

USING VINE MEALYBUG TRAPS IN THE NORTH COAST

Rhonda Smith, UCCE Viticulture Advisor, Sonoma County
Lucia Varela, UCCE North Coast IPM Advisor, Sonoma County

Vine mealybug (*Planococcus ficus*) was found in the North Coast in the summer of 2002 and since that time growers in Napa and Sonoma have participated in aggressive pheromone trapping programs to locate infestations in their vineyards. Pheromone traps attract the adult male vine mealybug and are used to help locate infestations of adult females and immature stages of the pest within a vineyard. In 2004, trapping occurred in about 500 properties in Sonoma County. In over half of these, growers volunteered to set out traps beginning in June and return them to the UC Cooperative Extension office bi-monthly into November. The remaining properties were trapped by the Sonoma County Agricultural Commissioner's staff that set out traps one time for 3-4 weeks in September. In Napa County, the Agricultural Commissioner's office conducted a coordinated trapping program by placing 7 traps every square mile in a grid that concentrated on vineyard properties.

What we learned in 2004

In Sonoma County 13 infested sites were found in 2003. In those sites, the number of infested vines ranged from a few plants to hundreds of vines in several blocks. What was learned in 2004 with more extensive trapping was not totally unexpected. There are many vineyards scattered throughout the county that trapped male mealybugs – yet only one new

infestation was found. In the majority of vineyards where males were trapped, those insects cannot be associated with a known infested site. The bottom line is there are probably twice as many vineyards that are infested in Sonoma to some degree than have currently been located.

Finding these infested sites is important and pheromone trapping is an essential tool that growers and PCAs are using to help accomplish this task. Male vine mealybugs are not found in North Coast traps earlier than May, so trapping between December and April is not recommended because males are not normally caught in this period. Trap catch numbers often provide clues to the proximity of an infestation – depending on the month and the relative numbers that are found in the trap. The following interpretation of what vine mealybug catch numbers mean is based on the North Coast experience and is no doubt different in growing regions that are warmer, have a high percent parasitism at the end of the season or that have a higher incidence of severely infested vineyards.

What do the trap catch numbers mean?

Early summer: It is difficult to interpret trapping results when very few males are caught in a trap. In early summer, it is common to have low trap catch numbers (under 10 per month per trap) yet all this tells you is that infested vines are either few in

number and close or high in number and further away. Vine mealybug populations increase over the summer and if left untreated, catch numbers will follow. Then again, if the first trap you set out in June catches what is considered in the North Coast to be a significant number of males for that time of year (over 10 per trap per month), then the trap is likely quite close to infested vines. Moderately to severely infested vines are likely to be in the same block as the trap or in the block next to it.

Late summer – fall: When a significant number of males (over 10 per trap per month) are caught in a trap later in the season (e.g. September), an infestation is usually always located close to the trap. If the trap density is increased in the vicinity of the original positive trapping site, there is a chance that the catch numbers in those traps will assist in the discovery of the infestation.

Low numbers (around 10 per month per trap) found in September through October means one or two things. One possibility is that your vineyard or an adjacent vineyard may have very few infested vines which have very low populations of vine mealybugs on them. Such vines generate relatively few male insects. If earlier in the year, your trap catches a few males in late summer, then the population of mealybugs on those vines has increased which means those vines are not being treated. The

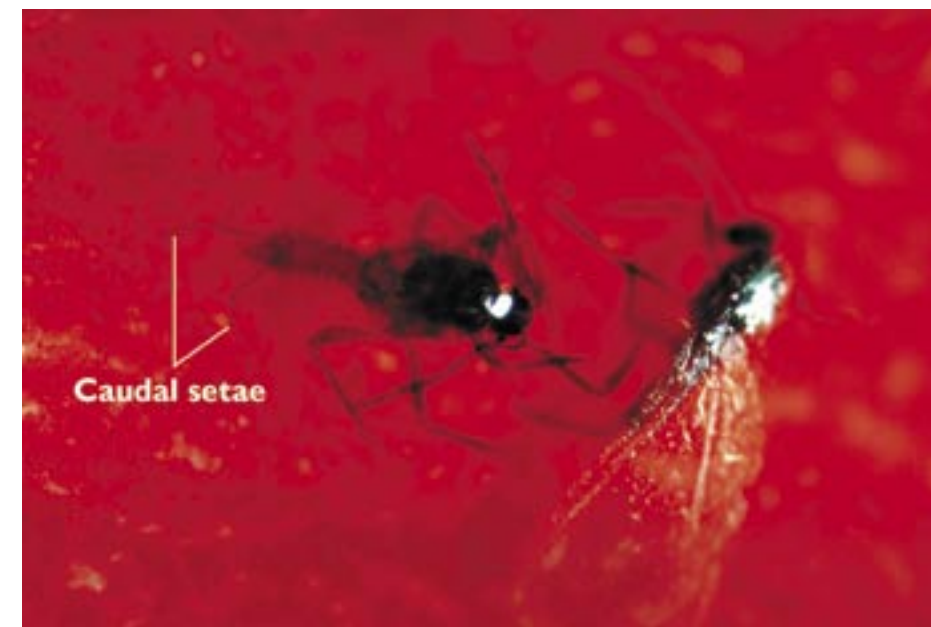
other possibility is that your neighbor may have treated for a mealybug infestation and has successfully reduced the population to a level that now generates few insects. The problem is that you cannot be certain which scenario you have unless you start talking to your neighbors.

