

EXPRESSIONS OF SOME DEFENSE GENES AGAINST *Ralstonia solanacearum* IN SUSCEPTIBLE AND RESISTANT POTATO GENOTYPES UNDER *IN Vitro* CONDITIONS *

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Abstract

Bacterial wilt of potato, a sever and devastating disease caused by *Ralstonia solanacearum* occurs in tropical and subtropical area. Using resistant cultivars is important in control of this disease. Discovery of plant resistant mechanisms and induced plant responses against pathogen may provide valuable information for improved resistant cultivars. In this direction, the expression pattern of some important defense genes against *R. solanacearum* in potato commercial cultivars like, Marfona (susceptible), Els (tolerant) of *Solanum tuberosum* and resistant genotype of *Solanum phureja* was evaluated over times after inoculation. The level of expression of evaluated defense genes including Chitinase A, Chitinase B, Glucanase, PR-10a in the resistant genotype of *S. phureja* was higher than the other two commercial cultivars. Results show expression of Chitinase A and PR-10a in *S. phureja* and tolerant cultivar, Els have increase compared to susceptible cultivar Marfona. Expression of defense protein and antimicrobial compounds were also evaluated based on the growth rate of the fungus *Fusarium solani* on culture media containing extract of induced plants. The growth rate of the fungus decreased on the culture containing extracts from the resistant genotype, compared that of susceptible cultivar.

Keywords: *Ralstonia solanacearum*, Pathogenesis Related Protein, Disease resistance, Potato, *Solanum tuberosum*, *Solanum phureja*.

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