

Update on Vine Mealybug Trapping and Distribution

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Pheromone trapping and sampling for vine mealybug (VMB) [*Planococcus ficus* (Signoret) (Homoptera: Pseudococcidae)] began throughout the state in 2003 and continued in 2007. The level of trapping in 2007 was about 75% of that in 2006. The reasons for the decline are that most counties know their infestation status, the approximate areas of infestation, and there is no state-funded program for VMB detection or trapping. Continued funding from USDA-APHIS was used to purchase pheromone traps and lures for use in the 2007 season. These traps and lures were made available to anyone requesting traps from the California Department of Food and Agriculture (CDFA). A total of 22 counties submitted vine mealybug samples to the CDFA Plant Pest Diagnostics Laboratory with 19 counties submitting traps, 5 counties submitting insect or plant samples, and 10 counties submitting samples from certified grapevine nurseries. The CDFA Plant Pest Diagnostics Laboratory examined approximately 940 traps and 33 insect or plant samples for the presence of VMB in 2007.

The results of the trapping and sampling programs from 1994 – 2007 can be found in Appendix A. The results are based on information from the CDFA Pest Damage Records (PDRs) and other information submitted by agricultural commissioner personnel and UCCE scientists. There were no new county records for VMB in 2007.

Vine mealybug infestations continued to slowly spread in 2007. There are 17 infested counties, 23 counties that have been surveyed and are currently negative for VMB, one county (Amador County) currently under an eradication program, and four counties where the VMB status is questionable (Table 1 and Figure 1). Most notable events for 2007 were the successful completion of an eradication program in El Dorado County, and the containment of the VMB infestation to the areas found in 2004 in Amador County. In Lake and San Benito Counties, two counties with questionable VMB status, a few males (less than 5 per trap) were found only in traps located next to a winery or a truck scales during crush. No other males were trapped in these areas at other times in the season. This suggests that the male mealybugs are coming from loads of grapes being brought into these counties for crush. In San Mateo and Stanislaus Counties, two additional counties with questionable VMB status, a few males have been trapped sporadically in previous years, but no males were trapped in 2007. The sites in these two counties require further investigation.

Table 1. The counties that are known to be infested with VMB, the counties that have been surveyed and found to be negative for VMB, the counties with a questionable VMB status, and the county with an eradication program for VMB.

Known infested Counties	Counties not known to be infested	Counties with questionable status	County with an eradication program
Alameda	Butte	Lake	Amador
Amador	Calaveras	San Benito	
Fresno	Colusa	Stanislaus	
Kern	Contra Costa	San Mateo	
Merced	El Dorado		
Monterey	Glenn		
Napa	Imperial		
Riverside ^a	Kings		
Sacramento	Los Angeles		
San Joaquin	Madera		
San Luis Obispo	Marin		
Santa Barbara	Mendocino		
Santa Clara	Placer		
Solano	San Bernardino		
Sonoma	San Diego		
Tulare	Santa Cruz		
Yolo	Shasta		
	Sutter		
	Tehama		
	Trinity		
	Tuolumne		
	Ventura		
	Yuba		

^aOnly Coachella Valley is infested with VMB.

