



Pathogenicity of *Xylella fastidiosa* subsp. *multiplex* isolates from Alicante outbreak (mainland Spain) on different hosts

Domingo-Calap ML¹, Aure CM¹, Navarro-Herrero I¹, Simó-Esquivel M¹, Biosca EG², Román-Écija M³, Landa BB³, Saponari M⁴, Marco-Noales E¹

¹ Centro de Protección Vegetal y Biotecnología. Instituto Valenciano de Investigaciones Agrarias (IVIA), 46113 Moncada (Valencia), Spain

² University of Valencia, 46100 Burjassot (Valencia), Spain

³ Instituto de Agricultura Sostenible (IAS), Consejo Superior de Investigaciones Científicas (CSIC), Avda. Menéndez Pidal s/n, 14004 Córdoba, Spain

⁴ National Research Council (CNR), Institute for Sustainable Plant Protection (IPSP), 70126 Bari, Italy

In the outbreak of *Xylella fastidiosa* in the province of Alicante (mainland Spain), all isolates characterized so far belong to subsp. *multiplex* and ST6, and the main host is *Prunus dulcis*. Two different strains (IVIA 5901 and ESVL), isolated from almond trees in two municipalities of the Demarcated Area, were used to carry out pathogenicity tests on different plant species. The Italian strain De Donno (subsp. *pauca*, ST53) and the Spanish strain IVIA 5770 (subsp. *fastidiosa*, ST1) were also included. Five cultivars of *Prunus dulcis*, eight of *Olea europaea*, four of *Vitis vinifera*, *Citrus x limon*, *Citrus x sinensis*, *Citrus reticulata*, *Diospyros kaki*, *Eriobotrya japonica*, and the forest species *Quercus suber* and *Q. ilex* were challenged. A total of 35 plants for each species or cultivar were inoculated. At 1, 3, 6, 12 and 18 months post-inoculation (mpi) plants were sampled and analyzed by real-time PCR, to assess bacterial movement over time. The results show that, in general, no clear pattern of movement was found in the different plant species. Interestingly, in olive and grape, regardless the cultivar, the subsp. *multiplex* ST6 Alicante isolates were hardly detected from 12 mpi onwards, i.e. the systemic movement was very slow. In fact, they were only detected in less than 4% of the infected plants and with very late Cq values. In citrus plants, detection of these isolates failed since 3 mpi, as occurred in kaki and loquat trees. As for *Quercus* species, the detection rate was higher in *Q. suber* than in *Q. ilex*. Only in almond and cork oak trees, leaf scorch symptoms could be correlated with the presence of *X. fastidiosa* subsp. *multiplex*. Moreover, in these cases the pathogen was re-isolated. The timing and the level of detection for all the strains throughout the trial obtained so far are presented.

Keywords: *multiplex*, pathogenicity, hosts