2015 Projects

AGRONOMIC RESEARCH

Evaluation of irrigation practices on water use, soil salinity, and tomato productivity in the Delta

Brenna Aegerter and Michelle Leinfelder-Miles

Continuation of a modest but extensive evaluation of salinity issues in the delta tomatoes. The project is in its third year.

Investigation of Sustaining Tomato Plant Health and Yield with Composted Manure

Gene Miyao

An outgrowth of the previous work by Davis/Leveau on root health. Proposal seeks to optimize the application rather than explain the complex microbiology involved. Planned as a final year of this project.

Evaluating the Nitrogen Budget System in Drip Irrigated Processing Tomatoes

Scott Stoddard

Project seeks to evaluate nitrogen budgeting systems being developed by water agencies to regulate nitrogen use. The project will be conducted at Merced College, a first time for CTRI.

Potential for improved fertigation efficiency via field-based sensing devices

Brenna Aegerter

Explore the use of two field-based measurement devices to inform more precise management of water and nutrients in subsurface drip-irrigated (SDI) processing tomatoes. The technologies to be evaluated are a Greenseeker handheld NDVI meter and a Tule Technologies surface renewal evapotranspiration (ET) station.

GERMPLASM & VARIETY DEVELOPMENT

CM Rick Tomato Genetics Resource Center

Roger Chetelat

Annual support of the valuable germplasm bank. The Center serves as a warehouse for genetic materials used in many CTRI research projects. The Rick Center is undergoing a new endowment drive to increase funding and we are considering an endowment amount in addition to our annual support.
**INSECT MANAGEMENT**

*Evaluation of Tactics for Improvement of Stink Bug Control*

*Tom Turini*

Second year of the requested proposal to focus on the increasing problem of stinkbugs in Fresno County. The first year was successful in identifying early season movement and reviewing control options.  

*(Photo A and B)*

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**DISEASE MANAGEMENT**

*Evaluation of Fungicides, Bio-Pesticides and Soil Amendments for the Control of Southern Blight of Processing Tomatoes*

*Joe Nunez*

A revised continuation with heavy stakeholder participation for the fifth year of continually refined trials in a Kern member field. Project will try more difficult to execute and aggressive crop protection treatments.

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**Nematicide Product Screening**

*Ole Becker, Joe Nunez*

The is the project that successfully identified Nimitz nematicide and is positioned to discover others. Refinement of rates is the main objective in this continuation of extensive trials performed at both the South Coast Field Station, Riverside and Kern County Research Farm in Shafter.

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**Detection of Azole and Strobilurin Fungicide Resistant Strains of Tomato Powdery Mildew in California**

*Ioannis Stergiopoulos*

Continuation of work we approved in February 2013. Powdery mildew continues to be problematic for both grower and researchers. Proposal seeks to focus on the crop production issues of field resistance to fungicides. It is part of a larger suite of proposals to other agencies looking at more basic properties of the pathogen.  

*(Photo C)*

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**Curly Top Research: Objectives Relevant to Tomatoes**

*Bob Gilbertson*

This proposal is the tomato focused part of a larger proposal. The Curly Top Virus Control Program has continued funding of over $200K for related work. Specific resistance trait development, feeding deterrent development are this project’s goals.

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**Evaluation of Chemical Control of Bacterial Speck**

*Gene Miyao*

A basic field evaluation of newer control products. This proposal contains a shift in emphasis to the Brentwood district, a more problematic area for direct seeded bacterial diseases.
Evaluation of Root Knot Nematode Control with Resistant Wheat and Various Cover Crops
Gene Miyao
Work is the third year of work and will include tests of the new nematicide Nimitz. This proposal builds on the overall strategy to develop a more robust processing tomato nematode management program at UC Riverside.
(Photo D)

WEED MANAGEMENT
Field Bindweed Management in Processing Tomatoes
Lynn Sosnoskie
A continuing proposal on bindweed control. This new proposal looks beyond simple treatment rates and into an overall strategy of improving early crop competitiveness.
(Photo E)

Evaluating Herbicide Carryover in Subsurface Drip Irrigated Tomatoes
Kurt Hembree
Third and completing year to address the increasingly important issue of excess herbicide residue on permanent beds.

Automatic Vision Guided Weed Control System for Processing Tomatoes
David Slaughter
A modest proposal for an old problem. This is a partnership grant with USDA to build a new machine vision system for processing tomato. We have a long history of funding robotic weeder research but with little commercialization. With the USDA component and a new Dean of the College having a focus on applied results, we’re optimistic we can avoid the shelving of a system due to patent issues of the past.

Beyond Funding Research:
2014 Industry Issues and CTRI Activities

Broomrape
The 2014 Broomrape issue consisted of two distinct outbreaks: a new species, Orobanche aegyptiaca, discovered in a Solano County field and “legacy” outbreaks of Orobanche ramosa, in Stockton. For the new Solano outbreak, CTRI cooperated with the California Tomato Growers Association-led funding by growers and processors to match CDFA eradication efforts.

The branched broomrape “legacy” species is the pest CTRI was originally organized to eradicate in the 1970’s. These recurring infestations will probably become a larger problem until a crop insurance and pest management plan is adopted. CTRI supports a comprehensive effort to address future “legacy” outbreaks.

Nitrogen
Regional Water Coalitions will be the lead agencies to organize groundwater protection rules developed in cooperation with each commodity. Processing tomato is in the first group of six crops to establish approved best use practices. CDFA will provide the bulk of the funding along with support from each commodity. The process is just underway in December 2014.

