Fruitin (based on antagonistic strain *Bacillus subtilis*) and Gordebac (based on nitrogen-fixing and phosphate-mobilizing *Enterobacter* strains) to stimulate growth of microclonal aspen cultures. Introduction of rifampicin-resistant rhizobacteria into rhizosphere of aspen microclonal variants was accomplished by watering regenerants transferred to peat-sand-prelate substrate and transplanted to nursery. Treatment of microclonally propagated aspen plantlets with 2% Fruitin and Gordebac concentrations resulted by 2 months in significant rise of survival rate and stem height by 2.4-times and 20%, respectively, as compared to the control. Upon 4 months clear distinctions in survival rate (4.4 times on the average) remained evident/Increased growth rate of aspen microclonal transplants promoted by microbial preparations enables to reduce cultivation costs and yield standard planting material in shorter terms.

### Biography

Kolomiets E I is the Director of Institute of Microbiology, National Academy of Sciences, Minsk, Belarus. She completed her PhD in microbiology for thesis on Penicillium growth and protein accumulation (1980). She is investigating interaction mechanisms of antagonistic microbial cultures with plant and animal pathogens and developing technologies of producing biological agents showing phytoprotective, growth-promoting and immune-stimulating effects. She is the author of over 350 publications, including 2 monographs and 12 patents. In recent years she completed development of 10 valuable biological products.

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