

# The Oxidative Processes Induced in Cell Suspensions of *Solanum* Species by Culture Filtrate of *Phytophthora infestans*

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*Solanum* genotypes that differ in the level of polygenic resistance to the oomycete plant pathogen *Phytophthora infestans* were studied for their oxidative response to culture filtrate (CF) of the pathogen. Reactive oxygen species (ROS) production, peroxidase activity and lipid peroxidation have been studied in the CF-treated cell suspensions derived from leaves of the resistant *S. nigrum* (nonhost) and *S. tuberosum* cv. Bzura as well as from the susceptible *S. tuberosum* cv. Tarpan and clone H-8105. In both the resistant and susceptible cells the CF induced similar processes, but these varied with respect to the kinetics and intensity. In all cells probably the membrane-bound NADPH oxidase, was responsible for the ROS production. This process was more intensive and prolonged in the susceptible cells than in the resistant ones. The CF treatment slightly affected peroxidase activity in all cells studied. Lipid peroxidation that occurred as a consequence of the ROS accumulation was pronounced mainly in the susceptible cells. We suggest that lack of stringent control of the oxidative processes and sensitivity to the pathogen toxins may be decisive for limited polygenic resistance in potato.