



Using Regulated Deficit Irrigation to Increase Almond Production and Water Productivity

David A. Goldhamer, Mario Salinas
Department of Land, Air and Water Resources
University of California Davis

Compared with a standard ranch practice of low density, fully irrigated trees, we reduced irrigation water use of mature almonds by 34% using regulated deficit irrigation (RDI) that imposed preharvest stress coupled with a high density planting with only a 3.6% decrease in yield.

The differential irrigation rates in the regulated deficit irrigation (RDI) regimes were successfully accomplished in 2008 and monitored with water meter measurements. Tree water deficits were quantified with weekly midday shaded leaf water potential measurements. Arrangements were made with the cooperator to modify fruit sampling at harvest that significantly reduced the manpower required during harvest. The cooperator was briefed on procedures to be used during the harvest to insure that we obtain accurate yield records. These included keeping close track of which truck-trailers come from the specific tree rows so they can be correlated with our plot locations. The cooperator agreed to assign a single field person to those rows that contained our plots and his sole responsibility was to record the trailer numbers.

The harvest was successful and we were able to accurately assess fruit yields and fruit quality. These will be incorporated into the Final Report. We are gratified with the cooperation we received from our grower/cooperator, Paramount Farming Company.

Professional Presentations

Goldhamer, David A., 2008. Using regulated deficit irrigation to increase almond production and water productivity. Paramount Farming Company ranch manager and irrigation scheduling personnel meeting. Bakersfield, CA.

Collaborative Efforts

This project has a sister project known as CARDIP (California Regulated Deficit Irrigation Program) that involves RDI work on both tree and vine crops and has other principal investigators: Mark Battany, San Luis Obispo Farm Advisor; Terry Prichard, LAWR Water Management Specialist in San Joaquin County; and Ken Shackel, Professor, Dept. of Plant Science.

For further information please contact:

David A. Goldhamer
dgoldhamer@sbcglobal.net
559-646-6500

Chief Technician
Mario Salinas
marios@uckac.edu
559-646-6500