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BOOK OF ABSTRACTS

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Evaluation of genetic resistance in advanced selection of Prunus rootstocks and biocontrol efficiency against root rot pathogens: *Armillaria mellea* & *Phytophthora* spp

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Almond-oriented *Prunus* orchards in Mediterranean systems face chronic losses from two soilborne pathogens *Armillaria mellea* (Armillaria root rot) and *Phytophthora megasperma* (crown/root rot). Because chemical and cultural tactics rarely eradicate these diseases once established, rootstock resistance and biological control are central to sustainable management and align with the European Union vision to lower the use of chemicals up to 50% by 2030. We implemented randomized blocked container bioassays, growing rootstocks in sterile substrate under controlled irrigation and fertilization for ~120 days to rank resistance across 7 advanced *Prunus* selections developed from CITA-Agromillora *Prunus* rootstock breeding program along with three commercial rootstocks as comparator: Pilowred® and Rootpac® 20 for *Armillaria* trials and Rootpac® R with Pilowred® for *Phytophthora* trials, making a total of 270 plants. For *Armillaria*, infection was initiated by hazelnut woods pieces individually colonized by the target isolate and placed them in contact with roots. While for *Phytophthora*, we performed standard bark-wound inoculations at the root collar with mycelial plugs to induce canker formation. Plants were monitored for foliar wilt/desiccation and then destructively rated for crown/root lesions, mycelial fans/rhizomorphs (*Armillaria*) and canker length/severity (*Phytophthora*). In parallel, dual-culture antagonism assays on PDA and Yeast extract malt agar (YMA) at 25 °C quantified percent growth inhibition produced by two biocontrols, the non-pathogenic *Fusarium oxysporum* strain FO12 and a commercial product, against both pathogens by co-inoculating antagonist and pathogen on opposite plate margins for 21 days. Dual culture data were recorded using ImageJ and all data analysis were performed using R version 4.5.1. The genotypes showing little or no symptoms to *Armillaria* and *Phytophthora* infection and biocontrol that suppress pathogen growth in vitro, accelerate selection of resistant rootstocks and non-chemical tools for replant and disease-prone sites.