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Insecticidal effects of *Thuja occidentalis* (Cupressaceae) essential oil on *Lasioderma serricorne* (Col.: Anobiidae)

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Abstract

In order to find recyclable, environmentally friendly and easily accessible insecticides, the essential oil of *Thuja occidentalis* L. (Cupressaceae), was used against the adult stages of *Lasioderma serricorne* (F.). Analysis of *Thuja occidentalis* essential oil used for insect fumigation by phase gas chromatography revealed the presence of 22 compounds including α -thujone (49.64%), fenchone (14.06%), and β -thujone (8.98%). The experiment was conducted in 6 replications using a completely randomized design of factorial experiment. The essential oil was prepared by water distillation method. Experiment was carried out at $30 \pm 2^\circ\text{C}$ and $60 \pm 5\%$ R.H. under dark conditions. Concentrations are included 0.00375, 0.00493, 0.00650, 0.00855, 0.01125 $\mu\text{L/L}$ air and a control (untreatment), after 24 h, respectively. At the concentration of 0.015 $\mu\text{L/L}$ air essential oil caused 100% mortalities of *Lasioderma serricorne* (F.) adults. A value of 50% lethal concentration on adults was 0.00687 $\mu\text{L/L}$ air for *Lasioderma serricorne* (F.), respectively.

Key Words

Thuja occidentalis, *Lasioderma serricorne*, essential oil, fumigation, mortality, LC_{50} .

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