

Title In vitro antifungal activity of some plant essential oils on postharvest pathogens of strawberry fruit

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Citation ISHS Acta Horticulturae 858:305-311. 2010.

Keyword pathogenic fungi; *Satureja* sp.; *Thymus* sp.; *Salvia officinalis*; *Artemisia aucheri*

Abstract

Essential oils produced by different genera are often biologically active, endowed with antifungal, antimicrobial and antioxidant effects. The aim of this study was to evaluate the antifungal potential of 7 plant species against 4 postharvest pathogenic fungi (*Rhizopus stolonifer*, *Penicillium digitatum*, *Aspergillus niger*, *Botrytis cinerea*) which can reduce the shelf life of strawberry fruit. Chemical composition of plant oils was determined by capillary gas chromatography and mass spectrometry. Antifungal assays were carried out in vitro using PDA plates. Antifungal potential was found for all analysed essential oils. Oils of *Salvia officinalis* and *Artemisia aucheri* had low antifungal effect whereas *Satureja* sp. oils showed promising inhibitory effect even at low concentration ($300 \mu\text{l L}^{-1}$) against *A. niger*. *Thymus* sp. and *Satureja* sp. oils showed inhibitory effect against the other three fungi. A fungicidal effect was not observed on *A. niger* even at high concentration whereas an inhibition on *B. cinerea* was determined.