

Title Insecticidal activity of some aromatic plants from Croatia against lesser grain borer (*Rhyzopertha dominica* F.) on stored wheat.

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Abstract

Essential oils and plant dusts from the Croatian aromatic plants *Lavandula officinalis* [*L. angustifolia*] (dust from ground leaves, flowers and stems), *Laurus nobilis* (dust from ground leaves), *Rosmarinus officinalis* (dust from ground leaves and stems), and *Thymus vulgaris* (dust from ground leaves, flowers and stems) were evaluated for insecticidal activity against the lesser grain borer *R. dominica* infesting market and seed wheat under laboratory and storage conditions. Up to 100% mortality of adults was obtained over the exposure period. The efficacy of the plant material was compared to a control with no treatment. The rates of essential oils and plant dust recalculated on 5-kg wheat samples were 3.75 ml per sample of oils, and 37.5 g per sample of dust. In general, all essential oils exhibited strong insecticidal effect (100% mortality of adults after 24 h). *L. nobilis* was the most effective in dust form (100% mortality of adults after 7-10 days of exposure) under storage conditions. In the control samples, no mortality of adults was recorded. Over the 5-month period, damage on wheat was 30%, while insect population increased up to 190%. No changes in quality, colour or flavour of the commercial wheat flour were recorded during the treatment; however, each sample retained the scent of the plants tested. On seed wheat, no negative effect on germination or energy of germination was recorded. These aromatic plant products proved to be partial substitutes for synthetic insecticides if applied to smaller stocks of stored wheat.