

Influence of plant volatiles on feeding damage caused by the onion thrips *Thrips tabaci*

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Abstract

Leaf disc bioassays were conducted to determine the effects of essential oils and their volatile constituents from plant species (*Lamiaceae* family) at three concentrations ranging from 0.01% to 1% on the feeding activity of adult female onion thrips (*Thrips tabaci* Lindeman; Thysanoptera: Thripidae). The percentage of feeding damage area on leek (*Allium porrum* L.) leaf discs and the adult survival was assessed after 24 h. Onion thrips were significantly deterred by the essential oils of marjoram (*Origanum majorana* L.), lavender (*Lavandula angustifolia* L.) and mint (*Mentha arvensis* L.) at several concentrations, and by the oil of rosemary (*Rosmarinus officinalis* L.) at 1% concentration. Furthermore, thrips feeding damage was reduced as a result of linalool and eugenol application at three concentrations. Adult survival on the leaf disc surface was significantly decreased by application of terpinen-4-ol at 1% concentration. Evaluation of the potential of biologically active plant volatiles against *T. tabaci* may provide a new approach to the development of antifeedants and/or natural insecticides for use in both biological and integrated pest management strategies.