

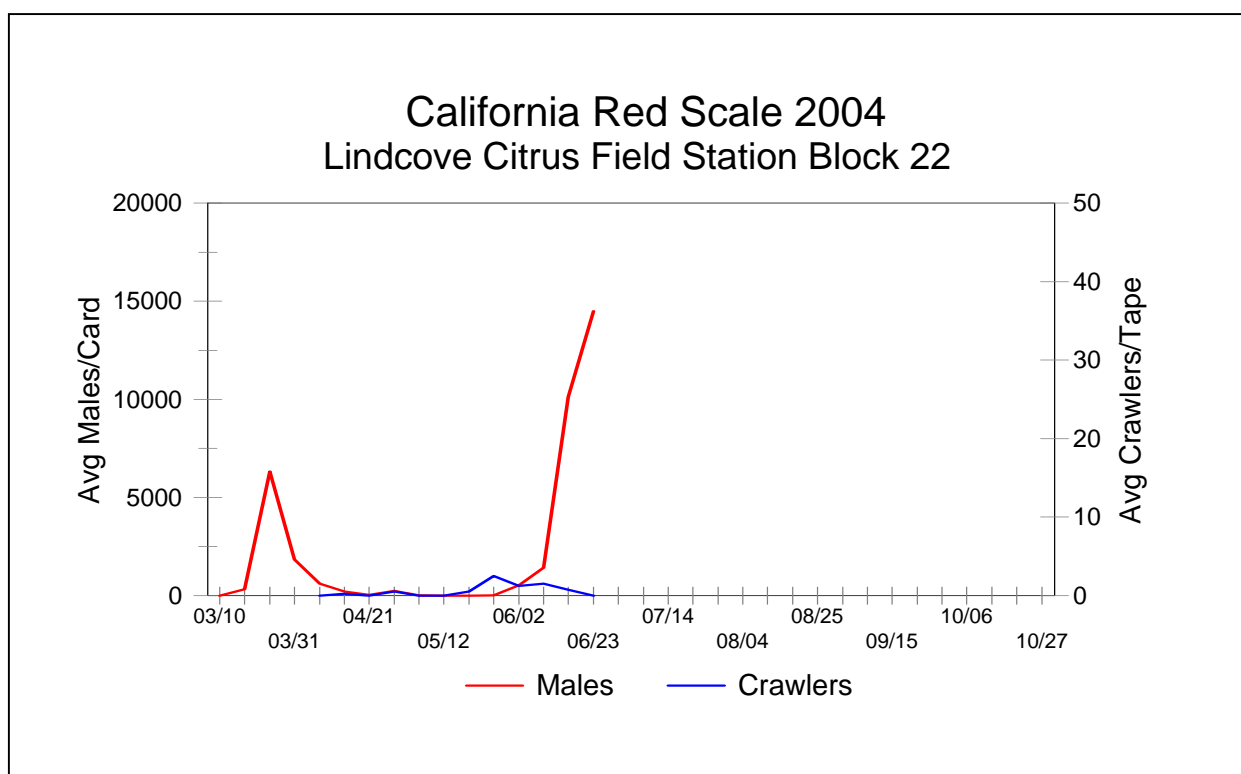
California Red Scale – Crawlers are Emerging

	1st male flight	1st gen. crawlers	2nd male flight (predicted)	2nd gen. Crawlers begin	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	Mar 8	Apr 26	May 31	June 28					
Tulare	Mar 15	Apr 26	May 31	July 5					
Fresno	Mar 22	May 3	June 7	July 12					

Current DD (as of June 21) - Kern: 1590, Tulare: 1490, Fresno: 1380

Male California red scale continue to be very active at the Lindcove Citrus Field Station; however, the second emergence of red scale crawlers is predicted to begin in the next two weeks for most of the citrus growing areas of the San Joaquin Valley. Peak crawler emergence period would then be 7 – 10 days after the crawlers first get started. **Peak crawler emergence is the best time to apply organophosphate (Supracide, Lorsban) and carbamate (Sevin) insecticides. The white cap stage is the best time to apply insect growth regulators (Esteem, Applaud).** Insect growth regulators prevent the scale from molting so you want to apply it just before they molt to the second instar. Usually the molt stage occurs about 2 weeks after peak crawler emergence.

