Response of *Frankliniella occidentalis* and *Thrips tabaci* to thrips lures in California

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Two field trials were undertaken in a fallow field adjacent to citrus trees at Agricultural Operations at the University of California, Riverside (CA), USA to examine the efficacy of 14 chemical lures for attracting western flower thrips (WFT) *Frankliniella occidentalis* (Pergande) and onion thrips (OT) *Thrips tabaci* Lindeman to yellow sticky traps over 24 hours. Air temperatures during the two trials ranged from 16 to 36°C. In both trials traps with methyl isonicotinate caught significantly more (x2.8 and x3.4 respectively) female WFT than traps without lures. No other chemical lure tested caught as many WFT as the methyl isonicotinate-baited traps. In trial 1, traps with ethyl isonicotinate (not included in bioassay 2) caught significantly more female OT (x4.0) than traps without lures. No other chemical lure tested caught as many OT as the ethyl isonicotinate-baited traps. Because of the close proximity of the traps (10 m between traps), control traps were expected to have been influenced by odour from baited traps, thereby reducing the apparent efficacy of the baited traps.

Developing lure and kill systems for thrips pest management

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Some thrips species (Thysanoptera) are important pests of crops in New Zealand, and are vectors of several important plant tospoviruses. 'Lure and kill' could provide an alternative or complementary control to the current practice that relies on the unsustainable use of insecticides. The efficacy of a lure and kill device was tested on thrips in a grass field. The thrips olfactory lure used was methyl isonicotinate, the visual cue was yellow and the kill component in the trap was an organophosphate insecticide applied to an absorbent material. The control device was yellow, but did not contain the lure or insecticide. The device allowed thrips to freely enter and leave, but limited the access of non-target organisms. The devices were left out for three days. The ratio of dead thrips in the control devices relative to those with insecticide was 1:34.4. Addition of the olfactory lure to the insecticide devices increased the ratio to 1:47.5. The results highlight the need for an effective olfactory lure component to ensure the insects enter and explore the trap, to be exposed to a lethal dose of the kill component. Results are discussed in relation to thrips pest management.