



THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE & LIFE SCIENCES

Yuma Center of Excellence for Desert Agriculture

“Solutions to Desert Agriculture’s Pressing Problems” Quarterly Update | Summer 2018

Our model has been to leverage donor funding with grants. This quarter we have been awarded \$423,164 for the following projects:

Salinity & Irrigation Management for Melons (\$69,938)

We teamed up with Dr. Charles Sanchez (University of Arizona) and Dr. Andrew French (USDA-ARS) on a multiyear irrigation and soil salinity management research project to quantitatively track water use and salt balance across various crop production systems and rotations. This award from the AZ Department of Agriculture's Specialty Crop Block Grant Program will allow us to precisely measure evapotranspiration, irrigation efficiency and soil moisture and salt distribution under both furrow and drip irrigation of melons.

Measuring Evapotranspiration of Desert Durum at Multiple Scales 2018-2019 (\$30,765)

The Arizona Grain Research and Promotion Council will sponsor our ongoing Durum wheat irrigation and soil salinity management project for an additional year. We plan to expand our field research sites into central AZ with this funding.

Drone-Mounted LiDAR Equipment and Software (\$99,900)

YCEDA received Technology and Research Initiative funds from the UA Water, Environmental, and Energy Solutions Equipment Grant to purchase a DJI Matrice 600 Pro drone integrated with a Velodyne LiDAR HDL-32E sensor and specialized GIS image processing workstation. This technology will support research projects that require specialized remote imaging, including our irrigation and soil salinity management project with Dr. Sanchez and Dr. French. YCEDA staff and researchers attended training for the new equipment in San Diego.



Brian Antle talks transplant technologies



Testing the new drone-mounted LiDAR system



Dr. Mazin Saber and Martin Porchas install an Eddy Covariance (ECV) system in a melon field

AgTech Talk Series Launched!

YCEDA is hosting monthly AgTech Talks to foster innovation, facilitate learning, and explore tools, data, and current knowledge between industry professionals. We invite you to come network, collaborate and explore the technological advances that are revolutionizing the future of farming!

The series launched this summer with a presentation on drones by Agtegrity's Curtis Pate. Exploring transplant technologies with Brian Antle (Tanimura & Antle Plant Tape), Matt DiCori (Keithly-Williams) & Gary Ursrey (Greenheart Farms) was our focus in September. Watch your inbox for details on the upcoming AgTech Talks:

October: Thinning & Weeding Technologies

November: Irrigation Technologies



Robby Barkley, Paul Brierley & Vic Smith answer questions at the Western Growers Center for Innovation & Technology



2018 Melon Research Field Day at the Yuma Ag Center

A FEW MORE HIGHLIGHTS....

- Our search for a research director is over! Dr. Stephanie Slinski has been hired as YCEDA's Associate Director, Applied Research & Development. She will join our team on October 1.
- YCEDA is working on several fronts to bring new technologies to the Food Safety fight. From innovative water treatment to real-time detection and kill steps, we are working to bring solutions to this pressing problem facing fresh produce suppliers.
- YCEDA is sponsoring a graduate level course through the McGuire Center for Entrepreneurship that has tasked 3 engineering design teams and an MBA class with commercializing drone technology being developed for the date industry.
 - We are collaborating with Barilla Pasta on a \$142,354 study called "Nitrogen Management and Water Footprint for Arizona Durum Production" to be researched by University of Arizona scientists Dr. Mike Ottman and Dr. George Frisvold.
 - Robby Barkley, Paul Brierley, and Vic Smith met with startup tenants at the Western Growers Center for Innovation & Technology in July to discuss collaboration, Ag Tech, and Desert Ag Solutions.
- YCEDA hosted a melon research field day in June to give AZ and CA melon growers the opportunity to learn more about project objectives and breeding lines of the 4-year USDA-Specialty Crop Research Initiative and provide feedback to project leaders from University of Arizona and Texas A&M.
- Did you miss our 2017 Research Symposium? The research presentations are archived on our website video page. If you would like a copy of the Research Report Summary Booklet, please contact us.

Satellite Measurement of Evapotranspiration (ET) from Desert Iceberg Lettuce Production Systems (\$21,011)

The Arizona Iceberg Lettuce Research Council will continue to sponsor our ongoing irrigation and soil salinity management project. In 2015-2016, we evaluated water use and salt balance during the stand establishment irrigation. During 2016-2017, data was gathered on water use and salt balance during the thinning irrigation. In 2017-2018, we focused on evaluating ET from lettuce fields using Eddy Covariance (ECV) methodology. This award will enable us to calibrate and validate satellite based algorithms to calculate ET in iceberg lettuce fields throughout the 2018-2019 season.

DNA-based Tissue Diagnostics for Lettuce Fusarium (\$59,196)

YCEDA is leading multiple projects conducting research for improved management of Fusarium wilt of lettuce. With this funding granted by the Arizona Department of Agriculture, experiments will be conducted on methods of inoculation used to artificially infect lettuce with Fusarium and on the interaction of soil conditions with disease development. Additional experiments will be conducted to further develop two promising diagnostic techniques. Past research results are posted on our website under the Projects & Updates tab. This work will be led by University of Arizona's Dr. Barry Pryor.



Processing data in Dr. Pryor's lab

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