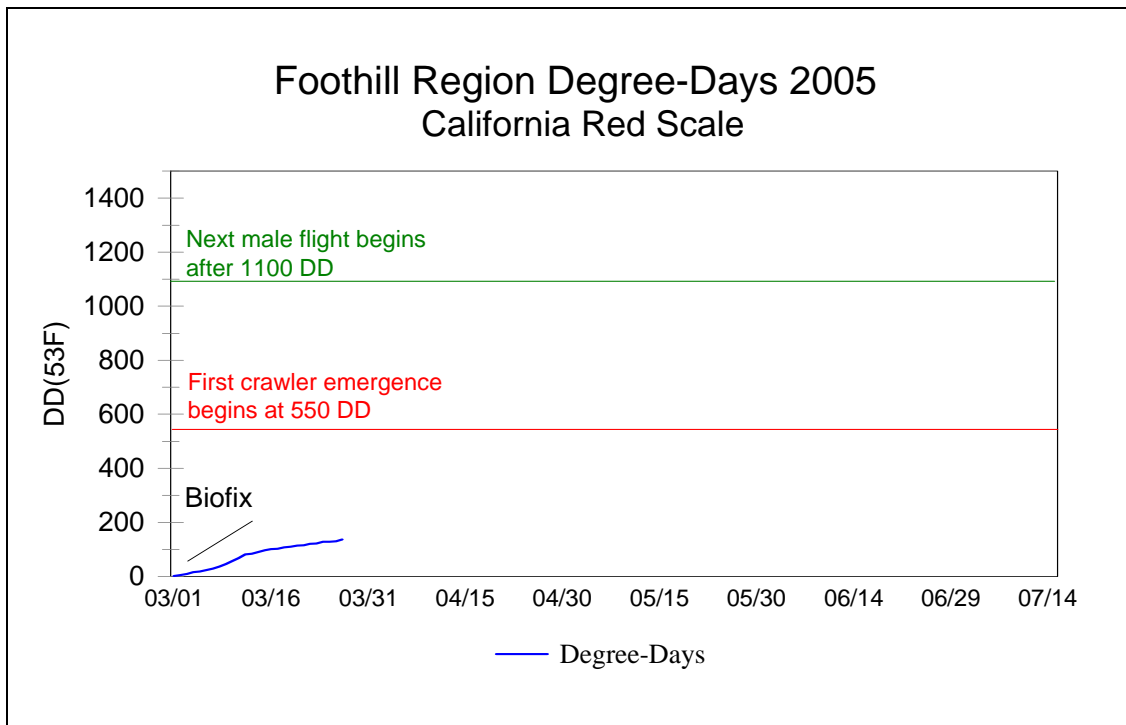


California Red Scale – Preparing for First Crawlers

	1st male flight	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	Mar 1	April 25							
Tulare	Mar 1	April 25							
Fresno	Mar 8	May 2							

Current DD (as of April 4) - Kern: 250, Tulare: 220, Fresno: 200

The first flight of California red scale at the Lindcove Citrus Field Station has been fairly light this spring but started about a week earlier than last year due to warm weather in February. If the warm weather continues, such as we have seen during the last week of March, first crawler emergence could begin as early as the end of April. Degree-day calculations for CRS are maintained on our website: <http://citrusent.uckac.edu/DegreeDay.htm>.



Katydids

Katydids have become a serious problem because citrus growers have shifted to using soft pesticides such as Esteem for red scale and Success for citrus thrips instead of organophosphates. Katydids are very sensitive to organophosphate insecticides. In stone fruits, Success works very well for controlling katydid. However, in citrus, katydid emergence continues for a much longer period of time and Success treatments for citrus thrips are not necessarily timed for small katydid instars or don't last long enough to get the nymphs that emerge later in the season. In the last 4-5 years, growers have been routinely tank-mixing low rates of organophosphates (Lorsban, Dibrom, Cygon) or pyrethroids (Danitol, Baythroid, Renounce) to the Success thrips treatment to control katydid, or treating with a full rate of pyrethroid for both pests. A newly registered insecticide that has a lot of promise for katydid control is Micromite (diflubenzuron). It is an insect growth regulator that prevents the nymphs from molting properly and prevents young female katydids from producing viable eggs. Remember that it won't kill the katydids until they molt and so it takes about 7-10 days to take full effect. Therefore the best use of this chemical is likely to be prior to petal fall.

Cottony Cushion Scale

We discovered this year, that yellow sticky cards that are hung on the outside of the tree will catch vedalia beetles as they are arriving in citrus orchards. We caught beetles during February and then could find other vedalia stages attacking cottony cushion scale in the beginning of March. This is a great early warning system to find out if you have vedalia arriving – try it yourself next year.

We are surveying a number of orchards and cottony cushion scale levels seem to be low this year. Remember that 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 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). You should wait to use these insecticides in blocks with cottony cushion scale until the vedalia declines naturally in June. If the vedalia does not sufficiently control the cottony cushion scale, then Supracide, Malathion, Sevin, or Applaud can be used in June to further reduce it. Our studies are showing that these insecticides do not work as 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. So let the vedalia do its work now, and spray later if the population isn't cleaned up to your satisfaction.

We finally have a small colony of vedalia beetles at the Kearney Ag Center, and if anyone needs a starter colony for their orchard, they can contact Ping Gu (646-6597) ping@uckac.edu.

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/pdf/8051.pdf> .

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