Almond Fumigant Studies: Continuing Research on Methyl Bromide Alternatives and Fumigant Alternatives for Buffer Zones

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PROJECT SUMMARY

Objectives:

- To continue the work of established fumigant plots for control of Prunus Replant Disease and plant pathogenic nematodes.
- Develop non-fumigant based control measures for almond replant disease and plant pathogenic nematodes within fumigant buffer zones.

Background:

Increasing regulations have restricted the use of fumigants within varying distances from sensitive areas depending upon the type and amount of fumigant used. For example, current regulations require a "buffer zone" of up to 300 feet for orchards that border domestic wells, homes, schools, nursing homes, and daycare centers when using Telone II, but pending regulations look to extend this buffer zone beyond 1600 feet or further for fumigants containing chloropicrin. This prevents growers from treating these areas along the agricultural-urban interface, which usually leads to a reduction of tree vigor and yield. In turn, research has focused on delivering smaller doses of fumigants per treated orchard acre and the use of tarps to reduce emissions and increase effectiveness. This data will most likely be used to help develop regulations that decrease the area, but not eliminate buffer zones. True fumigant alternatives must be determined for these untreated areas.

This project continues the work of plot monitoring and nematode sampling for four fumigant trials, which include:

- South Livingston Trial. Planted in the spring of 2010 and located on a loamy sand soil near Livingston, CA. This trial is comparing conventional fumigants.
- Ballico Trial. Planted in the spring of 2011 and located on a sand soil near Ballico, CA. This trial is comparing conventional fumigants with non-fumigant alternatives.
- Winton Trial. Planted in the spring of 2012 and located on a loamy sand soil near Winton, CA. This trial is comparing conventional fumigants with non-fumigant alternatives.
- North Livingston Trial. Planted in the spring of 2012 and located in sand soil near Livingston, CA. This trial is within a "buffer zone" and compares non-fumigant alternatives.

Treatments within the trials will be monitored for tree growth, yield, and nematode control. Harvest data will be collected upon first harvest and continued through the tenth year, possibly longer. Diameter and circumference measurements will be made in the dormant period following the year of growth. Nematodes will be sampled from established plots following the growth in mid-October by collecting soil from the depth of 18 inches within the dripline of the tree.

Project Cooperators: Andrew Johnson, UC Davis, Davis, CA; Brad Hanson, UC Weed Specialist – UC Davis, Davis, CA; Greg Browne, USDA-ARS, Davis, CA; Steve Fennimore, UC Davis, Salinas, CA.

For More Details, Visit

- Poster location 7, Exhibit Hall A & B during conference; or on the web (after January 2013) at www.Almondboard.com/researchreports
- Related Projects: 12.AIR5.Gao; 12 PATH1.Browne