CALIFORNIA RED SCALE (CRS)

Anoidiella aurantii

Description:

Adults:

- Female scales remain beneath a circular, gray to reddish-tan cover which is firmly attached to wood, fruit, or leaves. Females molt twice from the crawler stage to maturity. Males molt four times. At maturity, the adult male emerges as a tiny, yellow to light reddish-brown, two-winged insect with long, thread-like antennae, and a distinct dark band across its back.

Crawler Stage:

- The female California red scale gives birth to live young which, after emerging from beneath the female scale's cover, crawl to seek suitable resting sites. The pin-head sized crawlers are round and yellow.

White Cap Stage:

- Once the crawlers settle and begin to feed they secrete white cottony filaments to form a covering. This cover grows, becomes grayish, and solidifies until only the center of the white cap remains (nipple stage) prior to the first molt.

Second Instar:

- After the first molt, male scale covers begin to elongate while the covers of female scales remain circular.

Adult CRS

CRS Crawler Stage

CRS White Cap Stage

Hosts:

- Prime hosts are lemons, grapefruit, Valencia, navel, and Man darin oranges. Occasional hosts are grape, olive, rose, night-shade, eucalyptus, fruitless mulberry, and walnut.

Damage:

- Scales feed on fruit, leaves, and branches. Affected fruit is downgraded. Severe infestations cause leaf and fruit drop, especially in late summer, limb dieback, and tree death.

Leaf Infested with CRS

Phenology:

- Three to four generation per year in the San Joaquin Valley. JS can have between 1 and 5 generations per year, according to the latitude and climatic conditions.
- In coastal and other districts of southern California two to three generations may appear.
- Each generation requires about 1145 D° F or 636 D° C.

Life Stages & Degree Days:

	Average D° F	Average D° C
• First male to crawler	360	200
• Crawler to second instar	316	175
• Second instar to adult	294	163
• Adult	174	97
• Generation time	145	636
• (Threshold temperatures)	53° F	11.7° C

Lure Type and Maintenance:

*Please note that the lure recommendations can change depending on the trap being used.

- **PHEROCON® CRS controlled release septa;** replace at 4-week intervals.

Lure Storage:

- Store in unopened factory sealed packages in a cool place (< 74° F or 24° C maximum) for short periods or refrigerate longer term.
- Refrigerate or freeze unopened packages to carry over for annual storage.

Trap Design:

- PHEROCON V Trap.

Placement Time:

- Install some traps two weeks before earliest known emergence and prior to male flight; monitor twice weekly for appearance of first male then install remaining traps or consult University Extension Service personnel for timing of flights in region.

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CALIFORNIA RED SCALE (CRS), *Anoidiella aurantii*

Placement Pattern:

- Space evenly through orchard and in vicinity of known scale infestation "clumps".
- Place traps at least four rows in from orchard edge.
- 6-8 feet or 1.8-2.4 meters high in northeastern quadrant of tree: just inside canopy.
- Place at about 1100 D° F or 611 D° C after first flight bio-fix for second flight.

Trap Density:

- As treatment threshold indicator – one trap per 2.5 acres or 1 hectare.
- As survey monitor – one trap per 5 acres or 2 hectares.
- As monitor for beginning, end and peak of flight – one trap per 5 acres or 2 hectares and no less than 3 traps per any uniform grove.

Trap Maintenance:

- Check traps at least once each week during the male flight period.
- When monitoring male emergence or surveying infestations, change liners at each count or sooner when dirty.
- When using traps for economic threshold determination, collect traps at the end of the flight period, then count.
- Replace lures every 4 to 5 weeks, depending on ambient temperature.

Recommendations:

- Check pheromone trap and/or sticky tape catches twice a week until the biofix is established; thereafter, check trap catches weekly.
- Traps may also be removed and covered in plastic to conduct counts at a lab.
- Follow Trécé's recommendations for replacing pheromone lures.

Source: Recommendations and certain other sections were sourced from UC IPM.

Note, always:

- Use only 1 pheromone lure per trap.
- Count and record captures as recommended.
- Change trap as needed.
- Discard lures in trash far from the area of use and remove trash afterwards.
- Follow recommendations.
- Contact local extension authorities and consultants for regional advice.

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