Control of light brown apple moth using Trichogramma egg parasitoids

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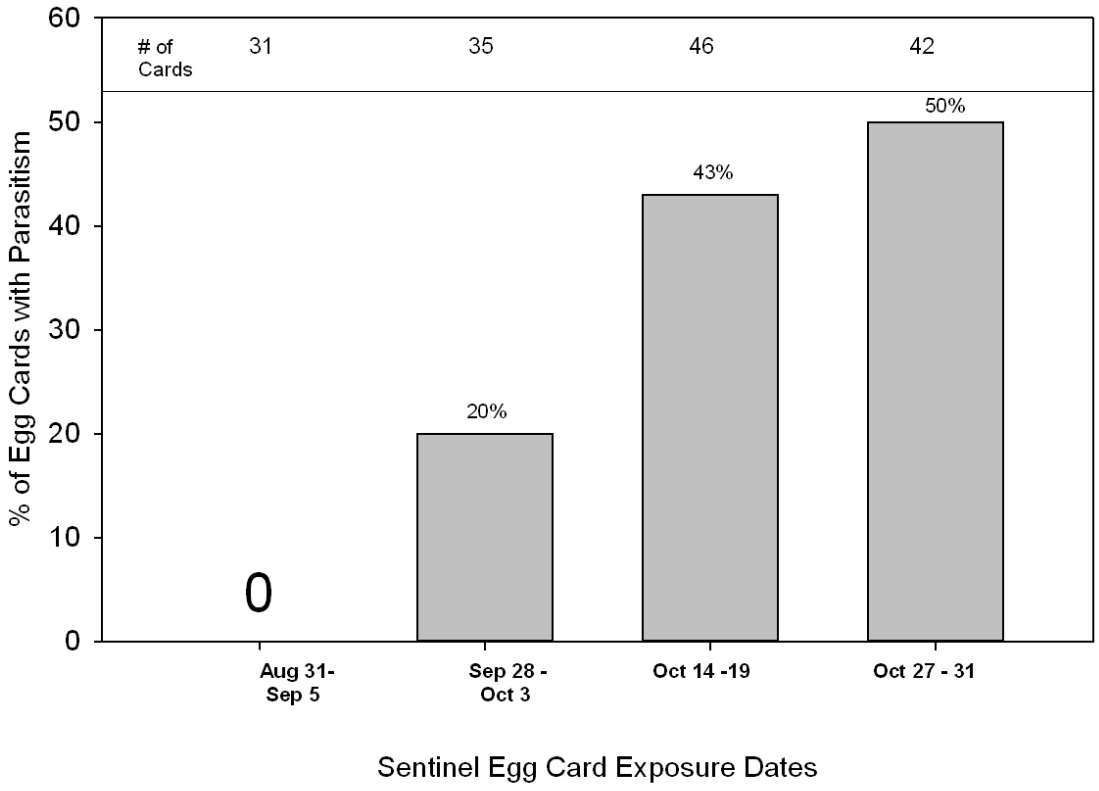
An augmentative, biological control pilot study was conducted in a small (i.e., 4 acre) native-plant retail nursery in Monterey County. The objective was to determine the feasibility of using repeated releases of an insectary reared egg parasitoid, *Trichogramma platneri* , in the management of the light brown apple moth within a nursery environment.

Release cards containing *Trichogramma platneri* wasps (3,000 per card) in the pupal stage were distributed throughout the nursery every two weeks from the end of August to late October. The *T. platneri* were produced on *Ephestia kuehniella* by a commercial insectary. The black paper release cards were attached to potted plant foliage using an existing hook fabricated within the card. They were disbursed across the nursery site to approximately represent an application rate of 100k per acre. They were also applied to *Baccharis* plants on the natural landscape surrounding the nursery (within 50m). Field emergence of wasps was estimated to be 70%. Under ideal lab conditions, emergence was 80-90%. The sex ratio was approximately 60/40 females to males.

The impact on the LBAM was not measured directly; however, a sentinel egg approach to evaluation was used to demonstrate feasibility. Approximately two day old oblique banded leafroller, *Choristoneura rosaceana*, egg masses (30-70 eggs each) laid on clear plastic card material (1x0.5”] were stapled to foliage for (4-5 days). Upon collection, each egg card was isolated in a vial with a cotton plug



and placed in a sealed tight food container. A RH of 65% was maintained through the use of a saturated solution of rock salt and water in a small cup kept within the container.

Results:

Egg cards were generally in the field for 5 days. This representing a shorter period than eggs laid naturally by LBAM, and vulnerable to parasitism. Therefore the results in fig. 1 represent a conservative estimate of parasitism. No egg cards were parasitized following the first release date. Percent parasitism increased from 20 to 50% in subsequent releases.

Predation of eggs in the field was noted by the absence of eggs on the cards when collected. Across dates predation followed: 22, 30, 20 and 30 respectively. It is believed that the majority of predation was caused by yellowjackets, ants, and slugs.

Trichogramma producer: Beneficial Insectary, Inc. , 9664 Tangueray Ct., Redding, CA 96003; Contact: Sinthya Penn, www.insectary.com , Ph.(800) 477-3715, (530) 226-6300

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