Degree-day calculations for CRS are maintained on our website: <http://citrusent.uckac.edu/DegreeDay.htm>.



Citrus Peelminer

We have experienced about 300-400 more degree-day units this year than previous years. This means that both plants and insects are developing faster than usual. In 2001-2003 we observed the peelminer begin to attack grapefruit and pummelos around July 1. This year, it began attacking them during the first two weeks of June. We recently started a colony of parasites at the Kearney Ag Center. As soon as we have enough parasites, we will begin releases in a number of locations. The releases have not shown a high level of peelminer control in previous years when we released 100-200 parasites per orchard. We are hoping to expand the rearing and be able to release 1,000+ per orchard.

You can help us understand the biology of this pest and keep track of it better by attending the field day on July 1, where we will demonstrate how to tell live from dead larvae and how to sample your orchard to estimate the level of damage. We also have a web site where you can enter your sampling data to let us know about your peelminer problem:

http://gis.uckac.edu/Peelminer/CalRef_Plmnr.htm.

Citrus Peelminer Field Day

Dr. Beth Grafton-Cardwell

Dept. of Entomology, UC Riverside,
stationed at the Kearney Ag Center
559-646-6591

Focus on Field Sampling

July 1, 2004

9:00 – 10:00 am

Bob Ward Ranch

2.5 miles North of Exeter, CA on Kaweah Drive

From Exeter head North on Kaweah Drive (Hwy 65),
Continue North through the Hwy 198 & Kaweah Drive intersection,
Continue on Kaweah Drive ¼ mile past Avenue 304,
Pummelos on the East side of the road.

Please park on dirt shoulder off of Kaweah Drive.

This field day will teach you to how to sample for citrus peelminer in your citrus orchard. You will learn how to better identify live versus dead citrus peelminer larvae.

Cottony Cushion Scale – Vedalia is no longer active

Vedalia beetles returned to San Joaquin Valley orchards during March-May and did an excellent job of eliminating cottony cushion scale in most orchards. Usually, vedalia needs 6-8 weeks to clean up a cottony cushion scale population and it needs to do that before insecticide treatments kill it or the heat of summer arrives. Thus, the best time for vedalia beetle activity is the March-May period. When vedalia arrives late (May-June) it often doesn't have enough time to complete its work. Insecticides that are toxic to vedalia beetle include: pyrethroids (Danitol and Baythroid), neonicotinoids (Assail, Provado, Admire), and insect growth regulators (Esteem and Applaud). As of this time, vedalia beetle has finished the work that it is going to do this year. If you still have a significant population of cottony cushion scale (more than 15% of the trees are infested) and you have checked carefully and find that the scale are still alive, then Supracide, Malathion, Sevin, or Applaud can be used to reduce the cottony cushion scale. Our studies are showing that these insecticides do not work well in Mar-May when the cottony cushion scale is in the adult stage. The insecticides work much better in June or July when the adult females are dead and the population consists of small stages on the leaves of the tree. The addition of 0.5% oil and of course good coverage of the tree aid the efficacy of these treatments.

If you would like to see photos of cottony cushion scale or vedalia beetle, see the brochure, "Stages of the Cottony Cushion Scale (*Icerya purchasi*) and its Natural Enemy, the Vedalia Beetle (*Rodolia cardinalis*)": <http://anrcatalog.ucdavis.edu/merchant.ihtml?pid=5525&step=4>

Citricola Scale

Citricola scale is very heavy in many blocks this year and similar to the other insect pests, it is developing faster than usual. At this time of year, the females have already laid 1,000 eggs each and the crawlers are moving out onto the leaves. I suggest that growers wait to treat until all the eggs are hatched. This usually occurs around August 1, however this year, because of the warm temperatures, they will probably all have emerged by mid July. Lorsban is still the best control agent, probably because of its fuming action. Other organophosphates and carbamates are also effective. The foliar neonicotinoid Assail can be effective in reducing their numbers and has a good fit in the early season (March-May) since it will kill the adult females. Applaud will control citricola scale, although slowly because it has to affect them as the eggs hatch or the nymphs molt. Biological control is ineffective for this pest and so pesticides are necessary. Do not let the populations build up to high numbers or you will see fruit production reduced in the next year.

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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