Regarding nitrogen in the atmosphere, we continue to participate in listening sessions on California Air Resources Board research projects modeling farm generation of the greenhouse gas, nitrous oxide (N₂O)

(continued on back page)
# Members of the 2015 California Tomato Research Institute

## Sacramento Valley

<table>
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<tr>
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## San Joaquin / Stanislaus

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Merced, Fresno & Coastal Valleys

A-Bar Ag Enterprises
Los Banos
Abbate Farms
Merced
Ausaymas Farms, Inc.
Hollister
Beene Farms
Helm
J. F. Bennett Ranch
Firebaugh
George Bettencourt
Huron
Borba Farms, Inc.
Riverdale
Bowles Farming Company
Los Banos
Brinkley Farms
Dos Palos
Britz Inc.
Fresno
Burford Ranch
Helm
Casaca Vineyards
Five Points
Clark Bros. Farming
Clovis
Coelho East
Five Points
Coelho South
Five Points
Coelho West
Five Points
Crivelli Ranch
Dos Palos
Daddy’s Pride Farming
El Centro
N.F. Davis Drier & Elevator
Firebaugh
W. C. Davis Farms
Firebaugh
J. Diedrich Farms
Firebaugh
William Diedrich Farms
Firebaugh
Double G. Farms
Le Grand
Dresick Farms, Inc.
Huron
Dust Bowl Farms LLC
Coalinga
Errotabere Ranches
Riverdale
Ferguson Farming Company
Leemoore
Five Points Ranch, Inc.
Five Points
Fortune Farming Company
Fresno
Fundus Farms
Mendota
Graham Family Farming
Kerman
Greenfields Turf, Inc.
Greenfield
Hammonds Ranch
Firebaugh
Harris Farms Inc.
Coalinga
Houlding Farms Inc.
Fresno
Gary Hughes Farms
Kerman
Iest Family Farms
Madera
J & J Farms
Firebaugh
M.L. Ledford & Son
Firebaugh
Live Oak Farms
Le Grand
Lucero Farms
Los Banos
D. & V. McCurdy Farms
Firebaugh
Nickel Family LLC
Dos Palos
OPC Farms, Inc.
San Joaquin
Ralph Palazzo & Co., Inc.
Los Banos
Pentagon Company
Los Banos
Perez Ranches
Firebaugh
Polder Bros. Farms
Leemoore
Redfern Ranches Inc.
Dos Palos
San Andreas Farms
Brentwood
San Felipe Farms, LP
Hollister
Sano Farms, Inc.
Firebaugh
R.A. Sano Farms, Inc.
Firebaugh
Santa Rita Farms, Inc.
Dos Palos
J.O. Seasholtz Farms
Fresno
SJR Farming
Los Banos
Steve Smith Farms
Madera
Solo Mio Farms
Leemoore
Sun Pacific Farming Co.
Exeter
Teicheira Farms
Los Banos
Terranova Ranch, Inc.
Helm
Allen Thomsen Farming
Firebaugh
Teixeira & Sons
Dos Palos
Valley Pride
Huron
Vaquero Farms
Stockton
Ventura Farms, Inc.
Gustine
Westside Harvesting
Cantua Creek
Will-Shar Farms
Merced
Woolf Enterprises
Huron
Worth Farms
Coalinga
Regents of Univ. CA
West Side REC
Five Points

Kings, Kern & South

Badger Creek JV
Buttonwillow
J.G. Boswell Company
Bakersfield

Cauzza Ag Partners
Buttonwillow
Crettol Farms
Wasco
Dalena Farms, Inc.
Madera
Esajian Farming Co.
Lemoore
F & F West
Lemoore
Fabbri Farms
Bakersfield
Fretas Ranch
Hanford
Opal Fry and Son
Bakersfield
Grimmway Farms
Bakersfield
Jerry Slough Farming Co.
Buttonwillow
Kirschenman Enterprises
Edison
Materra Farming Company, LLC
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Stratford
Parsons Farms
Buttonwillow
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Stone Land Co.
Stratford
SVI Farming
Hanford
B & R Tevelde Ranch
Hanford
TMT Farms
Hanford
Donald Valpredo Farms
Bakersfield
WAY Farms
Bakersfield
Westlake Farms
Stratford

Members of the California Tomato Research Institute
Beyond Funding Research: 2014 Industry issues and CTRI activities (continued)

**West Side Research and Extension Center Strategic Plan**
Beginning March 2014 and ending in October, a committee of fifteen completed a strategic plan to re-organize the flagging WSREC. The top priority identified by the group was water: a new well and delivery system are mandatory for any long term success. Several other issues are critical to success but nothing happens without water first.

**Stinkbug**
Beyond the scope of the continuing Stink Bug Management project with Tom Turini, we have been pursuing, in cooperation with CTGA an extension of registration for the insecticide endosulfan. We have petitioned USEPA and are making slow progress toward a one year extension. We have also separately sponsored Dr. Les Ehlers, retired UC Entomologist, to survey fields in the region with Tom.

**Curly Top Virus**
2014 was a relatively quiet year compared to 2013 losses, however a focus on outlying areas including San Joaquin County is now becoming necessary. Shifting crops, pasture uses including increased organic range, and drought increased amounts of fallow land are all adding to the complexity of the leafhopper control effort. CTRI and CTGA have been active in assisting the Curly Top Virus Control Program to best serve processing tomato growers.

**Communications**
Email and web connectivity continue evolving to become our mainstream means of communication. We are in the process of upgrading and broadening our electronic systems to accommodate mobile devices and seamlessly manage addresses, contacts and communications. It is not without cost, both in upgraded sites and software, but also operator training. If fail to stay current now, we will become dependent on outside management services to accomplish even the simplest of functions.

One Final Note:
**2015 Assessment Rate** to remain at seven cents per paid ton.