

### Citrus Cutworm

**Source of Information:** Lindcove Research and Extension Center

**Biofix:** January 8, 2001 for the Exeter and Ivanhoe area

**Lower developmental threshold:** 45.6°F

**Begin Sampling for Cutworm Larvae:** 250 DD

**Current Degree-Day Accumulation:** 268 DD

**Expect to find 1st and 2nd instar larvae:** 350-400 DD

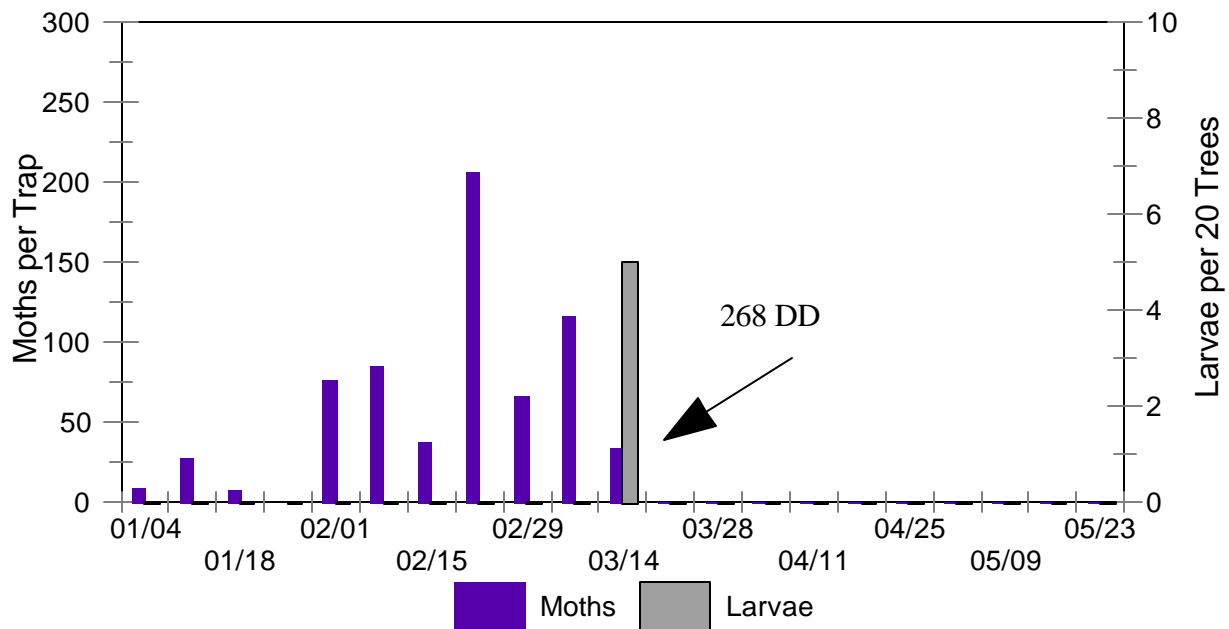
**Apply microbials (Bt products):** 400-550 DD

First instar citrus cutworm larvae were found in the Exeter area this week. We expect to see first cutworm larvae at 250 DD, with the majority appearing at 350-400 DD. The Exeter area accumulated 270 degree day units as of this week. The larger second instar larvae should be appearing in about two weeks, if the temperatures remain in the middle 70s. The peak of the moth flight occurred during the third week of February; however moths continue to be active in all of our monitoring sites.

**Treatment threshold before petal fall:** The treatment threshold is 15 worms (per 25 net shakes, per 1 hour search, or per 20 trees sampled with a beating sheet) before petal fall and 3-5 worms after petal fall. The microbial insecticides work well during this period if the cutworm are smaller instars.

Microbial pesticides are most effective when applied approximately 400-550 degrees after moths begin flying, when the population consists primarily of 1<sup>st</sup> and 2<sup>nd</sup> instar larvae. See your Citrus IPM manual or guidelines for details of how to sample. Insecticide treatment recommendations can be found in the citrus guidelines that you can purchase from your UC Cooperative Extension Office, or by subscription as Publication 3339 from UC DANR Communication Services (800-994-8849), or on the world wide web (<http://www.ipm.ucdavis.edu>).

