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The synergistic antimicrobial effect of carvacrol and thymol in clay/polymer nanocomposite films over strawberry gray mold

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Abstract

The *in vivo* synergistic antimicrobial effects of the essential oils constituents (EOCs) carvacrol (CRV) and thymol (TML) included in low-density polyethylene/organically modified montmorillonite (LDPE/OMM) nanocomposite films were evaluated using strawberries inoculated with *Botrytis cinerea*. XRD analysis of a LDPE/OMM nanocomposite showed an increase in the interlayer distance with respect to the original nanoclay, indicating an intercalated morphology. Improved packaging properties, such as mechanical, thermal and rheological properties, with respect to the neat LDPE were achieved. An approximately 15 % decrease in the