Vine Mealybug Status in California

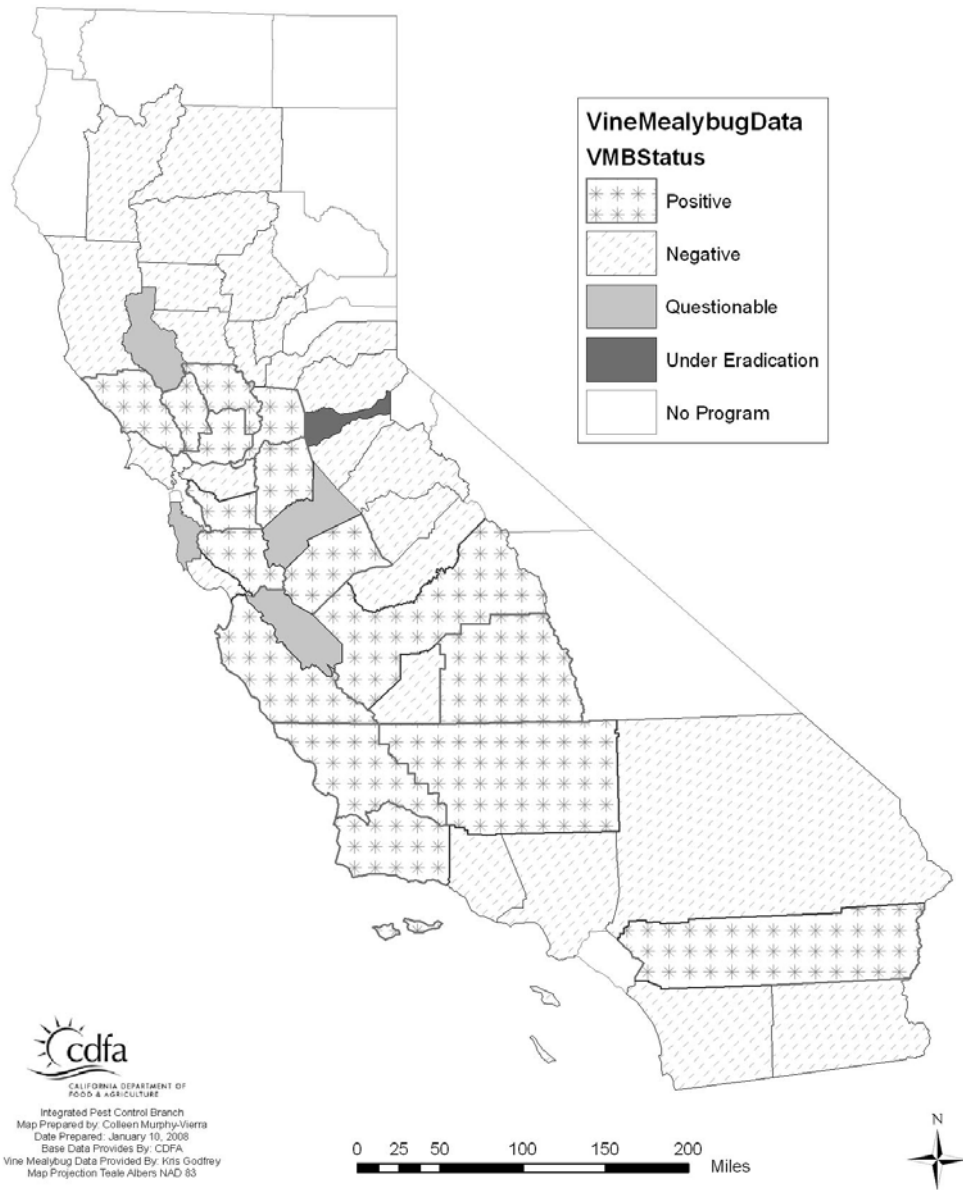


Figure 1. The distribution of vine mealybug within California in 2007.