Citrus Cutworm 2001  
Site Exeter 2



## Peelminer News

On February 1, 2001, Craig Kallsen and Beth Grafton-Cardwell held a morning session on the topic of peelminer at the Kern County Agricultural Extension office in Bakersfield. Approximately 70 growers and pest control advisors attended the meeting. Marta Guillen (UCR Entomology) and Dave Headrick (Cal Poly San Luis Obispo) presented their current research on the subject of peelminer. We held an hour-long discussion with the audience after the presentations. Growers noted that several unusual things happened during 2000. First, peelminer, which was previously associated with oleanders and grapefruit in Kern County, was found in all varieties of citrus in at least low levels throughout the San Joaquin Valley. Thus, its host range has greatly expanded. Second, while most orchards sustained <3% damage, some orchards sustained upwards of 70% infested fruit, especially grapefruit and fukomotos. Growers expressed concern that researchers were not certain what species of peelminer was present and what levels and types of parasitism were occurring. Dr. Godfrey (CDFA) and Dr. Headrick had sampled several locations in Tulare County during the fall, and found low levels of the solitary parasitoid *Pnigalio*. Ms Guillen pointed out that the gregarious parasitoid *Cirrospilus* was much more important than *Pnigalio* for the success of biological control in the Coachella Valley. Very little pesticide data is available for this pest species. Dr. Headrick has found that peelminer larvae are overwintering in the fruit in the San Joaquin Valley and growers were anxious to know what to do this next season.

It was obvious that we needed some quick survey data to assess the situation. A sign-up sheet was circulated and twenty four of the growers listed one or more groves that had significant peelminer damage during the 2000. During February, Dave Headrick sent several peelminer males to Marta Guillen for identification and she determined them to be *Marmara gulosa*, the same species that she worked with in the Coachella Valley. Beth Grafton-Cardwell's team surveyed 14 citrus orchards in Kern and Tulare County that still had fruit. Orchards with low infestations of peelminer had very little parasitism. Orchards with high infestations of peelminer had evidence of parasitism, but it was all of the solitary type, Eulophidae (*Pnigalio*, *Baryscapus*, and *Neochrsocharoides* sp. identified by Heraty). Thus, *Cirrospilus*, the most important parasite species in the Coachella, seems to be lacking in the San Joaquin Valley. Marta Guillen has a colony of both peelminer and *Cirrospilus* at UC Riverside. The Citrus Research Board this past week awarded John Heraty some temporary funding to keep those colonies going so that releases of *Cirrospilus* can be made this year in the San Joaquin Valley. Beth Grafton-Cardwell and Neil O'Connell will be looking for commercial orchards that had heavy peelminer infestations in 2000 for parasite releases and to conduct pesticide trials.

A color handout of peelminer/leafminer is available from your Kern or Tulare County farm advisor, or can be downloaded over the Internet from <http://plant.cdfa.ca.gov/biocontrol/citrus/citrusminers.html>

## Cottony cushion scale

Now is the time to control cottony cushion scale with vedalia beetle, before the thrips and scale spraying season begins.

Cottony cushion scale problems have diminished since we first disrupted the vedalia beetle with insect growth regulators (Knack, Esteem, Applaud) in 1998. However, since we are continuing to use Esteem for red scale and starting to use Admire for glassy-winged sharpshooter (it also disrupts vedalia) you should continue to watch for cottony cushion scale outbreaks. The vedalia beetle is far better at controlling this pest than pesticides. If you have cottony cushion scale in a block, and do not have vedalia, now is the time to release some beetles into the block. A small number of beetles (25 adults) released into a block in February-March, will have time to expand and clean up cottony cushion scale problems during March and April. We need to get the cottony cushion scale problems cleaned up before we begin using Esteem in May-July.

If you need vedalia beetles, please contact my technician Ping Gu (559) 646-6597 or ping@uckac.edu. Be prepared to give us a detailed map of where your citrus block is located. We may want to collect some cottony cushion scale from your block to help feed our vedalia colony. We would also like to help you assess whether your block already has sufficient natural numbers of vedalia that releases are not necessary.