

Minutes of the Annual Vine Mealybug Workgroup Meeting

January 19, 2007

Plant Pest Diagnostics Laboratory
Sacramento, California

The meeting began with a welcome to all of the participants. A publication by David Haviland et al. on Gill's mealybug (*Ferrisia gilli*) was completed in 2006 and is available for free download at <http://anrcatalog.ucdavis.edu>. Hard copies will be shipped to counties when available from the printer.

Update on trapping program for 2006 – Kris Godfrey (CDFA, Biological Control Program) summarized the results of the trapping that was conducted statewide. Briefly, trapping was conducted 28 counties, and there were no new county records in 2006. Vine mealybug continues to spread slowly through already infested areas. It was pointed out that some of this spread in vine mealybug may be attributable to natural dispersal mechanisms such as wind blowing crawlers (first instar nymphs) or infested leaves or by birds. Growers and other associated with vineyards are doing an excellent job of reducing man-mediated spread of vine mealybug.

Update on the nursery trapping program for 2006 – Susan McCarthy (CDFA, Nursery Services Program) summarized the results of statewide trapping of grapevine nurseries. In 2006, approximately 1,250 acres on non-certified grapes and 2,924 acres of registered and certified grapes in grapevine nurseries throughout the state were trapped. This was a cooperative project of CDFa with some counties. The trapping took place in El Dorado, Glenn, Kern, Madera, Mendocino, Merced, Monterey, Napa, Sacramento, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tulare, and Yolo Counties for registered and certified blocks of grapevine nurseries. For non-certified grapes at grapevine nurseries, trapping took place in Alameda, Fresno, Kern, Lake, Madera, Merced, Monterey, San Luis Obispo, Solano, Sonoma, Stanislaus, Sutter, and Yolo Counties. Susan also announced that the existing Nursery Advisory will be amended in the near future. The trapping density in the new Advisory will be 1 trap per 20 acres, and the reference to a treatment for green nursery stock will be dropped.

Update on vine mealybug research for 2006 – Dr. Kent Daane and Monica Cooper (University of California – Berkeley) gave an update on their research on vine mealybug management. Kent summarized the progress that has been made on biological control of vine mealybug, molecular identification of the vine mealybug and some of its parasitoids, mating disruption studies, and future research directions. For biological control, permission was granted in late 2005, for the field release of *Coccidoxinoides peregrinus*, a parasitoid from South Africa. This parasitoid targets the crawler or first instar nymphal stage of vine mealybug. In 2006, approximately 500,000 *C. peregrinus* were released in California. Concurrent with this release, releases of 2 exotic strains of *Anagyrus pseudococci*, a parasitoid already present in California, were also made. The exotic strains are from Northern Italy and Sicily. It is thought that the parasitoid called

Anagyrus pseudococci is most likely a complex of sibling species (i.e., species that morphologically are very similar, but are distinct species). Until the taxonomy can be worked out, the parasitoid strains are being reared separately and are referred to as strains.

Molecular biology studies have been conducted on numerous populations of vine mealybug collected in Europe, the Middle East, northern Africa, South Africa, South America, Mexico, and California. From these studies, it appears that the vine mealybug populations in California and Mexico most likely were introduced at the same time (or at least from the same population at about the same time). The vine mealybug in California and Mexico is most closely related to the populations in Israel and Egypt. This work is continuing.

Mating disruption studies are also continuing. The mating disruption tactics appear to be most successful if the vine mealybug population is of a low to medium density. It is not clear if the use of the pheromone lowers densities by reducing the amount of mating that occurs, attracts large numbers of *A. pseudococci* parasitoids into a vineyard, or some combination of these effects. Female vine mealybugs can produce viable eggs even if they do not mate. The number of eggs is reduced and more male offspring are produced from these eggs.

Other areas of research that are beginning include molecular analysis of the different strains of *A. pseudococci*, identification of the coccinellid larvae found on grapevines among vine mealybug populations, analysis of honeydew production (amount) and chemical composition, insecticide efficacy trials, importation and study of other species of parasitoids, and the relationship between incidence of grape leafroll virus and vine mealybug densities.

Monica summarized the research that has been conducted on the interaction among Argentine ants, vine mealybug, and parasitoids. Management of Argentine ant is important in mealybug management in a vineyard because the ants will protect the mealybugs. Ant baits, placed in approved dispensers, can reduce Argentine ant populations to an acceptable level in 2-3 years. The baits need to be placed in the field during bud-break (March to June, depending upon location in the state) at a rate of 15-20 bait stations (UC bait station) per acre. Research is continuing on better formulations of the baits and bait stations.

Other issues discussed – It was brought up that despite all of education and outreach that has been conducted for vine mealybug, we are still not reaching small growers or boutique/hobbyist growers. Alternate media for dissemination for the information were discussed.