The goal of this monthly newsletter is to serve the best interests of Idaho crop producers. Correspondence and inquiries should be addressed to: Olga Walsh, Cropping Systems Extension Specialist, Southwest Research and Extension Center, 29603 U of I Lane, Parma, ID 83660, Phone: (208)722-6701 (ext. 218), Fax: (208)722-6708, Email: owalsh@uidaho.edu

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University of Idaho Extension improves people’s lives by engaging the University and our communities through research-based education. Our areas of expertise are Agriculture, Community Development, Family and Consumer Sciences, Natural Resources, and Youth Development.

To enrich education through diversity the University of Idaho is an equal opportunity/affirmative action employer and educational institution.
WHAT’S NEW?

Precision Sensing for Field Crops

By Olga Walsh

The University for Idaho Cropping Systems Agronomy team (Olga Walsh and Jordan McClintick-Chess) in collaboration with Cereal Cropping Systems group, UI Aberdeen (Juliet Marshal and Chad Jackson) is working on a precision nitrogen management study funded by the Idaho Wheat Commission. We have completed the first year of study in 2015 at 4 locations Rupert, Aberdeen, Ashton, and Soda Springs. This year, we have added the 5th location at Parma. The project is aiming to improve wheat production in Idaho by 1) developing sensor-based nitrogen rate calculator, 2) enhancing the variety testing program by utilizing precision agriculture methodologies.

Nitrogen use efficiency is only about 35-40% in most wheat fields due to temporal (in-season and from season to season) and spatial variability (within fields and among fields). Remote sensors and precision cameras allow for accurate assessment of plant health. Development of sensor-based calculator for making nitrogen rate recommendations would help Idaho wheat growers to improve nitrogen use efficiency by recommending nitrogen based on yield potential. The calculator could be used in-season for 1) “blanket” fertilization - one rate applied to the whole field (works best for smaller fields), or 2) variable-rate fertilization using on-the-go sense and spray units (for larger operations). The sensor-based approach to nitrogen fertilization has been shown to deliver over $10 per acre in savings. The first year of study has shown that we are able to successfully predict wheat grain yield potential mid-season with the use of NDVI-based crop sensors in Idaho for both dryland and irrigated conditions. This suggests that, with one or two seasons of data, we will be able to generate a strong yield prediction equation and develop sensor-based N fertilization guidelines.
Silica Effect on Wheat Growth

By Olga Walsh

The University of Idaho Cropping Systems Agronomy team are evaluating the effect of silica amendments in winter wheat. We are accessing three silica rates (100%, 50%, and 25% of suggested rate) and two application times (at emergence in Fall 2015, and at late tillering in Spring 2016). The aim is to determine if wheat grain yield and quality can be improved with silica amendments. Remarkable visual differences were observed in wheat plants growth and development associated with silica rate and application timing. In figures above, the taller darker, healthier looking wheat plants received 100% of suggested rate applied at late tillering. The smaller, paler green plants have not received any silica. Both sets of plants were fertilized at seeding time with nitrogen, phosphorus, and potassium to achieve a non-limiting N-P-K environment.

The above right picture shows that 100% of silica at late tillering resulted in greater number of grain heads and head size compared to plants that received no silica. Interestingly, this effect was not observed when silica was applied in the fall at wheat emergence. This fall, we will be able to determine whether the superior vegetative growth and development will translate into higher grain yields and/or quality.
Inna Popova, analytical instrumentation manager in the Plant, Soil and Entomological Sciences Department, has received a grant from the student fine arts fee fund for her project “Draw Me Some Science.” The project is aiming to create a team of UI students to work with a professional artist to publish several books for young children. The books will feature selected scientific experiments.

For more information about the “What Do Scientists Do?” book, please contact Inna at ipopova@uidaho.edu. The book is an excellent and tool to encourage kids to learn about science and various scientific careers. This fun book will be distributed among Idaho elementary schools this year. The book will be also introduced to teachers participating in Ag in the Classroom visiting UI Parma on June 8, 2016.
GET TO KNOW ID AG

Nitrogen Management - Stakeholder Survey

As part of our precision nutrient management project, we are conducting a statewide stakeholder survey on nitrogen fertilizer management. Please encourage your clientele to complete the survey below.

Please forward completed survey to:

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1. Choose what best describes your occupation:
   a. Grower
   b. Crop consultant
   c. Industry representative
   d. Agricultural researcher
   e. Student
   f. Other

2. What is the most costly input in your farming operation?
   a. Nitrogen fertilizer
   b. Equipment
   c. Fuel/energy
   d. Water
   e. Labor
   f. Pesticides/herbicides

3. How do you manage your nitrogen?
   a. Use field records
   b. Work with crop advisor and fertilizer dealer
   c. Discuss with family and neighbors
   d. Use crop sensors
   e. Consult University Extension
4. Choose what describes you best:
   a. I am happy with my nitrogen management, and do not need any improvements
   b. I could do better with managing nitrogen.

5. Choose what describes your operation most:
   a. My fields are uniform → I do not see variation in yields and quality.
   b. My fields are not uniform → I see variation in yield and quality.

6. Are you using any of these tools in your operation?
   a. Annual soil test
   b. GPS
   c. Yield monitor
   d. Precision planting
   e. Variable rate fertilizer
   f. Crop sensors
   g. Reference strips

7. Are you aware of precision agriculture research in Idaho?
   a. Yes
   b. No

8. Are you aware of crop sensors for nitrogen management?
   a. Yes
   b. No

9. Do you change nitrogen fertilizer management year to year?
   a. Yes
   b. No

10. Do you change nitrogen fertilizer management field to field?
    a. Yes
    b. No

11. Most important factor for changing nitrogen management?
    a. saving on fertilizer cost
    b. applying fertilizer based on crop need
    c. preventing fertilizer loss
    d. increased crop yield quality
    e. simplifying and saving time

TWO OTHER WAYS TO TAKE THE SURVEY:

1) On Twitter: @IDCrops