

**California Department of Food and Agriculture
2019 Specialty Crop Multi-State Program
Project Abstracts**

*Adapting Avocados for Commercial Success in Extreme Environments
to Enhance US Based Avocado Production*

\$962,804

- **The Regents of the University of California, Riverside;**
- **The Regents of the University of California, Agriculture and Natural Resources; and**
- **Texas A&M University**

The project team proposes a large-scale trial of improved (high-yielding, high-quality, more resilient) varieties under conventional versus modified environmental conditions in the San Joaquin Valley in Central California and the Lower Rio Grande Valley in Texas. This research will streamline evaluations that were planned separately for California and Texas. The overarching goal is demonstration of the feasibility of expanding U.S. avocado production into areas currently considered marginal. Both areas grow substantial citrus crops, currently threatened by Huanglongbing, a fatal disease. Increasing domestic avocado production will give U.S. growers access to newly expanded market demand, increase industry resiliency, and broaden the availability of specialty crops with nutritional and health benefits for consumers.

Climate Ready Landscape Plants

\$999,992

- **The Regents of the University of California, Davis;**
- **The Regents of the University of California, Agriculture and Natural Resources;**
- **University of Washington;**
- **Oregon State University;**
- **University of Arizona; and**
- **Utah State University**

Low water-use plants must be supplied by growers and utilized by the landscape industry to facilitate water conservation by reducing landscape irrigation requirements. To assist the green industry in responding to this need, researchers will create a non-biased plant trials network that assesses plant performance under different irrigation regimes. Trial methods developed in California will now be expanded to four additional western states: Arizona, Oregon, Utah, and Washington. Plants irrigated at three different levels will be measured for growth, and rated for aesthetic quality. Plant material that performs well under low-water conditions will be recommended for production and utilization. Information developed will be provided to the green industry to aid in sustainable decision making, marketing, and business support.

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*Developing Strategies for Increasing Marketable Yield in California
and Florida Pomegranate Orchards*

\$885,801

- **The Regents of the University of California, Riverside;**
- **The Regents of the University of California, Davis;**
- **California State University, Sacramento; and**
- **University of Florida**

The overall goal of the project is to develop strategies to increase marketable yield of pomegranate in California and Florida. The first objective is to evaluate germplasm and breeding lines for plant growth, flowering, crop yield and fruit quality. This objective will be met by field trials of pomegranate varieties and breeding lines in California and Florida, by sensory evaluation and quality assessment, and by sequencing the genome of 'Wonderful' pomegranate and developing DNA markers and genetic linkage maps for expedited development of competitive pomegranate varieties. The second objective is to develop effective management strategies to address fungal diseases of pomegranate, the commodity's most urgent production issue. This objective will be met by trialing promising fungicides and screening existing germplasm and new breeding populations under natural disease pressures in pomegranate orchards in California and Florida and under artificial inoculation. These objectives will identify and develop cultivars that have the potential for commercialization and will distribute promising varieties to growers for profitable and sustainable pomegranate production.

*Evaluating the Food Safety Impacts of Cover-Crop Grazing in Fresh
Produce Systems to Improve Cover Crop Adoption, Crop-Livestock
Integration, and Soil Health*

\$999,985

- **The Regents of the University of California, Davis;**
- **The Organic Center;**
- **University of Minnesota; and**
- **University of Maryland, Eastern Shore**

Project staff aim to evaluate the food safety impacts of sheep grazing cover crops, compared to tilled termination of cover crops (no livestock integration) and winter fallow, before spinach and cucumber. Project staff will 1) determine food pathogen persistence/survival in soil and transfer to vegetable crops, and 2) determine the relationship between soil health properties, environmental factors and pathogen survival in grazed cover crop-vegetable production in three states. Project staff will measure changes in soil health indicators over two years of grazed cover crop-vegetable production, and assess benefits and potential tradeoffs of vegetable cash crop productivity. Benefits of grazing and food safety impacts will be communicated via in-field demonstration and online tools, outreach events, conference presentations, and publications; targeted to growers, policymakers, and consumers.