

Thresholds, Monitoring and Sampling

Efficacy of New Pheromone Lures for Monitoring Peach Twig Borer

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Pheromone traps have been used for monitoring populations of peach twig borer (PTB) in stone fruit and almond orchards since 1976. Typically, small rubber septa (lures) have been used to release a two-component blend of PTB pheromone in a specific isomer ratio. Due to the high volatility of the PTB pheromone blend and low load capacity, field life of the rubber septa lures is relatively short, and replacement of lures has been recommended at two-week intervals to maintain a high level of moth collections.

Recently, other types of pheromone dispensing lures have been developed, primarily to extend field longevity of lures and thereby extend replacement intervals and reduce monitoring costs. In 1997, two new lures for PTB monitoring traps were compared to standard Pherocon® rubber septa lures (Trécé Inc., Salinas, CA) that had been used since 1976.

Biolure® PTB pheromone lures (Consep, Inc., Bend, OR) and Scenturion® PTB lures (Scenturion, Clinton, WA) were compared to Pherocon PTB septa lures in a mature, unsprayed almond orchard near Selma, CA, from July 1 to October 28, 1997. Lures were placed according to manufacturer recommendations in standard wing traps, with five replications of each lure. The Pherocon rubber septa lures were replaced at two-week intervals; the Biolure and Scenturion lures were not replaced during the trial. Traps were placed in a randomized complete block array; trapped PTB moths were counted and removed twice weekly from July 1-October 7 and weekly thereafter. Traps were rotated to the next position in the array at each count date.

The results of the PTB lure comparison test (Table 1) showed no significant statistical differences in moth collections among the three lures through week 9 (September 2) even with biweekly replacement of the Pherocon lures. After 10 weeks of exposure (September 9) Biolure dispensers began to fall significantly behind the Scenturion and Pherocon lures in moth collections. By September 30 (week 13), the Scenturion lures were also beginning to fade in comparison to fresh Pherocon lures, although a "clean" statistical difference was not seen between these two lures until week 15 (October 14).

This trial demonstrated the efficacy of two new pheromone lures for monitoring PTB in orchards. The Biolure (liquid reservoir) and Scenturion (solid substrate) both showed comparable efficacy and improved longevity compared to standard rubber septa lures.

Table 1. Comparative collections of peach twig borer, *Anarsia lineatella*, in sticky traps baited with three different lures.

| | Date | Lure type—mean no. moths collected/week ¹ | | |
|------------|------|--|--------|------------|
| | | Trécé | Consep | Scenturion |
| July | 8 | 108.0a | 83.4a | 83.2a |
| | 15* | 19.2a | 26.6a | 32.0a |
| | 22 | 40.8b | 30.5a | 46.1b |
| | 29* | 28.2a | 20.0a | 42.6b |
| August | 5 | 30.0a | 23.0a | 36.6a |
| | 12* | 37.8a | 27.6a | 46.4a |
| | 19 | 117.0a | 92.2a | 125.6a |
| | 26* | 92.0a | 97.8a | 122.6a |
| September | 2 | 152.8a | 86.8a | 139.8a |
| | 9* | 164.6b | 104.0a | 173.0b |
| | 16 | 309.8b | 187.8a | 243.4ab |
| | 23* | 407.8a | 321.4a | 432.2a |
| | 30 | 415.2b | 314.4a | 370.8ab |
| October | 7* | 115.0b | 64.2a | 81.0ab |
| | 14 | 40.8b | 9.8a | 18.6a |
| | 21* | 24.2b | 7.2a | 15.4ab |
| Terminated | 28 | 9.8ab | 2.4a | 11.4b |

*=Trécé lure change.

¹Means in rows followed by the same letter are not significantly different at $P=0.05$, Fisher's Protected LSD test.