Proceedings of the LXVI SIGA Annual Congress
Bari, 5/8 September, 2023
ISBN: **978-88-944843-4-2**

Poster Communication Abstract – 6.32

EVALUATION OF MINOR APULIAN OLIVE GENOTYPES FOR RESISTANCE TO XYLELLA FASTIDIOSA

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olive, Apulia, resiliance

The spread of olive quick decline syndrome (OQDS) caused by the bacterium Xylella fastidiosa subsp. pauca is threatening Apulia's olive resources, damaging the regional economy and landscape heritage. To reduce the impact of the disease, a breeding program has been launched in 2017 aimed at identifying new sources of resistance to expand the range of varieties that can be used in the infected areas, together with the resistant varieties “Leccino” and "FS17". One hundred olive samples, including 19 unknown accessions from free pollination of Cv. Simone and 81 minor local cultivars, were grown in the epidemic-affected areas in Apulia and tested for resistance in a three-block randomized scheme field trial by artificially infecting them with an X. fastidiosa strain. All cultivars were genotyped in advance with 10 SSR markers to identify synonyms and homonyms. Genotypes were evaluated for symptomatology, colony forming units (cfu)/ml, and Cq value after 4 (2021), 5 (2022), and 6 (2023) years post-inoculation by Real-Time PCR assay. Molecular data were used to investigate the genetic relationships between the resistant genotypes to provide clues to start new olive breeding programs. The first results identified some promising genotypes which show low symptoms, low number of cfu, and high Cq values which indicate a potential resistance to the disease, comparable to that of Leccino. The investigation will be continued to consolidate these results.