

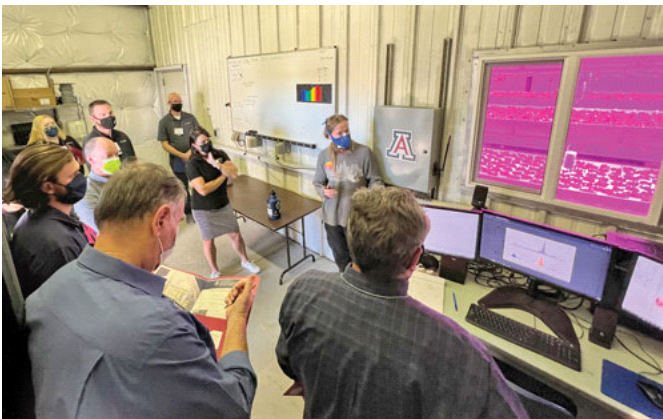
# GROWERTALKS

## GT in Brief

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## Mars in AZ

*Chris Beytes*



Future Martian farmers Megan Kane and Tam Friedman take members of the National Greenhouse Manufacturers Association (NGMA) on an otherworldly tour of the University of Arizona's Controlled Environment Agriculture Center's "Mars Lunar Greenhouse," where they're experimenting with techniques for growing food in space just as an astronaut would do. The only real difference? Gravity. The researchers are using the inflatable modules to do variety trials with lettuce, kale, sweet peas, dwarf tomato and dwarf pepper, with the goal of producing a

large portion of the daily calories necessary by astronauts while generating oxygen and recycling water.

NGMA was in Tucson for their annual meeting; a group of about 15 members was given a private tour of CEAC by various student guides along with CEAC Director Dr. Murat Kacira and former director Dr. Gene Giacomelli. The Mars Lunar Greenhouse was just one of the areas of controlled-environment agriculture research they showed us; we also got a tour of their vertical farm, which was built in 2018 from an old storage building. It's small—two chambers, each with two stacks of hydroponic tables three layers high—but they can mimic any condition needed to test vertical farming theories, such as plant response-based environmental control to enhance resource-use efficiency.

We were also intrigued by a test of "quantum dots" technology from a new product called UbiGro film. UbiGro is said to absorb sunlight and then shift some of the ultraviolet and blue waves over toward the red spectrum, making the light more usable for the plants. Quantum dot technology was developed by Los Alamos National Laboratory and M.I.T. CEAC is growing a trial of tomatoes under the film (along with a control of tomatoes under regular poly) to determine the best wavelength of light to maximize yield. **GT**

