Implementation

Can Use of Reduced-Drift Venturi Nozzles on Airblast Sprayers Effectively Control Key Prune Orchard Pests?

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Keywords: orchard spraying, aphid, spider mite, Brachycaudus helichrysi, Hyalopterus pruni, Tetranychus urticae, drift, venturi

Abstract: Off-farm movement of airborne pesticide (drift) is an environmental pollutant and a waste of money. High density plantings and long-established sprayer designs limit low-cost drift control options for growers. Venturi-fitted nozzles mount easily on standard high-pressure airblast sprayers and deliver a larger volume median diameter (VMD) spray pattern than standard hollow cone nozzles. This increase in VMD produces larger spray drops and a potential reduction in drift under proper operating conditions. Venturi nozzles on airblast sprayers have not been tested in California orchards for pest control efficacy. Field studies were done in two different commercial orchards to test control of key, low mobility pests using hollow-cone venturi vs conventional hollow cone nozzles. There was no difference in spider mite control between Acramite® sprayed in July 2004 using standard hollow cone or hollow cone venturi nozzles. In November 2004, a similar comparison was made using Asana® to control prune aphids near the end of leaf drop. Hollow cone venturi nozzles delivered unsatisfactory aphid control in April 2005 compared with standard hollow cone nozzles. These results call to question the simple replacement of standard nozzles with venturi-fitted nozzles on airblast sprayers in prune orchards as an effective drift reduction strategy.