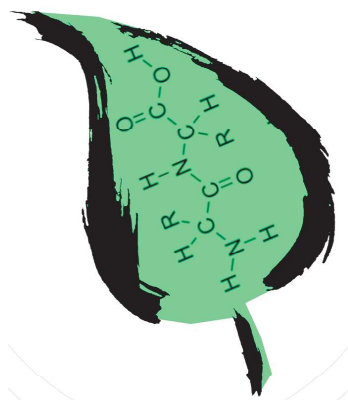




# INPPPO2018

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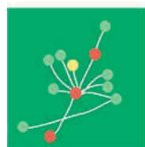
### Book of Abstracts




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Abstract no. 35 - Session VIII - Submitting author's email: [r.lebecka@ihar.edu.pl](mailto:r.lebecka@ihar.edu.pl)

## Differential proteome analysis, in potato tubers wound-inoculated with bacteria *Dickeya solani*, in selected cultivars with different level of resistance.

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### Abstract

*Dickeya solani* belongs to a group of pectinolytic bacteria which can cause two diseases of potato: blackleg and soft rot. Development of the symptoms of rotting in potato tubers infected with bacteria is favoured by the environmental conditions, mostly temperature and humidity, which lead to low oxygen content. The goal of the study was to compare potato cultivars and clones with different level of tuber resistance to *D. solani* using differential proteomics. Based on the phenotypic evaluation two most resistant to tubers soft rot and two significantly less resistant cultivars, out of 25 potato cultivars originating from a half-sib family, two diploid hybrids of *Solanum* of different level of resistance, and very susceptible potato cultivar, were selected for the experiment. Proteins were extracted from a fragment of tuber tissue cut out from potato tubers 8 or 48 hours after an inoculation with the bacterial suspension followed by proteomic analysis. Experimental design included two independent biological replicates prepared of protein extracts from tubers of each of seven cultivars/clones. From two to four technical replicates per sample were analysed to minimize technical variability. Mock-inoculated potato tubers were used as a control. Primary principal component analysis for resistant *versus* susceptible cultivars 8 and 48 hours post wound-inoculation showed differences in higher quantity of proteinase inhibitor type II, chymotrypsin inhibitor I, probable inactive patatin-3-Kuras 1, proteinase inhibitor PTI (only after 8 hours), regardless of an application with bacteria or water. The differences among resistant and susceptible cultivars inoculated with bacteria 8 hours post inoculation resulted additionally in higher expression of proteinase inhibitor PTI and thamine thiazole synthase (not found significant in mock-inoculated tubers). Higher expression of peroxidases have been observed in resistant cultivars 48 hours post inoculation with *D. solani*.

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