

Kearney Agricultural Research and Extension Center



Located 15 miles southeast of Fresno in the central San Joaquin Valley, in one of the most productive agricultural areas in the world, the 330-acre Kearney Agricultural Research and Extension Center is the University of California's largest off-campus agricultural research

facility. There are over 40 different crops grown at the Center. Kearney is the only one of nine Research and Extension Centers with certified organic land set aside for research.

Since opening in 1962, Kearney has achieved international acclaim for leadership in the development of new fruit, nut, and grape varieties, innovative cultural and irrigation practices, pest and disease management techniques, and postharvest biology. In addition, Kearney plays a leadership role in maintaining the quality of California's rural environment, with programs in air and water quality, and mosquito management.



Finding a Treatment for Walnut Blight

Walnut blight, caused by bacteria, is a continuous threat for California walnut growers, especially in central and northern locations where spring rainfall is common. Copper has been the standard treatment for the management of walnut blight for many years, but in the late 1980s, the pathogen developed resistance to copper.

Researchers at Kearney have evaluated many possible alternatives, including other metallic compounds, natural compounds, and antibiotics. The antibiotic Kasumin was found to have the greatest potential to reduce walnut blight. Under low rainfall, Kasumin alone significantly reduced walnut blight incidence. Under high rainfall (simulated with overhead irrigation or naturally occurring), mixtures of the antibiotic with commonly used fungicides or copper resulted in an increased efficacy and outstanding performance.

Results of these studies will help manage walnut blight, keep productivity high, and maintain California as the prime supplier of walnuts worldwide. They will also allow the team to provide data on blight susceptibility among new and old walnut types to assist in any walnut breeding program.

Research conducted by James E. Adaskaveg



The Future of Raisin Production?

The vast majority of California's annual 340,000 tons of raisins are sun-dried. The San Joaquin Valley has been the U.S. center of raisin production for 140 years. Acreage is decreasing because traditional drying techniques are very labor intensive.

Research is exploring dry-on-the-vine techniques permitting mechanical harvesting. In this process, canes are cut, separating the fruit from its moisture source, but allowing it to dry on the vine, away from the risk of rain. This method requires a heavy investment in harvesting equipment up-front and different trellis systems, but does show promise for those growers willing to switch varieties and systems in order to continue to grow raisins.



Research conducted by Matthew Fidelibus

Pistachio Farmers Benefit from the Fungus AF-36 to Combat Aflatoxin

Aflatoxins are toxic metabolites produced by certain fungi and can form on a wide variety of crops, from corn to cotton to tree nuts. Hundreds of thousands of pounds of pistachios are rejected each year due to the presence of aflatoxin.

Scientists at UC Davis and KARE recently discovered how to expose pistachio trees to the spores of a beneficial fungus that displaces the fungi that produce aflatoxin. The reduction in aflatoxin contaminated nuts has been up to 45 percent. This new process was approved by the U. S. Environmental Protection Agency and the California Department of Pesticide Regulation in time for 60,000 acres of the 2012 California pistachio crop. KARE scientists are now expanding their research to almonds and figs.

Research conducted by Themis Michailides



Blueberries in the San Joaquin valley

High demand for blueberries, a potentially lucrative specialty crop for small farmers, along with success stories of blueberry growing in Georgia and Florida, led to trials of different blueberry varieties at KARE.

Blueberries can, in fact, grow well in Central Valley conditions as long as the soil and water aren't too alkaline. Given that San Joaquin Valley soils and water are alkaline, they must be acidified in order to grow blueberries well. This adds to production costs, but may be worth it for small farms given consumer demand and the high value of the fruit. Both Northern and Southern highbush varieties of blueberry have produced great-tasting fruit from this region that is highly prized by consumers. About 200 California small farmers have now invested in blueberry farming statewide.

Research conducted by Manuel Jimenez