

Fumigant toxicity of *Pistacia lentiscus* essential oil against *Tribolium castaneum* and *Lasioderma serricornis*

Olfa BACHROUCH^{1,2}, Jouda MEDIOUNI-BEN JEMÂA³, Thierry TALOU⁴, Brahim MARZOUK², Manef ABDERRABA¹

¹Unité de Recherche de Physico-Chimie Moléculaire (URPCM). IPEST, La Marsa, Tunisie

²Unité de Plantes Aromatiques et Médicinales, Centre de Biotechnologie du Technopole de Borj Cedria, Hammam lif, Tunisie

³Laboratoire de Protection des Végétaux, INRAT, Ariana, Tunisie

⁴Laboratoire de Chimie Agro-industrielle, Unité de recherche mixte INRA/INP ENSIACET (UMR1010), Toulouse Cedex, France

Abstract

This study reports fumigant toxicity of *Pistacia lentiscus* L. (Anacardiaceae) essential oil against 1-7 day-old adults of *Tribolium castaneum* (Herbst) and *Lasioderma serricornis* (F.). The chemical composition of the essential oil was assessed via GC and GC-MS. Alpha-phellandrene (3.20%), alpha-pinene (9.48%) and limonene (19.11%) were the major compounds. The mortality of adults was tested in different concentrations ranging from 114 to 1023 µl/l air and different exposure times. Significant differences in insect mortality were observed within insect species, oil concentrations and exposure time. The fumigant toxicity potential of *P. lentiscus* on *L. serricornis* was greater (LC₅₀ = 8.44 µl/l, LC₉₅ = 43.68 µl/l) than on *T. castaneum* (LC₅₀ = 28.03 µl/l, LC₉₅ = 63.46 µl/l). Moreover, the median lethal time values (LT₅₀) were respectively 18.58 and 41.05 hours. The results suggested that *P. lentiscus* essential oil may have potential as a control agent against these two stored product beetles.

Key words: Anacardiaceae, Anobiidae, lethal concentration, monoterpenoids, Stored-product insects, Tenebrionidae.

Authors' addresses: □

Olfa BACHROUCH (corresponding author, □
bachrouch_olfa@yahoo.fr), Manef ABDERRABA, Unité de □
Recherche de Physico-Chimie Moléculaire, IPEST, BP51, 2070 □
La Marsa, Tunisia; Jouda MEDIOUNI BEN JEMAA, Laboratoire □
de Protection des Végétaux, INRAT, 2049 Ariana, Tunisia; □
Thierry TALOU, Laboratoire de Chimie Agroindustrielle, Unité de □
recherche mixte INRA/INP. ENSIACET (UMR1010), 118 route de □
Narbonne, 31077 Toulouse Cedex France; Brahim MARZOUK, □
Unité de Plantes Aromatiques et Médicinales, Centre de □
Biotechnologie du Technopole de Borj Cedria, BP901, 2050 □
Hammam lif, Tunisie. □

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