

California Red Scale – First Biofix

	1st male flight (observed)	1st gen. crawlers (predicted)	2nd male flight	2nd gen. crawlers	3rd male flight	3rd gen. crawlers	4th male flight	4th gen. crawlers	5th male flight
Estimated Degree Days	biofix	550 DD	1100 DD	1650 DD	2200 DD	2750 DD	3300 DD	3850 DD	4400 DD
Kern	March 12	April 23							
Tulare	March 12	April 23							
Fresno	March 17	April 30							

Red Scale Lower Developmental Threshold: 53°F

Current DD (as of March 19) - Kern: 120 DD, Tulare: 97 DD, Fresno: 12 DD

The first flight of California red scale at the Lindcove Citrus Field Station in Tulare County was recorded the week of March 12, easily three weeks earlier than in 2006. This first flight also is much stronger than last year’s which was difficult to even detect. The lower developmental threshold, which is the temperature at which California red scale begins development, is 53°F. Currently, degree-day accumulations for Kern and Tulare Counties are predicted to be about 15 DD per day through early April. Degree-day calculations for CRS as well as weather summaries for selected weather stations are maintained on our website: <http://citrusent.uckac.edu/DegreeDay.htm>.

Cottony cushion scale

If you have cottony cushion scale in your orchard, now is the time to find vedalia beetles and move them into the orchard. We no longer have a colony of vedalia at the Kearney Ag Center and so you will have to talk with friends and find out who has some beetles to collect and move into your orchard. Vedula beetles do their best predatory work during March-May. When the summer heat arrives, vedalia beetles stop reproducing and stop controlling cottony cushion scale. Remember to avoid using pesticides that are harmful to vedalia during March-May if you need them to control a cottony cushion scale population. Pesticides toxic to vedalia beetle include IGRs (Esteem, Applaud, Micromite), pyrethroids (Danitol, Baythroid) and neonicotinoids (Admire, Assail).

Light Brown Apple Moth

A new pest that could potentially infest citrus has arrived in the Bay Area (Alameda and Contra Costa Counties). Our local County Ag Commissioner personnel are placing lures around the San Joaquin Valley to determine if the moth has made it this far. The following web site will help you with identification. If you see anything suspicious or new – please alert your County Ag Commissioners office or local farm advisor in the UCCE office. A pdf file showing the stages of the pest is found on this web site: http://www.dpi.nsw.gov.au/data/assets/pdf_file/76206/Light-brown-apple-moth-in-citrus-Primefact-216-final.pdf

Citrus Peelminer – First Biofix

	1st male flight (observed)	2nd male flight	3rd male flight	4th male flight	5th male flight	6th male flight	7th male flight	8 th male flight
Estimated Degree Days	biofix	580 DD	1160 DD	1740 DD	2420 DD	3000 DD	3580 DD	4160 DD
Host Plant	Stems	Stems	Stems	Pummelo grapefruit	Pummelo grapefruit	Susceptible oranges	Oranges	Oranges
Tulare	March 12							

Citrus Peelminer Lower Developmental Threshold: 55°F
Current DD (as of March 23) – Tulare: 77 DD

We placed pheromone lures in 12 citrus, willows, walnuts and other types of crops throughout Tulare County in early March and have recorded a first flight of citrus peelminer occurring the week of March 12 in southern Tulare County. The lower developmental threshold for citrus peelminer has been finalized at 55°F and this pest requires 580 degree days (DD) to complete a generation. These data were verified in field studies in 2006. Although the synthetic peelminer pheromone is only weakly attractive and does not catch very many moths, it is still useful in providing a biofix from which all later generations can be predicted. The first two moth flights (this one and the next one in 580 DD) attack willows, oleander, and stems of various crops such as walnuts. The third flight usually arrives in mid to late June (1160 DD from March 12) and will attack grapefruit and pummelo. Usually it is the fourth or fifth flight (1740 and 2420 from March 12) that attacks susceptible navel varieties (Fukumoto, TI, Atwood, Barnfield). Once the infestation starts, it is best to treat two to three flights in a row with a mixture of Micromite for the eggs and a broad spectrum pyrethroid or OP for the adults and larvae. Jocelyn Millar is continuing to study the pheromone and is researching the synthesis of a more effective compound.

