Utah Water Research Lab Unveils Latest in Unmanned Aerial Vehicles

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News Release – LOGAN, UTAH, Feb. 16, 2017 – Researchers at Utah State University last week unveiled their newest platform of unmanned aerial vehicles. The new ‘BluJay’ line of all-electric aircraft is used for research in precision agriculture and water resources engineering.

Students and researchers unveiled the latest line of UAVs used by the Utah Water Research Lab at the GRAPEX conference on Feb. 7 at Utah State University.

“This aircraft represents the latest improvements in UAV technology,” said Dr. Mac McKee, director of the Utah Water Research Lab at USU. “It can stay aloft for more than three hours and can carry a five-plus-pound payload of four different cameras. And the best part is it’s 100 percent student-designed.”

The unveiling event coincided with a meeting of the GRAPEX group, a team of engineers and researchers developing improved methods for estimating water use in grape production. GRAPEX members include the USDA’s Agricultural Research Service, Utah State University and its student-led AggieAir UAV program and E&J Gallo Winery of Modesto, Calif.

McKee says the first BluJay aircraft, nicknamed Darkhorse after a popular series of Gallo table wines, can fly a distance of over 200 miles and can capture imagery over a 20-square-mile area with resolution of up to 10cm by 10cm.

The new electric UAVs can stay aloft for three hours and capture images in ultra-high detail.

The purpose of using UAVs for agricultural research, said McKee, is to capture aerial images with cameras and software that can determine information about soil and plant moisture properties. By combining UAV imagery with data from satellites and local weather conditions, it’s possible to create forecasting information that significantly increases irrigation efficiency at growing operations where water supplies are limited.

“UAVs will play an important part in precision agriculture,” said McKee. “In the very near future we will see more sophisticated tools coming available to farmers for making better informed operational decisions about irrigation, fertilization and pest control.”

In its 11-year history, USU’s AggieAir program has involved approximately 100 students ranging in experience from post-doc researchers to sophomores who are brand new to engineering.

Several key representatives attended the GRAPEX conference and BluJay unveiling ceremony. Bill Kustas with the USDA ARS was joined by Nick Dokoozlian, Vice President for Research at E&J Gallo. Also in attendance was Dr. Mark McLellan, Vice President for Research and Dean of Graduate Studies at USU.

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See the photo gallery

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