Applied Biochemistry and Microbiology 2006 vol.42 N1, pages 77-83

# Biological preparations with different mechanisms of action for protecting potato against fungal diseases

Kulikov S., Alimova F., Zakharova N., Nemtsev S., Varlamov V.
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

## Abstract

Mycological analysis throughout the vegetation period of potato (Solanum tuberosum) made it possible to study in detail the structure of the micromycete community, to determine typical dominant (frequency, more than 60%), typical common (frequency, 30 to 60%), typical rare (frequency, 10 to 30%), and casual (frequency, less than 10%) species and to estimate changes in the microorganism community caused by plant protection preparations with different mechanisms of action. It was shown that, as a result of occurrence of resistant forms, synthetic preparations against fungal pathogens of potato (such as TMTD, Ridomil gold MC, and Cupricol) were only slightly more effective than biological preparations (Trichodermin and AgroChit), with the former considerably changing the natural saprophytic mycological community. An increase in the soil pool of Trichoderma harzianum as a result of application of a biological preparation based on this antagonistic fungus correlated with its effectiveness against the soil pathogen Fusarium sp., which causes root rot. A chitosan-based elicitor preparation more effectively suppressed the development of early (Alternaria sp. and Macrosporium sp.) and late (Phytophthora sp.) blighting of leaves and had a weaker effect on soil microflora. © MAIK "Nauka/Interperiodica", 2006.

http://dx.doi.org/10.1134/S0003683806010121