



P208

**INTERACTION BETWEEN POTATO PROTEINS AND QUARANTINE BACTERIA *CLAVIBACTER MICHIGANENSIS* SUBSP. *SEPEDONICUS*.**

**Włodzimierz Przewodowski PhD, Agnieszka Przewodowska PhD**

*Plant Breeding and Acclimatization Institute – National Research Institute, Department of Potato Protection and seed Science at Bonin, Poland*  
e-mail: a.przewodowska@ihar.edu.pl

Potato, as a cultivated plant is exposed to a number of troublesome diseases. One of them is the potato ring rot caused by the quarantine bacterium *Clavibacter michiganensis* subsp. *sepedonicus* (Cms). This pathogen is one of the most dangerous and the most troublesome pathogens of potato plant. Significant economic losses due to the ring rot disease results from the direct yield losses but mostly from the sanctions imposed on potato producers in case of disease detection. In addition, this bacterium is a pathogen which is particularly difficult in controlling and detecting. To date, there is no chemical or biological method for the direct control of Cms in potato tissues.

This paper reports on the proteins isolated from potato plants with antibiotic activity against Cms. The cell walls of potato tubers contain peptides with antimicrobial activity. Antimicrobial peptides can be relatively easily isolated from the cell walls of the potato and potato pulp. Here we show that proteins isolated from varieties tolerant to Cms have the ability to inhibit growth of this bacterium. Proteins isolated from varieties susceptible to infection by Cms did not have such properties.

We also isolated from cell wall some proteins having an opposite effect on Cms than antimicrobial peptides. Preliminary studies showed that this protein accelerates the Cms growth rate and increases the number of Cms colonies on growth media. Potentially, such a protein can be used to accelerate the growth of Cms on media to increase the sensitivity of detection of Cms.