

2024 Memo -California red scale

May 06, 2024

California red scale is a key pest of citrus in the SJV. Its life cycle starts as crawlers produced by overwintering females from the past season. Crawlers move and find a suitable place to start feeding. Once they have settled, they do not move.

What's happening with the SJV CRS population?

In 2024, biofix of CRS was called out for March 10 in Kern, Tulare, and Fresno Counties and for March 15 in Madera Co. Based on CIMIS data degree day calculation **expect the first generation** in 1-3 weeks, based on location of your orchard. Current DD for four counties are

County	DD	Life stage
Kern	443	First generation crawlers will start emerging in 1-3 weeks. Spray if needed. If using mating disruption, deploy prior to second flight
Tulare	501	
Fresno	444	
Madera	401	

Check biweekly updates for DDs on https://lrec.ucanr.edu/Citrus_IPM/Degree_Days/

White dots on the twig are first instars of California red scale.



When to spray?

Crawlers and first instars are the most susceptible stage (thin wax layer). The first and second generations have more synchronized population. Current population in the SJV is adults, expect crawler emergence in 1-3 weeks.

CRS management: mating disruption, insecticides, *Aphytis*! Points to remember when choosing management strategy.

- Pheromone cards **overestimate scale numbers in *Aphytis* release blocks** –as *Aphytis* attacks third instar females males numbers can be high even when female numbers are low.
- Pheromone cards **underestimate scale numbers Insect growth regulator/mating disruption** –as these treatments affect males more than they affect females. Use a threshold of 50 scales per flight.
- When Movento/Admire Pro is used, **CRS males on pheromone cards are not a reliable predictor**, especially if you have a history of scale infestation as these products do not kill scale on wood or scale.

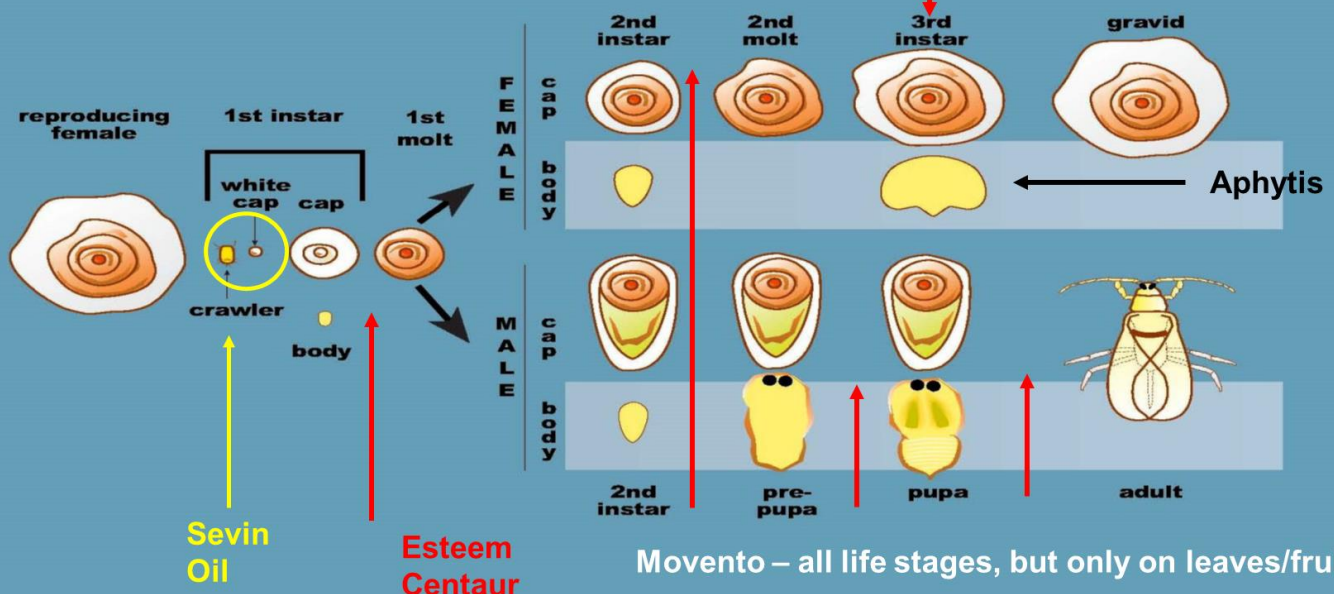
California red scale management choices – UCIPM Guidelines

Management choices	Efficacy	Selectivity	Spectrum
Mating disruption (Checkmate CRS)	Moderate: Effectiveness varies	Nontoxic	Narrow: CRS
<i>Aphytis melinus</i>	Moderate: effectiveness varies	Nontoxic	Narrow: CRS
Oils (415, omni)	Moderate: short residual	Short term effect on all arthropods	Broad: most pests
Esteem (Pyriproxyfen)	Moderate: Emerging resistance issues	Toxic to beetles	Narrow: CRS
Centaur (Buprofezin)	Moderate	Toxic to beetles	Interm: CRS, Citricola
Movento (Spirotetramat)	Moderate: Doesn't control scale on wood	Toxic to predatory mites	Interm: CRS, ACP
Sevin (Carbaryl)	Moderate: Resistance issues	Toxic to most natural enemies	Broad; CRS, Citricola scale, FRB

Most pesticide products work best on immatures.
Mating disruption – before male flight. Aphytis – 3rd instar females.

Aphytis affects 3rd instar females

California Red Scale Life Cycle



Recommendations for chemical control of California red scale

- Timing: treat the stage that is most sensitive
- Treat generations 1 or 2 when the scale population is uniform in stage (exception is spirotetramat, which seems to work in fall)
- Use the selective insecticides that allow natural enemies to survive when you can
- Rotate products to avoid resistance
- Good coverage: 750-1500 gpa/acre (7000-15000 l/ha) (spirotetramat 250 gpa/acre)
- Drive slowly! < 1.5 mph (2.4 kph)

Links to Pesticide trials on CRS

- [CRS trial 2015](#)
- [CRS trial 2016](#)
- [CRS trial 2017](#)
- [CRS trial 2018](#)
- [CRS trial 2019](#)
- [CRS trial 2022](#)
- [CRS trial 2023-1](#)
- [CRS trial 2023-2](#)

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