

A YEAR OF IDAHO INNOVATION



CUTTING-EDGE TECHNOLOGY BOOSTS PRECISION

By SEAN ELLIS
Capital Press

PARMA, Idaho — University of Idaho researcher Olga Walsh is studying the use of cutting-edge methodologies to help farmers use nutrients and water more efficiently.

Walsh, a cropping systems agronomist, said farmers have embraced technologies such as global positioning satellites but she believes the next big step is for producers to adopt the use of precision agriculture on a large scale to improve water and nutrient use efficiency.

The technology is already there to do that, researchers just need to develop ways to help farmers determine how best to use it, she said.

“Our big challenge is to use these precision tools to improve the efficiency of our cropping systems,” said Walsh, who started work at UI’s Parma Research and Extension Center in September of 2014. “I think in the future precision agriculture is going to just be a normal part of agriculture.”

One of Walsh’s main priorities is to develop a system that uses unmanned aerial vehicles to monitor wheat fields for nutrient and water stress.

Remote sensing cameras on the UAVs would show the light reflectance of the crop’s canopy and an algorithm specific to Idaho conditions would interpret the data and show farmers how they can best use nitrogen and water to optimize yields.

That type of system already exists but it is not specific to Idaho conditions, said Walsh.

“We just need to develop the methodology so a grower

can go and buy the (drone and software) as a package,” she said.

That project will include using UAVs to drag sticky traps across wheat fields so researchers can monitor populations of fusarium spores and determine if the field needs to be treated for the pathogen, which can lead to fusarium head blight.

Parma research station superintendent James Barbour said Walsh’s work with UAVs and other precision agriculture techniques is exciting, and her background in that area is one of the reasons she was hired.

“We think (precision agriculture is) going to play a huge role in agriculture in the future,” he said. “There is a lot of untapped potential there. I think (Walsh) is going to be a real important player ... in agriculture in Idaho.”

Walsh is also working on a project to develop reference strips and precision sensors that can tell a wheat farmer how much nitrogen is in a certain part of his field.

“They will know exactly how much nitrogen they have down ... and can use that information to gauge the rest of their crop,” said Cathy Wilson, the Idaho Wheat Commission’s director of research collaboration. Walsh also plans to develop sustainable cropping systems for dual-purpose biennial canola and evaluate biological seed and foliar products to improve bean yield and quality.

Born and raised in St. Petersburg, Russia, Walsh worked as a soil nutrient management specialist at Montana State University from 2010 to 2014.

This story first appeared on was March 6, 2015.

Olga Walsh uses precision agriculture to help farmers improve their efficiency



Sean Ellis/Capital Press

University of Idaho cropping systems agronomist Olga Walsh uses a pocket sensor to measure crop reflectance in a winter wheat field at UI’s Parma research center. Walsh is studying the use of cutting edge methodologies to help farmers improve water and nutrient use efficiency.

Olga Walsh

Title: Cropping systems agronomist, University of Idaho

Education: Bachelor’s degree in soil science, St. Petersburg State University, Russia; master’s and Ph.D. degrees in soil science, Oklahoma State University

Home: Nampa, Idaho

Family: Husband, Stephen, and three children, ages 12, 6 and 3



AP Photo/Alex Brandon

This DJI Phantom 3 drone and others are rapidly becoming part of precision agriculture as innovators such as Olga Walsh investigate ways to put them to work on the farm.