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Synergistic effects of some essential oils against fungal spoilage on pear fruit

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Abstract:

The development of natural protective agents as alternatives to chemical fungicides is currently in the spotlight. In the present investigation, chemical composition and antifungal activities of thyme, cinnamon, rosemary and marjoram essential oils (EO), as well as synergism of their possible double and triple combinations were investigated. The compositions of the oils were determined by GC/MS. For determination of antifungal activity against *Penicillium expansum* and *Botrytis cinerea*, a broth microdilution method was used. The possible interactions of some essential oil combinations were performed by the two and three-dimensional checkerboard assay and isobologram construction. An *in vivo* antifungal assay was performed by artificial wounding of pear fruits. The maximum antifungal activity was demonstrated by thyme and cinnamon oils which displayed lower MIC values whereas

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