SURVEY OF GREEN SHARPSHOOTER POPULATIONS IN AND NEAR VINEYARDS IN THE SAN JOAQUIN VALLEY

Principal Investigator:
Mark Sisterson
Crop Diseases, Pests, & Genetics Unit
USDA, ARS
Parlier, CA 93648
mark.sisterson@ars.usda.gov

Co-Principal Investigator:
Kent Daane
Dept. Environ. Sci., Policy & Mgmt.
University of California
Berkeley, CA 94720
daane@uckac.edu

Reporting Period: The results reported here are from work conducted December 2008 to October 2010.

ABSTRACT
Pierce's disease and almond leaf scorch disease have an episodic history in California that predates arrival of the glassy-winged sharpshooter. Within California's Central Valley, the green sharpshooter (*Draeculacephala minerva*) is the most abundant and widely distributed vector of *Xylella fastidiosa*. Previous reports indicate that grape and almond are occasional hosts of *D. minerva*, whereas grassy weeds present in pastures and irrigated alfalfa fields are preferred hosts. To better understand movement of *D. minerva* into vineyards, eight vineyards in the San Joaquin Valley were sampled. At each vineyard, potential source habitats for *D. minerva* were identified: pastures, alfalfa fields, and grassy ditches. Abundance of *D. minerva* in source habitats was assessed using sticky traps and/or sweeps. To document movement of *D. minerva* into vineyards, 16-20 sticky traps were placed around each vineyard and changed biweekly. Finally, weed ground cover in each vineyard was evaluated and if present swept on a monthly basis. Abundance of *D. minerva* was greatest in permanent pastures followed by alfalfa fields. Populations of *D. minerva* were largely absent from grassy ditches. Catches of *D. minvera* on traps surrounding vineyards was rare, but occurred at seven of eight vineyards during the study. As a blunder trap was used and traps covered only a small fraction of vineyard perimeter, low trap catches were unsurprising and the fact that catches occurred at nearly all sites suggests regular movement of *D. minerva* into vineyards. However, *D. minerva* was observed in weedy ground cover at only two vineyard sites and was never observed on the vines themselves, suggesting that movement into vineyards was transient. Lack of establishment of *D. minerva* populations in vineyards may be due to the ephemeral nature of vineyard weed populations. The results reinforce previous reports that grape is not a preferred host of *D. minerva* and that habitats outside of vineyards are likely to play a key role in *D. minerva* population dynamics, particularly locations with permanent irrigated grasses.

FUNDING AGENCIES
Funding for this project was provided by the USDA Agricultural Research Service, appropriated project 5302-22000-008-00D.

ACKNOWLEDGEMENTS
We thank Donal Dwyer for monitoring traps and growers for allowing us access to their vineyards.

Section 2: Vector Management