

# New Energy Efficient Infrared Drying and Blanching Technologies for Fruits and Vegetables

March 2011

## Fact Sheet

### The Issue

Drying and blanching are two essential processes commonly used when processing fruits and vegetables to extend product shelf-life by reducing water content and deactivating enzymes. Both of these processes use large amounts of energy, reduce product quality, and result in wastewater disposal issues.

### Project Description

The proposed research is to develop and demonstrate an infrared dry-blanching and drying system for fruits or vegetables that results in high quality products. The sequential infrared and freeze-drying (SIRFD) method is estimated to reduce energy use by 40 percent compared to traditional freeze-drying methods. The simultaneous infrared dry-blanching and dehydration (SIRDBD) method eliminates the water or steam used in traditional blanching and reduces energy use.

### PIER Program Objectives and Anticipated Benefits for California

The main project objectives are to demonstrate these technologies at two fruit and vegetable processors in California. This project will provide on-site energy assessment of SIRFD and SIRDBD methods using different types of fruits and vegetables and assess product



Infrared drying and blanching system for fruits and vegetables

Photo credit: U.S. Department of Food and Agriculture

quality. Data will be collected to quantify the reductions in energy use, water use and wastewater generation compared to traditional processing methods.

This project will also help commercialize the technology by working with food processors and by informing the public through on-site seminars, training workshops and publications.

If the technology is successfully demonstrated, the anticipated benefits include increased energy efficiency and reduced water usage as compared to traditional processing methods. This project will help alleviate economic and environmental pressures on California's fruit and vegetable processing industry.

## Project Specifics

Grant Award: PIR-09-005

Recipient: U.S. Department of Food and  
Agriculture

City/County: Albany, Alameda County

Assembly District: 14

Senate District: 9

Application: Nationwide

Amount: \$235,000

Term: November 1, 2010 to December 31, 2013

Co-funding: \$60,000 from USDA

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