

Mating Disruption/SIR

Evaluation of three consecutive years of mating disruption for control of greater peachtree borer (*Synanthedon exitiosa*) in peach

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Abstract: Placement of Isomate-P (rope-style) dispensers (Biocontrol Limited, Vancouver, WA) in two to three approximately one-acre peach orchards in 2000-2002 resulted in complete trap shutdown of greater peachtree borer (GPTB) moths. In contrast, low to moderate densities of GPTB moths (0.05-2 moths per trap per day) were captured in insecticide-treated comparison peach orchards. There were no untreated comparison orchards. Lower peach tree trunks were inspected for borer injury in September or October of each year. No GPTB injury was detected in any orchard in any year. Mating disruption provided complete control of GPTB in small peach blocks (one acre), comparable to a standard insecticide program (single application of Lorsban to lower trunks each year).

Introduction

The greater peachtree borer (GPTB) is an important pest of peach, apricot, nectarine and cherry. Damage is caused by the larvae, which burrow beneath the bark of the trunk near or just below the soil surface. Larvae feed on the cambium beneath the bark and can girdle trees, thus killing them. The standard treatment to prevent damage by GPTB in commercial orchards is application of an insecticide to the trunk of susceptible trees during early July and sometimes a second application one month later. A potential non-pesticide alternative is pheromone-based mating disruption. Mating disruption (MD) was used for GPTB control in one to three peach orchards (blocks identified as MD-1, MD-2, and MD-3) during summers of 2000-2002 at the USU Kaysville Agriculture Experiment Station (Davis Co., UT).

Materials and Methods

Isomate-P (rope-style) dispensers from Biocontrol Limited (Vancouver, WA 98660, 1-800-999-8805) were applied to two peach orchards in 2000 (MD-1, 1 acre 'Suncrest' planted in 1990; MD-2, 1 acre 'Red Haven' planted in 1994) and to the same two orchards plus a new orchard (MD-3, 0.9 acre 'Red Haven' planted in 2001) in 2001 and 2002. The dispensers were applied at a rate of one per tree, which resulted in 155-175 dispensers per acre. The recommended dispenser application rate is 100-250 dispensers per acre. The Isomate-P dispensers were applied on 21 June 2000, 22 June 2001, and 26 June 2002 within four days of the first capture of GPTB moths. The same insecticide-treated comparison block was used in all three years (Kaysville Treated, 1.5 acre mixed cultivars ['Gleason Elberta', 'Red Globe', 'Cresthaven']). The insecticide comparison block was treated with a single application of Lorsban (chlorpyrifos) in early July in each year. One wing-style pheromone trap was placed in

each block in each year to monitor moth abundance. Every tree trunk in each block was evaluated for GPTB injury on 20 September 2000, 3 October 2001, and 27 September 2002 by visual inspection of the lower trunk and removal of approximately 1 inch of soil around each tree base.

Results and Discussion

No GPTB moths were captured in mating disruption blocks after the Isomate-P dispensers were applied (Figs. 1 and 2; moth catch for 2002 is not shown but is very similar to previous years). In contrast, GPTB moths were captured in the Kaysville insecticide-treated and Genola (Utah Co., UT) comparison block (Genola Reference) from late June through mid-August in 2000 and through mid-September in 2001. GPTB moth densities were approximately two times greater in 2000 than in 2001. It appears that mating disruption can provide highly successful control of GPTB, comparable to a standard insecticide program.

Figure 1. Greater peachtree borer catches, 2000.

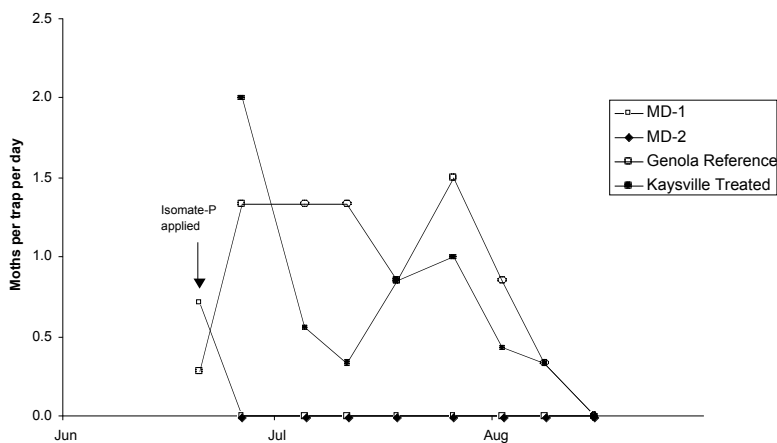


Figure 2. Greater peach tree borer trap catches, 2001.

