Drone makes ranching easier

By DIANNA TROYER
For the Capital Press

Rancher Carson Kelly has become a trendsetter in central Idaho, flying a drone to help raise breeds of cattle originating in Scotland.

Kelly, 29, began flying a DJ Mavic Pro drone in 2016 to check on his cattle year-round near Moore in the Lost River Valley.

"I'd read about them on the internet and how they were making life easier for ranchers, so I thought I'd give it a try," he said.

Besides ranching, Kelly works as a construction foreman for North Wind, a contractor at the nearby Idaho National Laboratory.

"With working a full-time job, flying my drone to take care of the cattle has saved me so much time," he said. "It's another tool for me to use, plus it's fun to fly."

As Kelly kept checking on his herd with his whirring aerial assistant, a neighboring rancher noticed.

Dianna Troyer/For the Capital Press

Carson Kelly relies on his drone to check on his herd in the Lost River Valley of central Idaho.

"He talked to me about flying a drone and bought one, too, to make life easier."

Kelly said he chose the DJ Mavic Pro because it was affordable, compact and durable. If a propeller or camera malfunctions, it is easy to replace the parts.

Learning to fly it was easy, too, he said.

"It only took me about an hour to read the owner's manual, watch some videos on the internet and start flying it," he said.

To become registered to pilot it, the software required him to correctly answer a short series of safety questions. The drone must remain in the pilot's line of sight and cannot fly higher than 400 feet or in restricted airspace.

Set to a regular mode, it automatically avoids objects. Once clear of buildings and obstacles like trees, he puts it in the sport mode of about 40 mph to fly it out and back within the 20-minute lifespan of the rechargeable battery.

It is programmed to return to its launch site if its battery is running low. If it does go down, its location can be traced with GPS.

During calving season in winter and spring, Kelly said the drone is vital for checking on his herd in a pasture near his home.

"Some cows like the shelter of shrubby willows and cottonwoods, so it's easy for me check on them with the drone."

He relied on it when he introduced some distinctive breeds to his herd recently. In 2018, he bought several Scottish Highland cattle and last year added Miniature Belted Galloways. To make sure they were settling in with his Angus cattle, he flew the Mavic to check on them.

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CARSON KELLY

Age: 29

Education: Animal science degree from Brigham Young University-Idaho

Family: Wife

Making every drop count

By BRAD CARLSON
Capital Press

Howard Neibling helps farmers irrigate more efficiently.

"A lot of water users are being more careful with their water and trying to stretch," said the extension water management engineer at the University of Idaho Kimberly Research and Extension Center. "Basically, what I've been doing for a long time is helping growers get the most production for the water they have. A lot of that is minimizing losses and making sure they time their applications to avoid water stress."

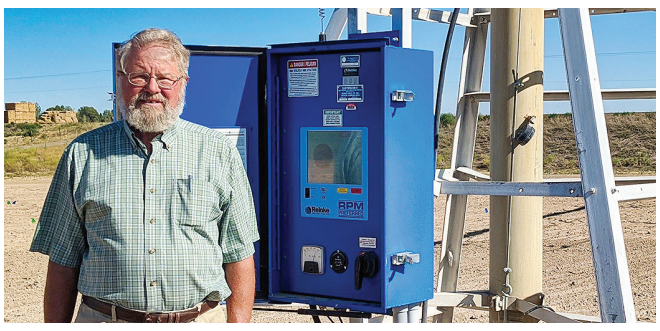
He helps growers evaluate the efficiency of their irrigation system and determine if changes are warranted.

"I present to growers that you have a whole palate of options depending on how short you are (on water) and how much you want to save," Neibling said.

He likes to focus on water-delivery efficiency.

Average amounts of pumped water that get into the soil range from 60-70% for hand- or wheel-line sprinklers up to 80% for a conventional center-pivot nozzle placed 5 or 6 feet off the ground, Neibling said.

About 90% of water gets into the soil if delivered by a Low Elevation Sprinkler Application system 30 to 36 inches above the ground, and 92-94% if the LESA is placed down into the plant canopy. Drip irrigation can be 95% efficient or more depending on the approach used.



Jeremiah Neibling

The University of Idaho's Howard Neibling at a variable-rate irrigation pivot and control panel.

Those rates account for losses from evaporation, leakage or deep seepage from over-application. They are lower in windy or dry conditions.

Researchers at UI, Utah State University, Brigham Young University and BYU-Idaho have been studying variable-rate irrigation, which adjusts sprinkler pivots or individual nozzles according to water need. Electronic controls customize applications to areas that are wet already, or especially dry, for example.

"Variable-rate makes the most sense where you have non-uniformity in soils in a field, or have areas of rock," Niebling said. "We are trying to say we have variability out here, and how do we set our systems up to manage it?"

Such systems don't pencil out where water is plentiful and inexpensive, but can produce major savings in other locations.

"In the Rupert (Idaho) area or other areas where there are rock piles or rock blowouts, you could program this so when it goes over a rock pile, it shuts off," Neibling said.

Variable-rate systems also can help save on chemicals applied via irrigation.

Drip irrigation is also advancing. From a connection to a groundwater pump or filtered surface water, tubing or drip tape is rolled out and placed at the desired depth.

Neibling has been watching developments in mobile drip irrigation, in which lengths of drip tubing replace sprinkler heads on a pivot. Potential benefits include uniform application as the pivot moves around the field, less wind drift and water concentration at the root instead of foliage to make the plant less disease-prone.

"We are seeing some usage," he said. "Again, it's more expensive. But if you don't have enough water to grow a decent crop, it may make sense to you."

Neibling said costs to convert to various systems include about $8,000 per pivot to go from sprinkler heads 5 to 6 feet off the ground to LESA set at 30-36 inches, or about $12,000 if they're at 18-24 inches because more heads are needed for narrower spacing.

This story was first published Aug. 14, 2020.

HOWARD NEIBLING

Age: 68

Occupation: Extension water management engineer, University of Idaho Kimberly Research and Extension Center; education chairman, Idaho Irrigation Equipment Association

Education: B.S. (1974) and M.S. (1976), agricultural engineering, Kansas State University; Ph.D. (1984), Purdue University.

Home: Between Kimberly and Twin Falls, Idaho

Family: Wife, Marcia, a nutrient-management consultant for dairies and feedlots; four grown children.

Hobbies: Gardening, camping, canoe camping.