

Pruning residue management associated pathogens in olive

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Within the framework of the LIFE+ project oLIVECLIMA, several alternative management practices are applied in commercial olive orchards at three Prefectures of Greece (Heraklion, Lasithi and Messinia), as a way to cope with the ongoing climate changes and improve the carbon balance within the orchard ecosystem. Applied practices focus on recycling organic materials removed during olive production process in either raw or composted form. In particular, use of trimmed pruning residues as soil mulch aims at increasing organic matter content and water retention capacity with overall positive results in soil fertility. However, in cases of diseased trees, recycling of pruning by-products might be associated with the dissemination of fungal diseases causing wood discoloration and decay. The main objective of the present study was to investigate whether recycling of raw or composted pruning residues in soil could potentially contribute to fungal pathogens dispersion, such as *Verticillium dahliae* and *Fomitiporia mediterranea*, within and between olive orchards. Two complementary methods (isolation on acidified potato dextrose agar medium-APDA and DNA extraction and polymerase chain reaction-PCR assay) were employed to detect the abovementioned pathogens in healthy and diseased plant tissues as well as in raw or composted plant materials. Both fungal species were detected in diseased tissues but not in composted materials. The outcome of these analyses indicates the low risk of pathogen dispersion in the fields following good agricultural practices and regular orchard monitoring.

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