The Grain Quality Newsletter is published and distributed at no charge to NC-213 (formerly NC-91) participants and supporters of research on “Marketing and Delivery of Quality Grains and BioProcess Cogredients.”

Send your contributions, comments, suggestions, and subscription requests to:

F. William Rainis
Grain Quality Newsletter
The Ohio State University
1680 Madison Avenue
Columbus, Ohio 43210
Phone: 614-292-6265
E-mail: rainis.1@osu.edu

NC-213 Annual Meeting—Mark Your Calendar Now!

The NC-213 Executive Committee, led by Carol Jones, Oklahoma State University, is excited to announce that this year’s NC-213 Annual Meeting will be held February 12–13, 2013, at the Embassy Suites, KCI. Here is a “snapshot” of the meeting’s program:

Tuesday, February 12, 2013
1:00 p.m.–5:00 p.m. NC-213 Technical Session Presentations, Panel Discussions, and Special Presentations. Boxed lunches will be available for purchase.

7:00 p.m. NC-213 Dinner with Business Meeting.

Wednesday, February 13, 2013
8:00 a.m. NC-213 Technical Session Presentations, Panel Discussions, and Special Presentations.

11:45 a.m.–1:30 p.m. Lunch with the Wheat Quality Council. Presentation of The Andersons Cereals & Oilseeds Award of Excellence and The Andersons Early-In-Career Award. (Keynote address will be provided by the Wheat Quality Council.)

1:30 p.m.–3:00 p.m. NC-213 Technical Session Presentations, Panel Discussions, and Special Presentations. 

*Please note: The NC-213 Executive Committee will be holding their annual executive meeting prior to this annual meeting. There are still slots available for presentations. Please send your title and name of presenter(s) to Bill Koshar at koshar.3@osu.edu with any questions.

The Andersons Early-in-Career and The Andersons Cereals and Oilseeds Award of Excellence: The Time Is Now to Nominate

It is once again time to submit nominations for The Andersons Early-in-Career Award and The Andersons Cereals and Oilseeds Award of Excellence. These two awards have become a great way to recognize outstanding achievements by our NC-213 colleagues, individuals from industry, and agencies with whom we collaborate. These awards are presented at our annual meetings and include a plaque along with a cash award. Please begin to think about who you would like to nominate for this year’s awards.

The Andersons Early-In-Career Award

The Andersons Early-In-Career Award recognizes individuals early in their careers whose work has significantly contributed to improvements in science, innovation, technology implementation, policy formation, and/or education related to quality of cereals and oilseeds from processing to consumption, and who show outstanding promise of continuing those contributions in the future.

The Andersons Cereals and Oilseeds Award of Excellence

Individuals must demonstrate a well-documented history of superior contributions to science and/or education related to cereals and oils. These individuals can be associated with a university, private industry, or a state or federal agency. Although it is desirable, they do not need to be a member of NC-213.

Please contact Bill Koshar at koshar.3@osu.edu with any questions.
Research

Differential Accumulation of Deoxynivalenol in Two Winter Wheat Cultivars Varying in FHB Phenotype Response under Field Conditions

Authors: N.J. Hernandez, P.S. Baenziger, K.M. Eskridge, K.H.S. Petris, F.E. Dowell, S.D. Harris, S.N. Wegulo

Submitted to: Canadian Journal of Plant Pathology

 Fusarium head blight (FHB), or scab, is a destructive disease of small grain cereals. FHB also produces the mycotoxin deoxynivalenol (DON), which accumulates in and lowers the value and quality of grain. Field experiments were conducted from 2007 to 2009 to determine if two winter wheat cultivars accumulated DON differently. We also modeled the relationship between FHB severity and DON accumulation. The moderately resistant cultivar ‘Harry’ consistently accumulated more DON than the susceptible cultivar ‘2137’. The relationship between FHB severity and DON was linear and positive for both cultivars in all three years. Environment had a significant effect on DON accumulation in both cultivars, and this effect was attributed to differences in rainfall amount and duration in the months of May and June. DON accumulation was highest in 2008 when there was steady, above-average rainfall in May and June. FDK was highest in 2008 and was higher in Harry than in 2137. The results from this study suggest that a winter wheat cultivar with a moderately resistant FHB phenotype can be susceptible to FDK and DON accumulation. Based on these results, there is a need to standardize the criteria for characterizing wheat cultivars as resistant or susceptible to FHB.

Contact Floyd Dowell, telephone: 785-776-2753, e-mail: floyd.dowell@ars.usda.gov

Detecting the Antimalarial Artemisinin in Plant Extracts Using Near-Infrared Spectroscopy

Authors: K.M. Dowell, D. Wong, X. Wu, F.E. Dowell

Submitted to: American Journal of Tropical Medicine and Hygiene

Medicinal plants have been used for thousands of years to cure many diseases, including malaria. The antimalarial artemisinin is produced by the plant Artemisia annua L. and can be used to cure malaria. Artemisinin is extracted from these plants through a simple tea preparation. The artemisinin content of the tea varies depending on how much of the active ingredient was present in the plant and how much artemisinin was extracted in the tea. However, there is currently no rapid means of measuring the artemisinin content of the tea. We studied the use of near-infrared spectroscopy (NIRS) to detect artemisinin in tea extracts. Our results showed that NIRS can be used to rapidly predict the artemisinin content in tea, and the scanning procedure is simple and quick. Hundreds of samples can be prepared and scanned per day with relatively little training, and the process requires no consumables. This rapid and simple technique could be used in medical clinics to determine whether tea being prepared for patients contains enough artemisinin to be effective. This technology could also be used to study how the growing conditions of the plant affect its production of artemisinin and how different tea preparation methods affect the amount of artemisinin extracted from the plant.

Contact Floyd Dowell, telephone: 785-776-2753, e-mail: floyd.dowell@ars.usda.gov

Reprinted with permission from the Summer 2012 CGAHR Update and CGAHR Research Kernels September 2012.