

IDENTIFICATION OF A MALE-PRODUCED AGGREGATION  
PHEROMONE IN THE WESTERN FLOWER THRIPS  
*Frankliniella occidentalis*

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**Abstract**—Two major components have been detected in the headspace volatiles of adult male *Frankliniella occidentalis* (Pergande) (Thysanoptera: Thripidae) that are not present in the headspace volatiles of adult females. The compounds were identified as (*R*)-lavandulyl acetate and neryl (*S*)-2-methylbutanoate by comparison with synthetic standards using gas chromatography (GC), GC–mass spectrometry (MS), and chiral GC. Field trials were conducted with synthetic compounds in naturally infested crops of sweet pepper grown in large plastic greenhouses in Spain. The catch of adult females and males on blue sticky traps was increased by neryl (*S*)-2-methylbutanoate alone or by a 1:1 blend of (*R*)-lavandulyl acetate and neryl (*S*)-2-methylbutanoate, but (*R*)-lavandulyl acetate was not active alone. This is the first identification of an aggregation pheromone in the order Thysanoptera. The possible role of (*R*)-lavandulyl acetate is discussed.

**Key Words**—Western flower thrips, *Frankliniella occidentalis*, Thysanoptera, Thripidae, aggregation pheromone, (*R*)-lavandulyl acetate, neryl (*S*)-2-methylbutanoate.

INTRODUCTION

The adult males of many species of thrips (order Thysanoptera) possess sternal glands or *areae porosae* (Mound et al., 1980), which are structurally consistent with the production of a pheromone (Bode, 1978; Sudo and Tsutsumi, 2002).

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