

Title Control of *Colletotrichum gloeosporioides* (penz.) Sacc.in yellow passion fruit using cymbopogon citratus essential oil

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Citation Brazilian Journal of Microbiology, 41(1), 2010.

Keywords Yellow passion fruit; *Colletotrichum gloeosporioides*; Anthracnose; Antimicrobial activity; Minimal inhibitory concentration

Abstract

The use of antibiotics in agriculture is limited when compared to their applications in human and veterinary medicine. On the other hand, the use of antimicrobials in agriculture contributes to the drug resistance of human pathogens and has stimulated the search for new antibiotics from natural products. Essential oils have been shown to exert several biological activities including antibacterial and antifungal actions. The aim of this study was to determine the activity of 28 essential oils from medicinal plants cultivated at CPMA (Medicinal and Aromatic Plants Collection), CPQBA/UNICAMP, against *Colletotrichum gloeosporioides* (Penz.) Sacc., the anthracnose agent in yellow passion fruit (*Passiflora edulis* Sims *f. flavicarpa* Deg), as well as evaluating their effect in the control of post-harvest decay. The oils were obtained by water-distillation using a Clevenger-type system and their minimal inhibitory concentrations (MIC) determined by the micro-dilution method. According to the results, 15 of the 28 essential oils presented activity against *Colletotrichum gloeosporioides*, and the following four oils presented MIC values between 0.25 and 0.3 mg/mL: *Coriandrum sativum*, *Cymbopogon citratus*, *Cymbopogon flexuosus* and *Lippia alba*. The evaluation of *Cymbopogon citratus* essential oil in the control of post-harvest decay in yellow passion fruit showed that the disease index of the samples treated with the essential oil did not differ ($P < 0.05$) from that of the samples treated with fungicide. The present study shows the potential of *Cymbopogon citratus* essential oil in the control of the anthracnose agent in yellow passion fruit.