

Grain Quality Newsletter

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

Volume 31:2

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

Calendar Items of Interest

The Andersons Research Grant Program—Regular Competition. The RFP has been released and the due date for electronic submission of grants is September 1, 2011.

Call for Papers—2012 NC-213 Annual Meeting/ Technical Sessions. Submit your paper now to reserve your spot on our 2012 program. See the article in this issue of GQN for a story on the meeting.

Here is a listing of Cereal Science & Soy Foods—Congress, Conference, Symposium, and Expos—International (United States and Abroad):

Months of July and August

- July 17–19: "Interbake Africa 2011." Gallagher Convention Centre, Midrand, Johannesburg, South Africa. Contact: Lineke Fleischer van der Bruggen. Tel: +27 (0) 11 783 7250, Fax: +27 (0) 11 783 7269, E-mail: admin@exhibitionsafrica.com, Web: www.exhibitionsafrica.com
- July 31–August 3: "The International Association for Food Protection, 2011 Annual Meeting, IAFP 2011." Frontier Airlines Center, Hilton Milwaukee. Milwaukee, Wisconsin, USA. Contact: International Association for Food Protection. 6200 Aurora Avenue, Suite 200W Des Moines, IA 50322-2864 USA. Tel: +1 (515) 276 3344, Fax: +1 (515) 276 8655, E-mail: info@foodprotection.org, Web: www.foodprotection.org/events/iafp-annual-meeting/

Month of September

- 4–9: "61st Australian Cereal Chemistry Conference." Twin Towns Clubs and Resorts. Coolangatta–Tweed Heads, NSW, Australia. Contact: Australian Grain Science Association. E-mail: contact@ausgrainscience.org.au, Web: www.ausgrainscience.org.au
- 27–29: "3rd MoniQA International Conference: Food Safety and Consumer Protection." Varna, Bulgaria. Contact: Anita Habershuber, Event Management. ICC—International Association for Cereal Science and Technology. General Secretariat. Marxergasse 2 A–1030 Vienna, Austria. Tel: +43–1–707 72 02–7551, Fax: +43–1–707 72 04, E-mail: anita.habershuber@icc.or.at, Web: http://varna2011.moniqa.org/5

Month of October

- 2–4: "All Things Baking." Renaissance Schaumburg Hotel and Convention Center in Schaumburg, IL, USA. Contact: E-mail: info@allthingsbaking.org, Web: http://allthingsbaking2011.com/
- 2–5: "22nd Annual IAOM Mideast and Africa District Conference and Expo." Dead Sea, Jordan. Contact: Ms. Eva Mulyana, Conference Manager. IAOM Mideast & Africa District, c/o PO Box 566, P.C. 112 Ruwi, Muscat, Sultanate of Oman. Tel: +968 2471 2338, Fax: +968 2471 1340, Mobile: +968 92885593, E-mail: info@iaom-mea.com, Web: www.iaom-mea.com or Shannon Henson, Director of Meetings and Exhibits. IAOM, International Association of Operative Millers. 10100 West 87th Street, Suite 306 Overland Park, KS 66212 USA. Tel: 1 (913) 338 3377, Fax: 1 (913) 338 3553, E-mail: shannon.henson@iaom.info, info@iaom.info, Web: http://www.iaom.info
- 10–13: "Modern Bakery Moscow. 17th International Trade Fair for Bakery & Confectionery." Expocentre Fairgrounds. Moscow, Russia. Contact: Ost-West Partner GmbH. P.O. Box 2127 92611 Weiden, Germany. Tel: +49 (0) 961 38977-70, Fax: +49 (0) 961 32035, E-mail: info@modernbakery-moscow.com
- 11–14: "IBATECH SYRIA 2011, 2nd Trade Fair for Bakery Machinery, Food, Packaging and Technologies." Damascus, Syria. Contact: Özlem Ercan, International Sales Director. Messe Stuttgart Ares Fuarçılık Ltd. St. Binbir Çiçek Sok. Naci Bey Apt. No: 3/9 1. Levent, Istanbul, Turkey. Tel: +90 (212) 284 1110, Fax: +90 (212) 284 1001, E-mail: ozlem.ercan@messe-stuttgart.com.tr, info@messe-stuttgart.com.tr, Web: www.messe-stuttgart.com.tr

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."

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Mark Your Calendar ... NC-213 Annual Meeting & Technical Sessions 2012

NC-213's 2012 Annual Meeting & Technical Sessions will be held March 6 & 7, 2012, at the Hilton Minneapolis alongside GEAPS Exchange 2012. Here is the tentative agenda:

—The NC-213 Executive Team will hold a teleconference prior to March 6. This will allow for more time to hold the business meeting and schedule technical session presentations.

