Title Use of some essential oils as post-harvest botanical fungicides in the management of grey mould of grapes caused by *Botrytis cinerea*

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Abstract

During screening of twenty six essential oils against *Botrytis cinerea*, the essential oils of the ten plants viz. *Chenopodium ambrosioides*, *Eucalyptus citriodora*, *Eupatorium cannabinum*, *Lawsonia inermis*, *Ocimum canum*, *O. gratissimum*, *O. sanctum*, *Prunus persica*, *Zingiber cassumunar* and *Z. officinale* were found to exhibit absolute fungitoxic activity (100% growth inhibition). The essential oils of *O. sanctum*, *P. persica* and *Z. officinale* were selected for further investigation because these oils showed lower Minimum Inhibitory Concentration (MIC) as compared to the other fungitoxic oils. The selected oils were subsequently standardized through physico-chemical and fungitoxic properties. The MIC values of *O. sanctum*, *P. persica* and *Z. officinale* were found to be 200, 100 and 100 ppm (mg/l) respectively. The oils showed fungistatic nature at their respective MIC. The oils were thermostable, and exhibited a wide range of fungitoxicity against 15 other post-harvest fungal pathogens. The oils had the potency to withstand high inoculum density. The antifungal potency of oils was found to be greater in comparison to some prevalent synthetic fungicides. Practical applicability of the essential oils was observed in control of grey mould of grapes caused by *B. cinerea* during storage. The *O. sanctum*- and *P. persica*-oil-treated grapes showed enhancement of storage life up to 5 and 4 days respectively. The storage life of *Z. officinale*-oil-treated grapes was found to be enhanced up to 6 days. The oils did not exhibit any phytotoxic effect on the fruit peel. Therefore, the oils could be recommended as a potential source of ecofriendly botanical fungicide, after long term and wide ranging trials.

http://www.springerlink.com/content/cr57uj7u547m3n8g/fulltext.pdf