Idaho Crops & Soils News

A newsletter to serve the best interests of Idaho crop producers

January 30, 2015 **Issue No. 1**

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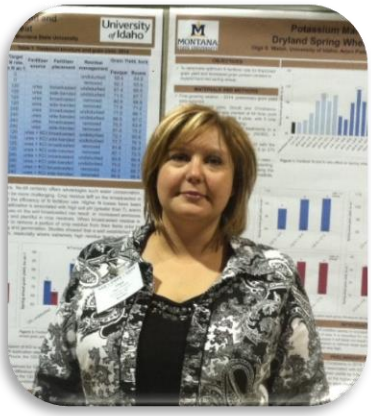
University of Idaho Extension

From the Editor



Hello and welcome to the very first issue of the monthly **Idaho Crops & Soils News!** First, to introduce myself, my name is Olga Walsh, I serve as a Cropping Systems Agronomist and Extension Specialist with the University of Idaho's Southwestern Research & Extension Center, located in Parma, ID. I joined the University of Idaho in September 2014, after working as a Soil Nutrient Management Specialist at Montana State University, 2010-2014. I received my Bachelor's Degree in Soil Science (focusing in Soil Chemistry) at St. Petersburg State University, Russia. I obtained my Master's (2006) and Ph.D. (2009) Degrees in Soil Science (majoring in Soil Fertility and Precision Nutrient Management) from Oklahoma State University.

At the University of Idaho, I am charged with developing a nationally-recognized research and educational programs in sustainable cropping systems using best management practices for important crops grown in Idaho. I am passionate about working with agricultural producers, industry leaders, educators, students and other community members to fulfill the mission of the University of Idaho as the land-grant institution.

My research and educational efforts are focused on:

- improving the efficiency of crop production, including nutrient, water, and energy use efficiency,
- developing cutting-edge methodologies for effective and timely crop monitoring and management, and
- promoting practices that help to maintain and improve grower sustainability, profitability, and competiveness, while maintaining environmental integrity.

It's been busy last a few months, and I have several exciting projects in the works, including:

- Sustainable Cropping Systems for Dual-Purpose Biennial Canola
- Reference Strips and Precision Sensors for Increased Nitrogen Use Efficiency in Wheat Production
- Systems for Improving Water and Nitrogen Use Efficiency in Spring Wheat
- Evaluation of Biological Seed and Foliar Products for Improved Bean Yield and Quality

Every issue of the Idaho Crops & Soils News will have three exciting parts:

- **WHAT'S NEW?** (to share our Cropping Systems' group news and achievements)
- **GUEST CONTRIBUTION** (interesting and relevant information provided by other University of Idaho researchers and students)
- **GETTING TO KNOW ID AG** (exciting information about Idaho agriculture)

We hope you'll enjoy our Newsletter!

Sincerely,

Olga Walsh (owalsh@uidaho.edu)

WHAT'S NEW?

Introducing the "Idaho Crops & Soils" Blog

Our Cropping Systems Research and Extension group's on-line resource is the newly established **"Idaho Crops & Soils" blog,** which can be accessed at: **http://idcrops.blogspot.com**.

You are welcome to visit the blog and submit your questions and suggestions regarding agricultural crop production by using the "Comments" window. We will be utilizing the blog to post information relevant to crop producers: research highlights, ads for upcoming events (such as field days, seminars, commodity schools and workshops), and answers to grower's questions.

http://idcrops.blogspot.com

Research and Education Priorities

In November 214, a newly formed University of Idaho Agronomy and Soil Fertility Advisory Committee has met to identify the most pressing research and education needs and provide guidance to recently appointed and more seasoned University faculty and students. The following topics were listed among the most important:

- Water quality and quantity (protection and conservation)
- Updating older information to keep up with the current developments in crop varieties, management methods, and technological advances
- Multi-disciplinary multi-state collaborative work and multi-commodity approach
- Up-to-date research on nitrogen, phosphorus and potassium cycling in the plant-soil systems
- Conducting applied research that focuses on the real-world challenges
- Sustainability (food safety, profitability, environmental, salts, compost)
- Evaluation of organic production systems and biological products
- Precision agriculture (technology, investment needed, recommendations, current site-specific focus)

We are here to serve you! We would like to hear from you in terms of what kind of research and educational programs you would like to see conducted and which programs would you benefit from the most.

Precision Agriculture Interview

This month, I was excited to travel to Saskatoon, CA, as a featured speaker and give a talk on the utilization of cutting-edge precision agriculture tools and methodologies for site-specific nutrient management and improved nutrient use efficiency. The interview was conducted by the **Western Producer's** reporter Robin Booker.
The meeting held Jan. 12 – 15, 2015 in Saskatoon attracted 18,806 people for the four-day event.

The show is held in conjunction with Crop Week events, which involve meetings and presentations hosted by many top commodity groups. The information presented during the events, helps farmers to formulate plans for the upcoming growing season.
The interview video is posted at **"Idaho Crops & Soils" blog: http://idcrops.blogspot.com**;

http://idcrops.blogspot.com/2015/01/remote-sensing-interview-at-2015-crop.html

Upcoming Precision Agriculture Seminar

Date & Time: Tuesday, February 24, 2015, 12 noon to 5:30 pm
Place: Boise Public Library, **The William F. Hayes Memorial Auditorium**
Address: 715 S. Capitol Blvd., Boise, ID 83702

Contact information: Olga Walsh, Cropping Systems Agronomist, Univeristy of Idaho Southwestern Research & Extension Center, parma, ID; (208)722-6701 (ext 218), owalsh@uidaho.edu

This seminar is provided free of charge, refreshments will be provided.