Appendix A

Vine Mealybug Detection Summary

- Alameda** County – VMB males and females found in 2003. No new sites reported for 2004, 2005, or 2006. VMB females were found at a vineyard in 2007. This vineyard had been identified as infested in previous years.
- Amador** County – VMB males found at one site in 2004, and females found at same site in 2005. An eradication program began in 2005 and continues. In 2006, males were trapped at the site of the eradication program. In 2007, the eradication program continued at the same sites treated beginning in 2005. No other vineyards within the county were found to be infested.
- Butte** County – Trapped in 2003 and 2004, and no VMB found.
- Calaveras** County – Trapped in 2004 and 2007, and no VMB found.
- Colusa** County – Trapped in 2004 and no VMB found.
- Contra Costa** County – Trapped in 2003-2005, and no VMB found.
- Del Norte** County – No grape acreage
- El Dorado/Alpine** Counties – Found one site in 2002 and began eradication program. During the trapping program conducted county-wide in 2003, male VMB were found only at the eradication program site. Subsequent detection activities in 2004 - 2007 were negative for VMB. The small infestation of VMB in El Dorado County has been eradicated.
- Fresno** County – Found VMB at one site each in 1998 and 1999. Trapping in nurseries in 2004 found no new sites. Two new sites were found in 2005. In 2006 and 2007, no samples were submitted to CDFA for verification of VMB.
- Glenn** County – Trapped in 2003-2005, and no VMB found.
- Humboldt** County – No trapping program. Small acreage of grapes.
- Imperial** County – Trapped in 2004 and 2005, and no VMB found.
- Inyo/Mono** Counties – No grape acreage.
- Kern** County – Found VMB at one site in 1998, two sites in 1999, and one site in 2002. In 2004 – 2006, approximately 13 nursery blocks had VMB males present, and two commercial production sites had VMB females present. In 2007, nursery sampling found 8 blocks with VMB males.
- Kings** County – Trapped in 2004, and no VMB found.
- Lake** County – Found one site with VMB males in 2004 near a truck scale. In 2005, no males were found in traps. In 2006, males were found in traps in the same location as in 2004, very late in the season. Delimitation trapping was conducted in 2007. From these traps only 2 traps, located near the truck scales, contained VMB (fewer than 5 males per trap) in September.
- Lassen** County – No grape acreage.
- Los Angeles** County – Samples submitted in 2003 were negative. In 2004 and 2005, no VMB were found in either traps or samples.
- Madera** County – One nursery was found to have VMB males in 2004. In 2005 and 2006, no males were found in traps. Males in the traps in 2004 may have come from surrounding vineyards that have since been removed. In 2007, nursery trapping was negative for VMB.

Marin County – Trapped in 2004 – 2006, and no VMB males found.

Mendocino County – Trapped in 2003 and 2004, no VMB found. In 2006, samples of mealybugs on grapevines were submitted, but were not VMB.

Merced County – VMB males found at one site in 2004, and females found at the same site in 2005. Males were trapped at this site in 2006 and 2007.

Modoc County – No grape acreage.

Monterey County – Female VMB were found at one site in 2002. In 2003, 17 sites with males and two sites with females were found. In 2004, an additional 13 sites with males and three sites with females were found. In 2005, five additional sites with males were identified. In 2006, males were trapped at known infested sites, and one additional site with females was identified. In 2007, crawlers were found at a new site, and males were found at known infested sites.

Napa County – In 2002, 8 sites with males and 6 with females were found. In 2003, an additional site with males and 14 sites with females were found. In 2004, 9 sites with males and 11 sites with females were found. In 2005, 33 sites with males and 6 sites with females were found. In 2006, 43 sites with males and 18 sites with females were found. Many of the sites in 2006 were at or near sites that had been infested in previous years. Only two sites with males were remotely located compared to previous years. In 2007, males and female VMB were found at or near sites that were known to be infested.

Nevada County – No trapping program.

Orange County – No grape acreage.

Placer County – Trapped in 2004, and no VMB found.

Plumas/Sierra Counties – No grape acreage.

Riverside County – VMB was found throughout the Coachella Valley beginning in 1994. To date the entire valley is infested.

Sacramento County – VMB females were found at one site in 2002, and at an additional site in 2003. In 2004, males were found at two additional sites. In 2005, 7 traps were positive for VMB but the locations of the traps were not known. In 2006 and 2007, the grapevine nurseries in the county were trapped, and no VMB were found. Also in 2007, a plant sample was submitted that was negative for VMB.

San Benito County – Males were trapped at the same locality in years 2003 – 2007. These sites are next to a winery that imports grapes into the county. The males are typically caught at about the time of grape crush.