Trapping in windy areas

Catch numbers can be misleading when wind is common therefore using traps to help locate an infestation becomes much more difficult. Male insects can get blown to a more distant trap than one closer to their source. Topography also impacts where the males will be found in windy regions. One suggestion is to set out traps during those mornings when the air is the calmest – if even for only a few hours and then retrieve them prior to the start of the wind.

The value of neighborhood trapping

When your traps catch even a few males in September or October, then you should meet with your neighbors. If they are not trapping, then encourage them to do so while the remaining days of fall are still warm. In the North Coast more males are present in fall than at any other time of year. If you set out traps in new sites at that time, even if just for a week, the results from those traps will be informative no matter what the catch numbers are. If a group of adjacent managers make



Male vine mealybugs in a sticky trap. The caudal setae are easily visible which helps to distinguish *Planococcus ficus* from other species, however the stickum often makes the wings difficult to see. (Photo: Jack K. Clark)

an effort to coordinate their trapping, you are more likely to locate the infestation(s). By finding infested vines in late summer or fall before harvest, you can take measures to deliver clean fruit to the winery.

If you learn that a nearby vineyard owner has been judiciously treating an infestation of vine mealybugs with pesticides, you cannot let your guard down and assume that all of the males in your traps are associated with someone else's problem. The number of infested sites in

Napa County increased from 20 in 2003 to 32 in 2004 and most of the increase can be attributed to spread from previously identified infestations. It can take more than a year or two before the secondary spread of females shows the obvious signs of an infestation.

How long should you trap?

There is a benefit to setting out traps in early summer if you have

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no idea if your property is close to or contains infested plants. If you haven't caught a single male by October, then stop. If you have, then catch results in October and November (assuming it doesn't rain) will be very informative. At that time, the numbers will increase dramatically the closer you are to the source of insects. Trap catches of several hundred per trap per month can be common in this scenario.

The sooner you learn that your traps are catching male vine mealybugs, the more likely it is that you will find the infested vines prior to harvest. It is true that more males are in the air in September and October than earlier, and that placing only one set of traps is less time consuming than once-a-month trapping. But it is only cheaper in the short run. If you wait until just prior to harvest to set out traps, then you have reduced your treatment options should you find infested vines that late in the season. Delivering clean fruit is essential and you may be dropping fruit to make that happen. A worse case scenario is if the infested vines were mechanically harvested before you found them. Faster spread of the pest is then a given.

Although in some vineyards it may not be possible to eradicate this pest, the population can be dramatically reduced by the use of appropriately timed and directed insecticide applications. As reported in the last issue of CAPCA Adviser, research is underway to develop IPM control strategies that use reduced-risk materials, mating disruption and aug-



Important information to be written on a trap includes the dates it was set up and taken down, the vineyard address and block ID.

mentative releases of a vine mealybug parasitoid.

Movement of vine mealybug in Napa and Sonoma counties is now primarily due to natural or assisted spread (the latter due to lack of sanitation practices that can reduce movement). Growers and PCAs should consider vine mealybug trapping as part of your annual pest management activities. Once you find the infestation and move to control the pest, low trap catches indicate that your efforts are working. If you are certain that your property does not contain infested vines yet your traps still

catch males, then you must meet with the people who farm adjacent properties in order to find the infestation that is generating those males. Either way, trapping for vine mealybug is now a given. Taking a neighborhood approach is an efficient way to find the infestations and then take measures to reduce the population and movement of this serious pest. 🐜