Drought Survival Strategies for Established Almond Orchards on Shallow Soil

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PROJECT SUMMARY

Objectives:

- Determine the effects on almond production and tree survival of either reducing the tree canopy by 50% or treating it with kaolin (Surround) spray, under nonirrigated (rainfed) conditions.
- Determine the effects on almond production and tree survival of restricting irrigation to 5" and 10" of water applied to both kaolin (Surround) sprayed trees and nonsprayed trees (control), compared with fully irrigated control trees.
- Estimate the total amount of water required for the survival of almond trees under the above conditions.
- Determine the critical level of tree water stress necessary to cause tree death or dieback.

Background:

California almond growers are currently being forced to contend with serious water shortages and the specter of future ones as the skies continue to prove unreliable, regulated water allocations remain contentious, and the state's collective thirst continues to mount.

This ongoing, multiyear research project, under way at the Nickels Soil Laboratory, is designed to identify and discuss in detail various alternative strategies likely to enable established orchards situated on shallow soil to survive the drought conditions.

"Survival" is the operative phrase, not just for some or more of the trees, but also for the grower's business. As Ken Shackel has noted, a lot more research has been done on irrigation and almond production than on irrigation and almond survival.

The researchers are currently exploring combinations of alternative treatments, selected on the basis of work done by David Goldhamer and others, and as reflected in the project's objectives.

When complete, the project's findings should lead to the preparation of guidelines that, when used in conjunction with the University of California's advice on dealing with drought in almonds, may well help to keep the orchards green.

Project Cooperators and Personnel: John Edstrom, UC Cooperative Extension, Colusa County; Allan Fulton, UCCE, Tehama County; Bruce Lampinen, University of California, Davis; Larry Schwankl, UCCE, Kearney Agricultural Center; Carolyn DeBuse, UCCE Solano / Yolo Counties

For More Details, Visit

- Poster location 7, Exhibit Hall, Session 3; or on the web (after January 2011) at AlmondBoard.com/AICposters
- 2009-10 Annual Report CD (08-HORT13-Shackel); or on the web (after January 2011) at AlmondBoard.com/ResearchReports