

ABSTRACTS

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**EVALUATION OF THREE ESSENTIAL OILS AS
POTENTIAL SOURCE OF BOTANICAL FUNGICIDE**

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In a previous study, a microbioassay was developed and used for the in vitro screening of thirty essential oils against two important pathogens of citrus (*Penicillium italicum* and *P. digitatum*) and one important pathogen of banana (*Colletotrichum musea*). Three essential oils (*Cinnamomum zeylanicum*, *C. verum* and *Eugenia caryophyllus*) showed a good antifungal effect. The present study was thus undertaken to evaluate the in vivo activity of these essential oils. To this end, fresh orange fruits were disinfected and wounded before being treated at the wound site with the following treatments: distilled water, ethanol (1.5%), fungicide (0.4%), or with one of the essential oils (0.5, 1, 5, 10 and 20%). Two hours later, orange wounds were inoculated with a suspension (10⁴ spores/ml) of *P. italicum* or *P. digitatum*. After an incubation period of 5 days, lesion diameters caused by the pathogens were measured for each treatment. In the case of *C. zeylanicum* and *C. verum* essential oils applied at more than 5%, protective levels above 60% were recorded. Phytotoxicity symptoms appeared at 20% essential oil only. This is a first encouraging study for the development of biofungicides based on essential oils as an alternative to chemical fungicides.