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BOOK OF ABSTRACTS

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INTERCROPPING OF AROMATIC PLANTS IN TRUFFLE ORCHARDS: SHORT-TERM EFFECT ON EXTRARADICAL TRUFFLE MYCELIUM AND AROMATIC PLANT GROWTH

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Intercropping of truffle-producing trees with aromatic plants is used to improve profitability of truffle orchards during the initial 4–7 years. However, after that period the viability of this system is challenged by the appearance of brûlés, an area around host tree characterised by scarce plant cover where the fungus exhibits allelopathic activity. We aimed to investigate the ecological interactions between both crops (aromatic plant–host tree) and between their associated mycorrhizal fungi in adult truffle plantations. In this study, we simulated two intercropping systems: truffle oak – lavender and truffle oak – rosemary in their adult stage. We analysed and compared aromatic plants and soil samples inside and outside the brûlés during the first year of aromatic plants development in the field. A strong negative relation of brûlés with the growth of the aromatic plants was found, although not a decrease in the arbuscular mycorrhizal colonization of their roots. The essential oil yield and composition of aromatic plants was affected by brûlés. The extraradical truffle mycelium was not significantly affected by the presence of aromatic plants. In conclusion, the growth and yield of aromatic plants were impaired during their first year growing in brûlés, whereas no negative effect of aromatic plants on truffle fruiting potential was found. The study improves our understanding of the mechanisms influencing the viability of the truffle tree – aromatic plant intercropping and the possible technical challenges.

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