1st Annual Conference of the EuroXanth COST Action

Integrating Science on *Xanthomonadaceae* for integrated plant disease management in Europe

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Evaluating biocontrol of *Xylella fastidiosa* disease in olive with a beneficial endophyte

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Xylella fastidiosa (*Xf*) subsp. *pauca* phylotype ST53 is responsible for a devastating disease on olive crops, in the southern area of Apulia (Italy). Despite the vast literature available on *Xf*-host relationships, scarce and barely recent efforts have been made to investigate the potential role of microbial interactions on the disease phenotype of *Xf*-infected plants. In the larger context of an ongoing characterization of the microbial community inhabiting the vascular endosphere of olive cultivars showing different susceptibility to *Xf* infection, the present study is attempting the identification of a bacterial endosymbiont that may play an antagonistic role against *Xf* disease progress. Recently, the plant growth-promoting rhizobacterium *Paraburkholderia phytofirmans* PsJN (*Pp*), known to improve plant tolerance to abiotic stresses, has been found capable of mediating resistance mechanisms against virulent bacteria. On this premise we started to evaluate the potential for using *Pp* in a biocontrol strategy, to reduce symptom severity in *Xf* ST53-infected olives. Endophyte behaviour in olive is still poorly characterized, and recent studies reported that several symbionts isolated from xylem tissues in woody crops may scarcely survive and move beyond the point of inoculation when artificially re-introduced. Here we report the successful attempt of *P. phytofirmans* strain PsJN to survive for a long-term, to reach relevant population sizes and actively move in the olive vascular system. Having established its efficient endophytic colonization in olive, further experiments are now underway to investigate if *Pp* could affect the growth of *Xf* ST53 in artificial conditions or inhibit the appearance of symptoms in olive or other susceptible indicator plants.