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

Víctor H. Campos-Requena, Bernabé L. Rivas, Mónica A. Pérez, Carlos R. Figueroa, Eugenio A. Sanfuentes



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

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4 Víctor H. Campos-Requena^a, Bernabé L. Rivas^{*b}, Mónica A. Pérez^b, Carlos R. Figueroa^c,
5 Eugenio A. Sanfuentes^c

6

7 ^a *Departamento de Ciencia y Tecnología de los Alimentos, Facultad de Farmacia, Universidad*
8 *de Concepción, Casilla 160–C Correo 3, Concepción, Chile. Fax: (+056) 041 2210568; Phone:*
9 *(+56) 041 2661040.*

10 ^b *Polimer Department, Faculty of Chemistry, Universidad de Concepción, Casilla 160–C Correo*
11 *3, Concepción, Chile. Fax: (+56) 041 2243379; Phone: (+56) 041 2204256.*

12 ^c *Facultad de Ciencias Forestales, Universidad de Concepción, Concepción, Casilla 160–C*
13 *Correo 3, Chile. Fax: (+56) 041 2246004; Phone: (+56) 041 2204848.*

14

15 ^{*}Corresponding author: Fax: (56) 041 2243379; Phone: (056) 041 2204302. E-mail address:
16 brivas@udec.cl (Bernabé L. Rivas).

17

18 **Abstract**

19

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

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