

(33)

**ReTain® FOR WALNUT PISTILLATE FLOWER ABORTION (PFA): AN EXTENSION SUCCESS STORY**

**Robert H. Beede<sup>1\*</sup> and Joe Grant<sup>2</sup>**

<sup>1</sup> **Cooperative Extension, Kings County, University of California, Hanford, CA, 93230**

<sup>2</sup> **Cooperative Extension, San Joaquin County, University of California, Stockton, CA**

Pistillate flower abortion (PFA) in walnut is the abscission of female flowers 2 to 3 weeks after bloom. Field testing of ReTain®, an AVG-based ethylene inhibitor manufactured by Valent BioSciences, was first performed by the lead author in 2003. A four-fold increase in fruit set was observed over untreated flowers. In 2004, speed sprayer trials in Kings and San Joaquin Counties at 25 and 50 grams ai/ac resulted in significant increases in percent set and yield improvements in excess of 1000 dry in-shell pounds per acre compared to untreated trees. In 2005, trials performed in Kings and Tulare Counties examined application timings from prebloom to 70% bloom, as well as concentration (25 and 50 grams ai/ac) and water volume (100 and 200 gal/ac). The 20-30% and 60-70% bloom timings resulted in the greatest yield improvement (163 dry inshell lbs/ac) compared to untreated trees (76 lbs/ac). Half the recommended concentration (25 grams ai/ac) in 100 or 200 gal/ac provided a 30 lb/tree increase. Application of 50 grams ai/ac in 100 gal/ac resulted in a 53 lb/tree increase. No adverse carryover effect in the average two-year yield was observed in trees treated in 2004.

A vigorous letter campaign orchestrated by UC Cooperative Extension to the federal and state EPA agencies resulted in accelerated ReTain® registration for commercial use in 2006.