

***OIDIUM NEOLYCOPERSICI* INFECTION INDUCES DIFFERENT RESPONSES ON RESISTANT AND SUSCEPTIBLE TOMATO PLANTS**

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Oidium neolyopersici is a highly widespread fungus which infects tomatoes, causing powdery white lesions on leaves. Severe infections lead to leaf chlorosis and premature senescence that severely affect plant yield. Resistance to infection by *O. neolyopersici* has been found in *Lycopersicon esculentum* var. *cerasiforme* (R-28) and appears to be due to a single recessive *ol-2* gene (Ciccarese et al., 1998). The recessive *ol-2* gene, confers race-non-specific resistance via papilla formation, a non HR-based mechanism (Bai et al. 2005). Very little information is available regarding the involvement of biochemical responses of R-28 plants to *O. neolyopersici*. Therefore, in this work different defence mechanisms have been studied during the infection of *O. neolyopersici* on the susceptible (Super Marmande -SM) and R-28 tomato plants. The analyses have been conducted on R28 and SM plants at different times after inoculation (4-24-48-72 hpi). Data obtained show different trends in various biochemical parameters. In particular in SM plants a decrease in ascorbate (ASC) content, ascorbate peroxidase (APX) and total peroxidase (POD) activities occurs underlying that a general decrease of plant defence in response to fungus penetration could be responsible of the symptoms of the disease. On the other hand, R28 plants show a peak in hydrogen peroxide production that is parallel to the arrest of fungus penetration (4-24 hpi). At the same time an increase in ASC, APX and POD occurs. Moreover, after 48-72 hpi a higher content of total antioxidant power and phenolic compounds is also evident.

Changes in redox metabolites and enzymes, in relation to the resistance response of R-28 tomato plants, will be discussed.

REFERENCES

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