Drones and Apps in Agriculture

10/18/2023

Drones and Apps in Agriculture

This spring was great for new educational opportunities, including a drone class specializing on livestock.

The Aggie Drone Academy, a Utah State University Extension program, sponsored an Unmanned Aircraft Systems class for livestock producers. UAS, commonly known as “drones” are gaining popularity among the many different avenues of agriculture.

The class centered on how to prepare livestock producers to get ready to take the Federal Aviation Administration UAS Part 107 Certificate Test. Funding was provided by a grant obtained by Michael Pate, a professor in the Agriculture Systems, Technology and Education department. He was able to pay the cost for 25 participants. I not only promoted the event, but was able to participate in the class since this was something I was interested in pursuing from my last position at USU.

I was impressed with the amount of learning that occurred during the class, from weather patterns to airspace management and everything else to become a socially responsible drone pilot.

Later in the summer, USU Extension, along with the Cache Cattleman’s Association, held a joint “Barbeque and Education Night.” We had a dinner table style discussion on “Farm Safety Plans” by Michael Pate, an area of booths led by Kevin Jensen from the USDA Agricultural Research Service on new range grasses and forage and Daniel Cook from the USDA Poisonous Plant Lab. Cook showcased their “Plants Poisonous to Livestock in the Western States Bulletin Number 415” and revealed the same book, now available as an app.

You can find the app on iTunes and Google Play by searching USDA PPRL. Once downloaded on your phone, it can be used without internet to identify potential poisonous plants. Finally, Shawn “BW” Barstow and Shalyn Drake with the Aggie Drone Academy headquartered in Price, had several drones ready for participants to fly and ask questions about. They highlighted this new technology and how it can be used in agriculture. The USDA-ARS also sponsored an activity, showing off their larger drones and how they are used in research.

“I use my drone for everything from checking water to calving in the winter. It saves me a lot of time,” said livestock producer Kyson Smith. Smith attended the “Barbeque and Education Night.”

“It saves me time. I don’t have to ride the four wheeler out in the pasture and open and close gates to check fence lines,” said livestock producer Lane Parker, who also attended the event.

The use of drones in agriculture can be very technical, but yet as simple as checking on livestock and stock tank water levels. Getting an aerial view of a stand of alfalfa can really shed some light on stand establishment and in older establishments, you can see how uniform the stand is across the field very quickly.

Observing flooding drainpipes and fields this year — due to heavy snow and rain — that would normally not be accessible, can be observed with a drone. If you add a thermal camera to your drone, you can help locate missing livestock quickly. We used a drone this past winter to check research plots in deep snow we could not walk too very easily. For these and many more reasons, the interest in drones is growing faster.

Because of the rapid responses and large interests in drones and agriculture, we will be holding another class to help others learn more about drones and how to fly legally. Look for it in the spring of 2024.

The FAA requires that all drones are registered and drone pilots are legal to fly commercially. In this class, we’ll show you how to do everything that is required to fly as a legal and socially responsible pilot. There is also an option to fly drones as a hobbyist, and we’ll show you how.

Because of the nature of aviation and the rapid use of drones, we’ve focused the class to cover some of the

following: flight and personal safety, flight charts, air traffic communications and weather. As a bonus, you will be able use that information to help you in other ways.

For example, the ability to understand weather patterns and weather information alone can benefit in hay production. Just like in the original class, we'll get some hands-on training. You'll fly small quadcopters, larger fixed-wing drones and even take home your own mini drones. Don't worry about crashing the $7,000 Thermal Drone from Autel, the Aggie Drone Academy technicians will make sure you don't crash.

We usually hold classes at the USU Animal Science Pavilion in Wellsville, with easy access to animals, where you can experiment and monitor animal reactions to drones in person.

I am looking forward to obtaining my Part 107 Certificate and adding this technology to the Cache County Extension office in the future. I hope to explore other uses for drones in agriculture that can be adapted for producers and other ag-related fields.

Writer: Justin Clawson

Contact

Justin Clawson
justin.clawson@usu.edu

Questions?
Cache County Extension office
435-752-6263