

Grain Quality Newsletter

News and Highlights from NC-213: Marketing and Delivery of Quality Grains and BioProcess Coproducts.

Volume 34:3

NC-213 The U.S. Quality Grains Research Consortium

2015 International Grain Quality and Food Safety Conference

The conference will be held in Manhattan, Kansas, at the Hilton Garden Inn–Manhattan Conference Center, Monday, August 3 through Thursday, August 6, 2015, with sessions Monday through Wednesday, and an option for a tour on Thursday.

Conference topics include characterization of quality and safety attributes of cereals, oilseeds, and bioprocess coproducts; developing efficient operating and management systems; and quantifying and disseminating the impact of market-chain technologies on providing high value, food-safe, and biosecure grains for global markets and bioprocess industries.

Online registration is open with information on costs and accommodation options at the website grains.k-state.edu/igqfsc-2015. The website has details on the agenda, invited speakers, important dates, how to submit abstracts, and sponsorship opportunities.

The Grain Quality Newsletter is published and distributed at no charge to NC-213 (formerly NC-151) participants and supporters of research on "Marketing and Delivery of Quality Grains and BioProcess Coproducts."

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

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Save the Date! NC-213 Annual Meeting 2015 February 18–19, 2015

Our NC-213 Annual Meeting 2015 will be held February 18–19, 2015, at the Embassy Suites KCI. Once again, we will be joining Ben Hancock and the Wheat Quality Council for a banquet. The Wheat Quality Council will provide the guest speaker and the banquet will include the presentation of the NC-213 Awards: 2015 Andersons Cereals and Oilseeds Award of Excellence and the 2015 Andersons Cereals and Oilseeds Early-in-Career Award of Excellence.

All of our presentation slots are taken, so we are assured to have a diverse and full program.

Along with our Technical Sessions and our Industry Panel Discussion, we are offering two new programs to the Annual Meeting:

- **Poster showing.** Participants will have the opportunity to show posters on NC-213 related research. Your poster can accompany your presentation or share NC-213 related research (not required—optional). Graduate students only: We will have a "People's Choice" Award for the most popular poster. We will have "T" pins available. Individuals are responsible for getting their poster to the meeting site, hanging their poster, and removing the poster by the time of adjournment on Thursday, February 19, 2015.
- **Interview tables/booths for graduate students.** Graduate students will have the opportunity to meet with members of industry for interviews for possible internships. Bring your resume and be ready to be interviewed!

To learn more about the Wheat Quality Council Annual Meeting agenda, please visit:

wheatqualitycouncil.org.

Questions? Please contact Bill Koshar, NC-213 Administrative Support.



The Andersons Research Grant Program:
Team Competition

Request for Proposals

Submission Deadline:
Friday, September 5, 2014
(No later than 5:00PM Eastern Time.)

Photo courtesy of: The Andersons, Inc., Corporate Communications

6/1/2014 NC-213: Marketing and Delivery of Quality Grains and BioProcess Coproducts

The Anderson's Grant Research Program Continues a Long Standing Tradition with Current Request for Proposals—Proposal Submission Closed

NC-213 has been fortunate to host for many years The Andersons Research Grant Competition. This competition, supported by The Andersons endowment, has led to many fine discoveries and has leveraged additional funding from private industry, states, and the federal government; it is a hallmark of NC-213.

The current request for proposals was released in June and the Administrative Advisor's Office received eight proposals in response to this funding opportunity. The results will soon be announced.

Good luck to those teams who submitted proposals!

North Dakota State University's Mihiri Mendis Garners Award

The AACC International Professional Development Panel hosted the 6th annual Best Student Research Paper Competition that was held at the 2014 AACCI Annual Meeting in Providence, Rhode Island, USA, October 5–8, 2014. The objectives of the competition were to challenge students to demonstrate superior presentation skills, encourage students to present their research work at AACCI, highlight the best research conducted and presented by students, and offer an opportunity for students to interact with the AACCI community at an early stage in their career. The competition was judged in two stages. The AACCI Best Student Research Paper Competition jury reviewed the nomination forms, abstracts, and initial presentations. Based on the judge's scores, six students were chosen to participate in the competition taking place at the annual meeting. Mihiri Mendis from North Dakota State University was awarded the first place at this year's competition. She presented part of her dissertation research carried out under the guidance of her adviser Dr. Senay Simsek. Her research title was "Arabinoxylan Hydrolyzates as Immunomodulators."