San Bernardino County – Trapped in 2003, and no VMB found.

San Diego County – Trapped in 2004 and 2006, and no VMB found.

San Francisco County – No grape acreage.

San Joaquin County – In 2003, males were found at three sites and females at 6 sites. In 2004, males were trapped at 25 sites and females were found at an additional two sites. In 2005, males were trapped at one nursery site, and females were found at another site. In 2006, females were found at 6 sites and males were trapped at three sites. These detections through the years show a slow spread of VMB from the northern part of the county to the south and east. In 2007, the submitted plant samples and traps were negative for VMB.

San Luis Obispo County – In 2001 and 2002, VMB females were found at one site. In 2003, males were trapped at 10 sites and females were found at five sites. In

- 2004, males were trapped at 6 sites and females were found at an additional 6 sites. In 2005, males were trapped at 8 additional sites. In 2006 and 2007, the males that were found were in areas known to be infested with VMB.
- San Mateo** County – Trapped in 2003 and 2004, and no VMB were found. In 2005 and 2006, males were trapped at one nursery site. In 2007, no males were trapped at the nursery site.
- Santa Barbara** County – In 2000 and 2002, VMB females were found at one site. In 2003, males were trapped at five sites and females were found at three sites. In 2004, females were found at four sites. In 2005, females were found at a site where male VMB had been found in 2000. In 2007, 3 sites with VMB females were found and were located near known infested areas.
- Santa Clara** County – In 2003, males were found at two sites and females found at one site. In 2004, an additional two sites were found to have VMB males and one additional site was found to have females. In 2005, males were trapped at sites already known to have VMB present. In 2006, traps were placed at new locations within the county, and no VMB were found.
- Santa Cruz** County – Trapped in 2004 – 2006, and no VMB were found.
- Shasta** County – Trapped in 2003-2005, and no VMB found.
- Siskiyou** County – No trapping program, but less than 30 acres of grapes.
- Solano** County – In 2004 – 2007, no males were trapped at nursery sites. In 2004, one commercial vineyard was found to have female VMB.
- Sonoma** County – In 2002, four sites were found to have males and four sites were found to have females present. In 2003, an additional 33 sites were found to have VMB males and 6 sites to have VMB females. In 2004, 26 sites were found to have males and two sites were found to have females. In 2005, 8 additional sites with males and one additional site with females were found. In 2006, most of the finds were at or near known infested sites, with the exception of two sites near Sebastopol. In 2007, males were trapped at or near known infested locations.
- Stanislaus** County – In 2004, one site with VMB males was identified. The individual who submitted the trap said that this vineyard had a moderate infestation of VMB. In 2005, trapping at nurseries found no VMB. In 2006, one trap placed at a nursery had a small number of VMB males in one sampling period. Continued sampling at this site in 2006 found no other VMB males. In 2007, no males were trapped in the nurseries.
- Sutter** County – Trapped in 2003, 2004, 2006, and 2007, and no VMB found.
- Tehama** County – Trapped in 2003 – 2005, and no VMB found. In 2006, a sample of mealybugs was submitted from a vineyard, but the mealybug was *Ferrisia gilli* not VMB.
- Trinity** County – Trapped in 2003, 2004, and 2006, and no VMB found.
- Tulare** County – Nurseries were trapped in 2003 and 2006, and no VMB males were found. In 2004, 11 sites with males and two sites with females were found. In 2005, two sites that had had males in previous years were found.
- Tuolumne** County – Trapped in 2003 and 2004, and no VMB found.
- Ventura** County – Trapped by Phil Phillips (UCCE) in 2003 – 2007, and no VMB found.
- Yolo** County – Trapped in 2003 and 2004, and no VMB found. In 2005, one site with females was found. In 2006, the nursery trapping found no VMB males, and

females were found at the same site as in 2005. Plant and insect samples submitted in 2007 were negative for VMB.

Yuba County – Trapped in 2004 and 2006, and no VMB found.