

**Title** Improvement of postharvest quality of subtropical fruits using *Lippia scaberrima* essential oil  
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#### **Abstract**

*Lippia scaberrima* Sond. (*Verbenaceae*) is a small aromatic shrub indigenous to South Africa. A camphorous essential oil was tained from bulk aerial parts of *L. scaberrima* by steam distillation. Gas chromatography with flame ionization detection realed that limonene, 1,8-cineole and R -carvone were the main oil constituents. Strong in vitro antifungal activity of the essential oil was observed against common postharvest spoilage pathogens of mango, avocado and citrus fruit. R-carvone was found to be largely responsible for this antifungal activity. These results were confirmed by semi-commercial and commercial trials using fruit treated with coatings, amended with *L. scaberrima* essential oil. The control treatments were done using standard commercial fungicide applications, while the experimental treatments all consisted of coating amended with the oil or single terpenoid constituents, in the absence of synthetic fungicides. Effective disease control was obtained using all of the nded treatments. Quality parameters measured indicated that the overall quality of the fruits was maintained. Essential oil amended coatings could eliminate environmentally harmful toxic waste originating from standard packhouse procedures. Alternatively, the use of essential oils alone or in combination with synthetic fungicides, could lengthen the useful lifespan of existing fungicides.