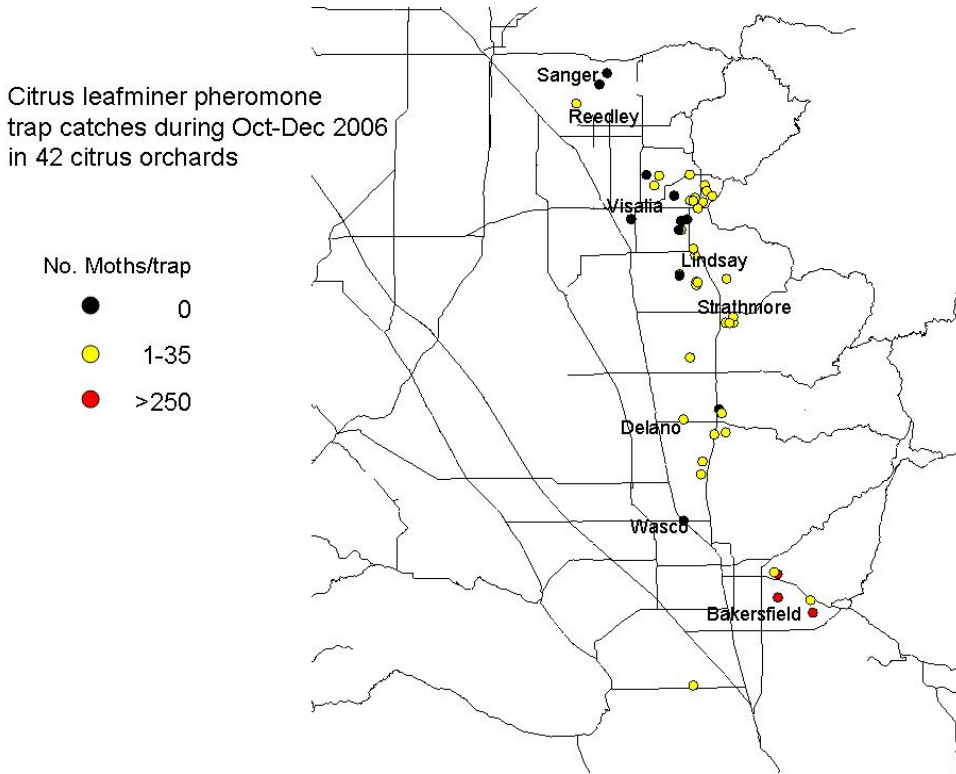
As peelminer information accumulates, we will be posting it to our website:
<http://citrusent.uckac.edu/PeelminerDD.htm>.

Citrus Leafminer

Citrus leafminer is now infesting backyard citrus trees and commercial citrus in Imperial, Riverside, Orange, Los Angeles, San Diego, San Bernardino, Ventura, Santa Barbara, and San Luis Obispo counties. During 2006 we placed highly effective pheromone traps in Kern, Tulare and Fresno counties and were able to trap moths throughout the San Joaquin Valley during October and November (See figure on next page). Kris Godfrey (CDFA) checked her San Joaquin Valley leafminer traps on May 21, 2007 and found a few moths in them. So we know that the winter temperatures didn't eliminate leafminer and the first flight has begun. Leafminer-infested leaves were found only in Kern County during the fall of 2006. We expect to see much more leaf damage in the San Joaquin Valley this year, but most likely we will see slight leaf damage in the spring, then the leaves will harden off. When the new flush appears in the fall the populations should be quite noticeable.

If you would like to trap citrus leafminer, two sources of lures and traps are:
 APTIV, Inc. 2828 SW Corbett Ave., Suite 114, Portland OR 97201,
 (877) 244-9610, www.aptivinc.com
 ISCA Technologies, Inc., 2060 Chicago Avenue #C2, Riverside, CA 92507,
 (951) 686-5008, www.iscatech.com

Distribution of Citrus Leafminer in the San Joaquin Valley 2006



While the damage that the leafminer causes to spring and fall flush of mature citrus trees is ugly, insecticides are not very effective and leafminer will not affect yield (except perhaps lemons on the coast that are continuously flushing and producing multiple crops). Therefore, we recommend that you ignore this pest in mature citrus. For information on identification see our web site: <http://citrusent.uckac.edu/leafminer.htm>. Citrus leafminer will heavily damage flush of nursery citrus and newly planted citrus and could affect growth and development of young plants. Therefore treatments may be necessary in these situations. In foreign countries, such as Israel, growers apply Admire for the first three years to newly planted trees to reduce leafminer infestations and maximize growth of the trees. We have an IR4 request to gain registration of the insecticide Intrepid (methoxyfenozide) for nursery citrus and are testing new insecticides for efficacy against this pest. Additional management guidelines are posted on the UC IPM web site: <http://www.ipm.ucdavis.edu/PMG/r107303211.html>.

Dr. David Headrick (Cal Poly San Luis Obispo) is collecting parasitized leafminer larvae and pupae to determine which parasites are attacking the peelminer in coastal and central California. If you would like to assist with this project, instructions for collecting and shipping parasitized larvae are located on our web site: http://citrusent.uckac.edu/Collect_leafminer_parasites.htm. This pest should eventually be controlled by natural enemies. Some of the same parasites that attack leafminer also attack peelminer and so having both pests present should improve biological control.

The Citrus IPM Newsletter is published by the University of California Citrus Entomology Laboratory at the Kearney Agricultural Research Center.

For information or to subscribe or unsubscribe please send an email to gregm@uckac.edu or call (559)646-6597

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