

## Oral presentation

### Insights into differential responses of olive cultivars to *Xylella fastidiosa* infections

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**Abstract:** *Xylella fastidiosa* strain De Donno causes severe symptoms of desiccation on the susceptible cultivars Ogliarola salentina and Cellina di Nardò. In the *Xylella*-ravaged olive groves, survivor plants of cv Leccino have been identified and monitored since the beginning of epidemic spread of *X. fastidiosa* in Apulia (southern Italy). Studies in field-grown plants (Giampetruzzi et al., 2016) suggest that the resistance of these two cultivars relies on two pillars: a lower bacteria population size compared with that of susceptible cultivars and, limited to Leccino, a differential gene expression response that involves leucine rich receptor-like kinases (LRR-RLKs). Successive studies with artificially infected olives under controlled conditions, showed that the same host responses occurred when plants of the cvs Cellina di Nardò and Leccino were inoculated with the strain CO33, taxonomically related to subsp. *sandyi*. Consistent with the previous data, transcripts of two LRR-RLKs, orthologous to At1g35710 and At4g08850, which are reported to regulate cell wall damage response in *Arabidopsis thaliana* (Van der Does et al., 2017), were found overexpressed in Leccino. Moreover, quantitative PCR assays targeting the At1g35710 olive orthologous gene showed an increased expression in different olive cultivars artificially inoculated under controlled conditions. Besides these molecular studies, the bacterial population sizes were estimated in different tissues of the infected plants: leaves, young (Ø?5 mm) and hardwood cuttings (Ø?5 mm -?1 cm), and in tissues collected from scions of different cultivars grafted onto the same rootstock. From these tests, further evidence on the resistance of Leccino and FS17 were collected, with tissues of these cvs harbouring lower bacterial titer than Ogliarola salentina (this was particularly evident in the leaves of the cv Leccino) and not showing typical and severe desiccation phenomena, even when branches of these cvs were co-grafted on the same rootstocks with scions of Ogliarola salentina showing severe dieback. Further data on these double grafted olives and genetic achievements will be presented.

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