

Title *Hyptis suaveolens* and *Hyptis spicigera* (Lamiaceae) essential oils: qualitative analysis, contact toxicity and repellent activity against *Sitophilus granarius* (L.) (Coleoptera: Dryophthoridae)

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Abstract

Essential oils from *Hyptis suaveolens* (L.) Poiteau (Lamiaceae) and *Hyptis spicigera* Lamarck (Lamiaceae) were first analysed by gas chromatography and by gas chromatography/electron impact mass spectroscopy and then evaluated for toxicity and repellent activity against *Sitophilus granarius* (L.) (Coleoptera: Dryophthoridae), one of the most serious worldwide stored grain pests. Fifty-six compounds have been identified in the essential oil of *H. suaveolens*: monoterpene hydrocarbons were the most represented volatiles (64.1%), followed by sesquiterpene hydrocarbons (24.0%), oxygenated monoterpenes (8.1%) and oxygenated sesquiterpenes (2.4%). Diterpenes and non-terpene derivatives were scarcely represented. Sixty compounds have been identified in the essential oil of *H. spicigera*: monoterpene hydrocarbons were the most represented class of volatiles (70.4%), followed by sesquiterpene hydrocarbons (22.6%). Results from topical applications on insects showed that both essential oils had an effective insecticidal activity. The complete kill of *S. granarius* was observed 24 h after treatment at a minimum effective dose of 0.4 and 0.6 μl per insect with *H. suaveolens* and *H. spicigera* oil, respectively. Results from repellency tests showed that the two essential oils had a repellent activity on *S. granarius* adults: at the lowest dose (2×10^{-4} μl oil per cm^2), *H. spicigera* essential oil exhibited a higher repellent effect in comparison to *H. suaveolens*. No significant differences were observed for the repellent effect between the two essential oils at the highest dose (2×10^{-2} μl oil per cm^2).

<http://www.springerlink.com/content/3074q2hh43r38652/fulltext.pdf>