

**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 17	April 28							
Tulare	March 17	April 28							
Fresno	March 24	May 5							

**Red Scale Lower Developmental Threshold: 53°F**

**Current DD (as of April 1) - Kern: 92 DD, Tulare: 89 DD, Fresno: 43 DD**

Reports from the Lindcove Field Station and several PCAs have established a first flight biofix for California red scale during the week of March 17 for Kern and Tulare counties. Since that time, captures on pheromone cards have been steadily climbing. The lower developmental threshold for CRS is 53°F. Currently, degree-day accumulations for Kern and Tulare Counties are predicted to be about 10 to 15 DD per day through early April as weather remains seasonally cool.

Degree-day calculations for CRS as well as weather summaries for selected weather stations are available 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 ask other growers for beetles to collect and move into your orchard. Vedalia 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, Provado).

**Citrus Cutworm**

We are hearing reports of abnormally high populations of citrus cutworm in a few orchards. Prior to petal fall, slow acting insecticides such as *Bacillus thuringiensis* (Bt) or kryocide can be very effective. At petal fall, Success or Delegate alone or in combination with a low rate of a pyrethroid or organophosphate would be effective treatments.

## Citrus Peelminer – First Biofix

	1st male flight (observed)	2nd male flight (predicted)	3rd male flight	4th male flight	5th male flight	6th male flight	7th male flight	8 <sup>th</sup> male flight
Estimated Degree Days	biofix	580 DD	1160 DD	1740 DD	2420 DD	3000 DD	3580 DD	4160 DD
Host Plant	Willow/ oleanders Stems	Walnut Stems	Pummelo grapefruit	Pummelo grapefruit and susceptible oranges	Pummelo grapefruit and susceptible oranges	Oranges	Oranges	Oranges
Tulare	March 24	May 26						

**Citrus Peelminer Lower Developmental Threshold: 55°F**  
**Current DD (as of April 3) – Tulare: 51 DD accumulated**

We placed pheromone lures in 12 citrus, willows, oleanders and walnuts 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 2006-07. Although the synthetic peelminer pheromone is only weakly attractive and does not catch very many moths during the rest of the season, we use it to provide 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 24) and will attack grapefruit and pummelo. Usually it is the fourth or fifth flight (1740 and 2420 from March 24) that attacks susceptible navel varieties (Fukumoto, TI, Atwood, Barnfield). Once the infestation starts, it is best to treat once a month for two to three months with a mixture of Micromite for the eggs and a broad spectrum pyrethroid or OP for the adults and larvae. 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 and commercial citrus trees and nurseries, throughout southern California, up the coast as far as San Luis Obispo and throughout the San Joaquin Valley. Because of the 2006-07 freeze, populations were low last year in the San Joaquin Valley. With the mild 2007-08 winter and the warm conditions we have right now, we expect 2008 to be a very heavy leafminer year.

**Mature citrus** (> 4yrs of age) is generally very tolerant of leafminer damage and the pest should be ignored, as spraying is likely to reduce natural enemies needed for other pests. An exception is coastal lemons that flush frequently and so sustain heavy populations of leafminer. Long-term leaf damage on the lemon crop can weaken trees, making them susceptible to secondary pests and defoliation by wind. There are experiments in progress in Ventura to determine if lemon yields are being reduced as the season progresses.

**New plantings and nursery citrus tree** growth can be affected by citrus leafminer. In this case, systemic applications of Admire (imidacloprid) and periodic treatments with foliar insecticides will help to reduce, but not eliminate leafminer. There is now a section 24C registration of Intrepid (methoxyfenozide) for nonbearing citrus. See the UC IPM guidelines for more information on treatments.

<http://www.ipm.ucdavis.edu/PMG/r107303211.html>

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

For more information on citrus leafminer see our web page: <http://citrusent.uckac.edu/leafminer.htm>

### **New Insecticides and Miticides**

**International MRLs:** It takes several years after an insecticide is registered in the United States to establish maximum residue levels MRLs for the entire international community. Foreign countries can reject citrus shipments if they determine that a pesticide has been used that they have not established an MRL for or if the residues exceed that country's MRL. If you decide to use one of the new insecticides or miticides noted below on bearing citrus, you should avoid exporting the fruit to a county that does not have an established MRL, in order to eliminate the risk of rejection. For the new insecticides listed below, spinetoram does not have any international MRLs established, and spiroadiclofen, fenpyroximate and abamectin have MRLs established in some, but not all, exporting countries.

**Delegate** insecticide (spinetoram), is a compound that is very similar to Success (spinosad). Delegate is thought to be more persistent than Success and so may show longer control of citrus thrips and katydid. Because Delegate and spinosad come from the same chemical class, when you use one it selects for resistance to both and so you should not use both of them in the same orchard.

**Envidor** (spiroadiclofen), **Zoro** (abamectin, the same as Agri-Mek), and **Fujimite** (fenpyroximate) are miticides registered in 2007 that have good efficacy against citrus red mite and other spider mite species found in citrus. They all depress predatory mite populations needed for citrus thrips control.

These new registrations are subject to international maximum residue level regulations, and citrus treated with these chemicals may be restricted from export markets until MRLs are issued by the receiving country.

**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](mailto:gregm@uckac.edu) or call (559)646-6597

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