



THE UNIVERSITY OF ARIZONA

Yuma Center of Excellence for Desert Agriculture

“Solutions to Desert Agriculture’s Pressing Problems” Quarterly Update | Spring 2019

Leveraging donor funding with grants has been our model. The following projects have been awarded:

Durum Wheat Nitrogen Management & Water Footprint Research

YCEDA is collaborating with University of Arizona scientists Dr. Michael Ottman, Dr. Pedro Andrade-Sanchez, and Dr. George Frisvold on "Nitrogen Management and Water Footprint for Arizona Durum Production." Barilla Pasta awarded YCEDA \$142,354 to conduct the research study, which will include field studies of new Nitrogen management technologies and incentives to growers for utilizing adaptive Nitrogen management tools, as well as detailed/localized water footprint calculations.

Evapotranspiration for Lemon Production

The Arizona Citrus Research Council recently granted YCEDA \$9,736.00 to collect accurate crop evapotranspiration (ET) for lemon production. Dr. Charles Sanchez, Professor of Soil, Water, and Environmental Sciences, University of Arizona, and Dr. Andrew French, Research Physical Scientist, Arid Land Agricultural Research Center, USDA-ARS, will lead the research team collecting the data using large aperture scintillometry (LAS) instrumentation. Field studies have been initiated.



Placing a LAS tower in the citrus orchard



Barilla Durum wheat trial in the Yuma Valley



Dr. Mazin Saber and Martin Porchas remove an Eddy Covariance (ECV) system from a lettuce field prior to harvest.



Fusarium Wilt in a 2018 Yuma lettuce field

2018 Fusarium Wilt Trial Results

The 2018 Fusarium Wilt of Lettuce Research Report with trial results is available on our website to assist with planting and management decisions. It is archived under the Lettuce Fusarium Wilt Trials and Analysis project page. View it here: DesertAgSolutions.org/project/lettuce-fusarium-wilt-trials-and-analysis

Irrigation/Soil Salinity Management Study

Did you miss the Southwest Ag Summit breakout session on the YCEDA-coordinated irrigation & soil salinity management research study? View it on our website: <http://ow.ly/zjHo30otgJx>



Members of the Delta Degrees team review thermal images from a test flight



Go To Market Initiative team members prepare the drone



Paul Brierley, YCEDA Executive Director, and Dr. Robert C. Robbins, University of Arizona President, take a "dronie" during the Cats at the Capitol event.

Download the "TestIT" app!

YCEDA is asking for your help in tracking broadband speeds in rural areas. Sufficient Broadband connectivity is essential for the development & utilization of AgTech in rural areas. There are many programs to facilitate rural broadband enhancement, but connectivity data provided to the FCC is often inaccurate & inflated – leaving rural areas overlooked & disconnected. "TestIT" is an iOS/Android mobile app that reports & aggregates broadband speeds from app users across the country. Users can quickly & easily test their broadband speed from anywhere. The data collected through this app will identify areas where broadband service is overstated & underfunded by comparing the data to the National Broadband Map. No personal information will be collected. Your help identifying rural gaps in our nation's rural broadband coverage is critical to making substantive changes to the process for identifying broadband service needs.

Stay Informed!

Website: DesertAgSolutions.org **Twitter:** @YCEDA_DesertAg
Facebook: @YCEDA **YouTube:** Yceda

YCEDA/Western Growers Moisture Sensor Evaluation

Soil moisture is an important measurement in irrigation and crop management. YCEDA and Western Growers Association have teamed up to sponsor a field study that will compare characteristics such as cost, features, performance, durability, and data accuracy for a number of commercially available soil moisture sensors. These sensors will be installed in a Yuma commercial vegetable field this fall that will be heavily instrumented for water balance studies, giving a reliable reference for the data acquired. Dr. Charles Sanchez and his research team will maintain the sensor network and collect data from the sensors. At the conclusion of the study, a moisture sensor comparison final report will be prepared and distributed to the grower and research communities via Western Growers, YCEDA, and the University of Arizona Cooperative Extension Service. If you know of a product that should be included in this evaluation, please contact YCEDA.

2019 Senior Design Day Projects

We are collaborating with several groups of University of Arizona engineering students on 2019 Senior Design projects:

Delta Degrees, a team of UA-Yuma Systems Engineering seniors, worked closely with YCEDA staff and Dr. Andrew French, USDA-ARS Research Physical Scientist, to integrate a thermal imaging sensor and a drone so the system can validate the satellite data we are collecting for our irrigation and soil salinity management research study.

Additionally, we partnered with Bard Date Company and University of Arizona's McGuire Center for Entrepreneurship, College of Engineering, and Tech Launch Arizona to sponsor the Go To Market Initiative, a project with the goal of developing and implementing a commercializable system for the date industry that will allow them to autonomously pollinate date groves using drones. The students will create a startup company that licenses the technology if all goes as planned.