Mihiri Mendis

Visit the NC-213 website at: nc213.org



NC-213 Participants Share Their Research...

Here are the latest research activities involving NC-213 scientists. This information is shared, by permission, from the USDA-ARS Center for Grain and Animal Health Research, Manhattan, Kansas.

Efficacy of dichlorvos applied as an aerosol against *Tribolium confusum* adults and *Tribolium castaneum* pupae in a flour mill

Authors: Bh. Subramanyam, D. R. Boina, F. H. Arthur

Abstract: The distribution, efficacy, and residual activity of dichlorvos applied as an aerosol to each of five floors of the Kansas State University pilot flour mill (9,968.8 m³ total volume) were evaluated based on responses of adults of the confused flour beetle, *Tribolium confusum* (Jacquelin du Val), and pupae of the red flour beetle, *Tribolium castaneum* (Herbst), during and after application. Dichlorvos was applied at the highest labeled rate of 0.35 g/m³ on each floor. Concrete treatment arenas with or without different life stages of the two species were placed in open, obstructed, and concealed mill locations during aerosol application. The

latter two locations included arenas placed underneath pieces of equipment and within equipment, respectively. These arenas were brought to the laboratory after 24 h in the mill and insects were immediately exposed on the arenas or on arenas aged for 24 h in a laboratory growth chamber at 28 ± 1 °C and 65 ± 5% r.h. Knockdown and mortality of *T. confusum* adults was 99–100% and mortality of *T. castaneum* pupae was 97–100% in open and obstructed mill locations, indicating uniform distribution of dichlorvos on each floor. In concealed locations, knockdown and mortality of *T. confusum* and *T. castaneum* was 85–94%, indicating effective dispersion of dichlorvos. Holding insects directly exposed to dichlorvos for an additional 24 h in the same arenas did not increase knockdown or mortality. Exposure to aged dichlorvos residues on concrete resulted in moderate to poor knockdown and/or mortality of *Tribolium* spp. suggesting loss of residual activity. Results show dichlorvos will give immediate kill of exposed insects but will not offer effective residual control.

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Iowa State University Releases Mycotoxins Videos

By Charles Hurburgh, Department of Ag and Biosystems Engineering; Alison Robertson, Department of Plant Pathology; and Erin Bowers, Department of Agricultural and Biosystems Engineering.

For a more in-depth discussion and overview of mycotoxins, the Grain Quality Initiative and the Crop Advisor Institute have prepared two video modules, Mycotoxins in Feed and Grain Industries.

Each program is about 30 minutes; one covers basic biology and development of mycotoxins and the second covers management and testing issues.

Toxins I: "Mycotoxin Development" can be viewed at:
cai.iastate.edu/extension/mycotoxinsone/index.html

Toxins II: "Best Practices in Handling and Testing" can be viewed at:
cai.iastate.edu/extension/mycotoxinstwo/index.html

Charles Hurburgh is a professor in the Department of Agricultural and Biosystems Engineering. He can be reached at tatry@iastate.edu or 515-294-8629.

Alison Robertson is an associate professor in the Department of Plant Pathology and Microbiology. She can be reached at alisonr@iastate.edu or 515-294-6708.

Erin Bowers is a post-doctoral research associate in the Department of Agricultural and Biosystems Engineering. She can be reached at erin@iastate.edu or 515-294-6383.

Mycotoxins in Grain and Feed Industries

I. Mycotoxin Development



Erin Bowers, Iowa State University, Agricultural Engineering
Charles Hurburgh, Iowa State University, Agricultural Engineering
Alison Robertson, Iowa State University, Plant Pathology

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Extension and Outreach

GRAIN STORAGE TEAM
page 1



Mycotoxins in Grain and Feed Industries

II. Best Practices in Handling and Testing



Erin Bowers, Iowa State University, Agricultural Engineering
Charles Hurburgh, Iowa State University, Agricultural Engineering
Alison Robertson, Iowa State University, Plant Pathology

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GRAIN STORAGE TEAM
page 1

