

Gill's mealybug, *Ferrisia gilli* (Hemiptera: Pseudococcidae), an emerging pest of wine grapes in California's Sierra foothills.

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Ferrisia gilli: an "old" mealybug with a new name, and a new host.

El Dorado County, California, located in the Sierra foothill grape growing region of California, where Gill's mealybug (*Ferrisia gilli*) was found in a commercial vineyard in 2004 and has since spread to over 200 acres of wine grapes. The origin of Gill's mealybug is unknown, but is thought to be the southeastern U.S. Although Gill's mealybug has likely been in California for decades, El Dorado County is the only region known to date with Gill's hosting on grape.

San Joaquin Valley and north, where Gill's mealybug was noted as a pest on pistachio in the 1990's¹. For some time there was confusion with another mealybug, "striped mealybug", *Ferrisia virgata*, which is mainly found on ornamentals. Gill's mealybug, *F. gilli* Gullan, was differentiated from striped mealybug, *F. virgata* Cockerell, and described by Gullan et.al. in 2003². Gill's mealybug is named in honor of Ray Gill, retired CDFA taxonomist.

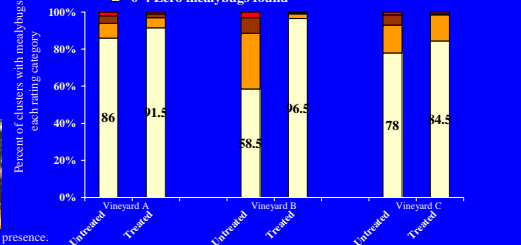
Studying the seasonal biology of Gill's mealybug in foothill vineyards. Because Gill's is a new pest of grape and so little is known about it, we began to document the seasonal population structure of Gill's mealybug in Sierra foothill vineyards in 2008, similar to work completed previously for the grape mealybug³. We wanted to learn where on the vine Gill's mealybug are, in what stage, and at what time of the year. Since some insecticides like buprofezin (Applaud®, Nichino America, Inc.) best target the crawler and nymph stages of mealybugs, learning when these stages are accessible to sprays will help growers time mealybug treatments.

Our bi-weekly mealybug monitoring consisted of 3 minute timed non-destructive searches of 7 vine regions in each of ten untreated vines in five vineyard plots:



Evaluating cluster damage. Prior to harvest, 200 clusters were examined and rated on a scale of "0" (no mealybugs found) to "3" (unmarketable) in treated and untreated portions of each vineyard. Grower applied treatments included acetamiprid (Assail®) and/or buprofezin (Applaud®).

Legend for cluster damage rating:
 ■ "3": Unmarketable
 ■ "2": Greater than 10 mealybugs
 ■ "1": Honeydew and/or less than 10 mealybugs
 ■ "0": Zero mealybugs found



Heavy honeydew indicates mealybug presence.

Gill's natural enemies. During the season Gill's mealybugs and "mummies" were collected in gel caps to identify emerged parasitoids (tiny wasps that oviposit in and kill mealybugs). One species, *Acerophagus* (below right), has been tentatively identified. Lacewings, syrphids and lady beetles were also observed.



References

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Relative number and stage of mealybugs found during the season on untreated vines.

