

# Exploiting the aggregation pheromone of strawberry blossom weevil *Anthonomus rubi* (Coleoptera: Curculionidae): Part 2. Pest monitoring and control

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## Abstract

This study was the second part of a project to assess the applicability of the male-produced, aggregation pheromone of the strawberry blossom weevil, *Anthonomus rubi*, for commercial monitoring and control. Following optimisation of pheromone lure and trap in previous work, the potential of the pheromone traps for monitoring and control of the pest was investigated. There was no obvious relationship between total pheromone trap catches and numbers of weevils on the crop determined by beating. However, good correlations were obtained at five sites during two seasons between the cumulative numbers of weevils and the amount of severing damage on the crop. Early catches of weevils preceded the first occurrence of damage by at least 1 week in several instances, providing useful information for timing the application of insecticide sprays against the adults to prevent occurrence of damage. The number of flowers severed was usually in the range of 0.5–2.0 times the cumulative number of weevils captured per trap. Adult weevil catches started at a low level in April or early May with similar numbers of males and females. The catches showed a marked increase in mid June coinciding with the emergence of new adults from the damaged flower buds, even though these are in reproductive diapause. Male weevils predominated in catches beyond this date by a factor of approximately 2:1. Two field experiments investigated the interference between traps and the effects of the traps on populations and crop damage by this pest. There was no evidence for interference between traps at spacings as close as 1.7 m, and no effect on weevil damage or distribution was observed. Replicated trials were carried out of three approaches to exploit the pheromone for control of strawberry blossom weevil damage in 0.5 ha plots in commercial strawberry crops. These involved surrounding the crop with a perimeter of lures, the same method but with a boarder spray of the pyrethroid insecticide bifenthrin or by mass trapping with sticky stake pheromone traps at a density of 1000 per ha. None of these showed any reduction in crop damage compared to untreated plots. Possible reasons for this lack of success are discussed.

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**Keywords:** Strawberry blossom weevil; *Anthonomus rubi*; Pheromone trap; Monitoring; Lure-and-kill; Mass trapping

## 1. Introduction

The strawberry blossom weevil, *Anthonomus rubi* Herbst (Coleoptera: Curculionidae), is a common pest

of strawberry in western and central Europe (e.g. Vidano et al., 1990; Selivanova, 1991). Adults emerge from amongst debris in hedge bottoms in spring and invade strawberry fields. After a short period of feeding, mating occurs and the females insert eggs, usually singly, into the flower buds of strawberry (Jary, 1932). After oviposition, the female nips the stalk just below the bud with her rostrum, partially severing it. The flower bud

DOI of original article: 10.1016/j.cropro.2005.04.002

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