Speaker information:

- **Jessica Torrion**, Assistant Professor, Crop Physiologist, Montana State University, Northwestern Agricultural Research Center, Kalispell, MT
- **Krista Shellie**, Research Horticulturalist, USDA-ARS, Parma, ID
- **Olga Walsh**, Cropping Systems Agronomist and Extension Specialist, University of Idaho, Parma Research & Extension Center, Parma, ID
- **Sulochana Dhital**, PhD, Research Assistant, Oklahoma State University, Stillwater, OK
- **Craig Thompson**, Take Flight Aviation LLC, Unmanned Aerial Systems development and pilot, Nampa/Boise, ID

"Precision agriculture – use of all available technologies to reduce costs, increase productivity, increase efficiency, and reducing environmental impacts by making better decisions. Sustainable agriculture

integrates three main goals: environmental stewardship, farm profitability, and prosperous farming communities" - Robert Blair, 2013 Idaho Governor's Award for Excellence in Agriculture: Technology & Innovation, 2013 University of Idaho Land Grant Legacy, 2012 McCloy Agriculture Fellowship, 2011 Eisenhower Fellowships Agriculture Fellow, 2009 Precision Ag Institute - Farmer of the Year.

GUEST CONTRIBUTION

Unmanned Aerial Systems for crop monitoring and management

Jae Ryu and the team (Jim Barbour, Olga Walsh, Ronda Hirnyck, and Jerry Neufeld) are developing a research and educational project in collaboration with local Idaho crop producers.

Photo courtesy Olga Walsh. Ryu, Nuefeld and Walsh are meeting with ag producers, January, 2015, Nampa, ID.

"The project will utilize unmanned aerial vehicles (UAV's) and precision remote sensors with the goal of assisting local agricultural producers in making more informed water, nutrient, weed, and pest management decision by strengthening drought monitoring to better characterize drought conditions, enhance an early warning science of plant/crop stresses associated with drought, nutrient and insect pest stress", Ryu explains. This project will have a strong educational outreach component with field days, seminars and workshops. "The group is also focusing on promoting collaborative ag research and enhance Idaho's economic competiveness by working with ag producers and industrial partners", says Ryu. The group is planning to work with growers of various crops, including: including alfalfa, corn, hay, sugar beet, potato, wheat and others. According to Ryu, one of the major outputs of this work will be the high-resolution drought monitoring map, the UAV-based drought index, and current aerial images for timely crop stress analysis and management.

UAV-mounted remote sensors

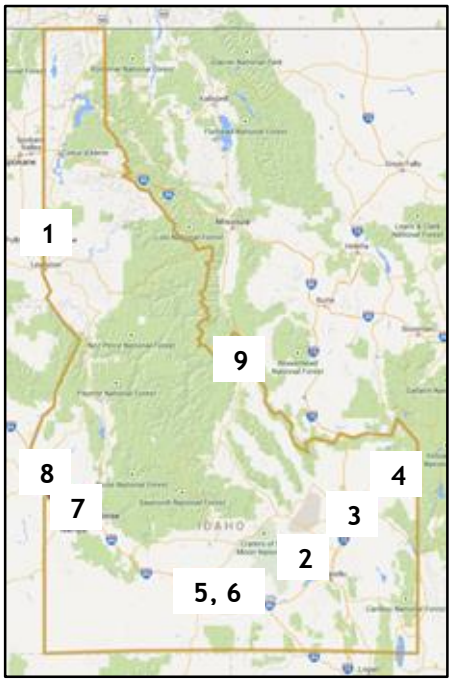
Precision agriculture tools, such as remote sensors, allow for accurate assessment of plant health. Mounted on the UAVs, these units enable rapid screening of large numbers of plots to identify crop growth habits that contribute to crops final yield and quality in a variety of environments. Federal Aviation Association (FAA) allows public entities including universities to apply for a Certificate of Authorization (COA) in order to conduct agricultural research utilizing UAVs.
As estimated by the Association for Unmanned Vehicle Systems International (AUVSI), the economic impact of UAV systems in Idaho is estimated as $29 million during the 2 years from 2015 to 2017, and $174 million during the 10 years from 2015 to 2025, with a national impact of $82 billion. The major challenge in the

adoption of UAS for agriculture is the lack of proof of concept and sound methodologies for incorporating the UAV-based data into crop management decisions.

http://www.auvsi.org/econreport

GETTING TO KNOW ID AG

Idaho Agricultural Experiment Station



The **Idaho Agricultural Experiment Station** and University of Idaho Extension d compare crop varieties.

operate regional Research and Extension Centers located across the state with emphasis on crops and soils:

Northern Idaho

1. Palouse Research, Extension and Education Center, Moscow

Southeastern Idaho

2. Aberdeen Research and Extension Center
3. Idaho Falls Research and Extension Center
4. Tetonia Research and Extension Center, Newdale

Southcentral Idaho

5. Kimberly Research and Extension Center
6. Twin Falls Research and Extension Center

Southwestern Idaho

7. Caldwell Research and Extension Center
8. Parma Research and Extension Center

Central Idaho

9. Nancy M. Cummings Research, Extension and Education Center, Salmon

http://extension.uidaho.edu/iaes/centers/

Please visit University of Idaho Extension Crop Production web-page (**http://www.extension.uidaho.edu/crops.asp**) for timely and local research-based information to help growers control pests, market products, an