Repellency and irritability of essential oil thymol chemotype of *Lippia gracilis* and its major compound on *Cryptolestes ferrugineus*

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The beetle *Cryptolestes ferrugineus* (Coleoptera: Cucujidae) is a secondary pest of greatest importance among the insects that attack stored products. Substances from botanical origin have been identified as viable alternatives to pest management because they have advantages such as fast action, degradation and selectivity to non-target organisms. *Lippia gracilis* Schauer is a shrub native of northeastern Brazil and has rich scent leaves essential oil. The essential oil of this plant is composed of mono and sesquiterpenes, which has medicinal properties. This study aimed to evaluate the behavioral effects of the essential oil from *Lippia gracilis* genotype LGRA106 and its major constituent thymol against *C. ferrugineus*. Behavioral bioassays, repellency and irritability, using the essential oil and its major compound thymol were performed in 1 % solution following the adapted methodology described by Cordeiro et al (1). The essential oil was obtained from leaves dried in an oven at 40 °C for 5 days, using a Clevenger apparatus. Thymol was purchased from Sigma-Aldrich. The identification of compounds was performed by GC/MS and GC/FID, and 20 constituents were identified. Thymol (43.8 %) was the major component of this genotype, characterizing it as thymol chemotype, followed by carvacrol (15.7 %), methyl thymol (8.1 %), γ-terpinene (6.9 %), β-caryophyllene (6.5 %) and *p*-cymene (6.4 %). All treatments caused repellency and irritability to *C. ferrugineus*. Generally, insects passed more than 85 % of the total time (10 min) in the untreated side. The essential oil was the most repellent treatment (76 %) and increased irritability rate (93.75 %). Thus, these results demonstrate the potential of the essential oil from *L. gracilis* and its major compound thymol for the development of new products to control stored product pests.

1. Cordeiro, E.M.G. et al.Chemosphere, 2010, **81**, 1352-1357.

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