—Tuesday, March 6: NC-213 will be presenting during two 55-minute discussion periods (back to back). The first period would be three to four NC-213 representatives reviewing current areas of research. The second period would be a discussion with GEAPS with a focus on research priorities for industry.

—Tuesday, March 6: NC-213 Business Meeting followed by the GEAPS Exchange Banquet.

—Wednesday, March 7: Technical Sessions.

We are currently accepting presentation titles. Presentations on research may cover any of our three objectives. Also, if you have an awarded Andersons Research Grant you should make every effort to present your research. If you are at the end of your two-year research period, you must present your research at the annual meeting. Submit your title now to reserve your slot!

As always, NC-213 members are encouraged to attend as much of GEAPS Exchange as possible. GEAPS Exchange 2012 will be held in the convention center, which is conveniently attached to the Hilton via a skywalk.

Cargill Grant to Help Kansas State University Develop Feed Safety Research Center

MINNEAPOLIS, Jan. 24, 2011 /PRNewswire/ — Cargill today announced a partnership with Kansas State University (KSU) for the construction of the Cargill Center for Feed Safety Research. The facility, built in part from a \$500,000 grant from Cargill, will conduct studies to address current food and feed safety issues facing the animal feed industry.

"At present, there is not a single facility in the United States licensed and approved for feed-related research involving Salmonella, *E. coli*, and other common, food-related pathogens. We are thankful that Cargill's contribution helps support the construction of this Kansas State research facility," said Dr. Kirk Schulz, Kansas State University president.

"Animal nutrition research during the past 50-plus years has focused on several key areas, including the establishment of nutritional requirements of animals," said Dr. Gary Pierzynski, interim dean, KSU College of Agriculture. "The growing importance of related factors, such as food safety and control of food-borne pathogens, is increasingly evident. Future animal nutrition and feed processing technologies research must take these factors into consideration to ensure the long-term sustainability of animal agriculture."

Once operational in late 2012, the planned research efforts include feed processing technologies to lower bacterial/viral introduction to animal food livestock operations and the food chain. The facility will be located on the Manhattan, Kansas, KSU campus and housed in the O.H. Kruse Feed Mill and Bio-refinery. It will be in close proximity to the new National Bio and Agro-Defense Facility federal laboratory, built by the Department of Homeland Security. The laboratory will be capable of conducting food and feed research relating to

dangerous and exotic foreign animal diseases. The Cargill Center for Feed Safety Research will be a critical link between the research and teaching efforts of these facilities. "Advancements in food safety are one of the biggest focus areas for the industry at the present time," said Chuck Warta, a vice president at Cargill Animal Nutrition. "Feed and feed ingredients are an increasingly critical part of the safe food system. Helping enable this research is an investment that reaches beyond Cargill. The entire animal feed industry will benefit from the continued development of food, feed, and feed ingredient safety."

The Andersons Research Grant Program: Regular Competition is Announced

A large measure of the success of the NC-151/NC-213 Committee over its 25-year existence is due to the research funds made available on a recurring basis by The Andersons Agricultural Research Fund. This competition also aids in fostering collaboration between researchers, institutions, and industry. Additionally, the goal of the competition is to develop new approaches and technologies to maintain or improve the quality of cereals and oilseeds from harvest to delivery, while preserving the environment and maintaining consumer safety. These approaches and technologies must be developed and implemented if the United States is to remain at the forefront of the world's major producers. This program is focused on facilitating multidisciplinary, multistate, and multiagency collaborative research to address critical cereal and oilseed research issues.

With this competition, NC-213 follows other grant competitions by offering online submission of proposals. Along with this new approach, reviewers will be able to review proposals online and researchers will be able to submit first year, second year, and supplemental reports online. Complete details can be found in the request for proposals. The Administrative Advisor's office is anxious to hear your feedback regarding these online processes.

Hurry! The deadline is September 1, 2011.

About Cargill

Cargill is an international producer and marketer of food, agricultural, financial, and industrial products and services. Founded in 1865, the privately held company employs 131,000 people in 66 countries. Cargill helps customers succeed through collaboration and innovation, and is committed to applying its global knowledge and experience to help meet economic, environmental, and social challenges wherever it does business. For more information, visit www.cargill.com.

Source: Cargill

Visit the NC-213 web site at: <http://www.oardc.ohio-state.edu/nc213>

Issued July 2011



NC-213 Engineers, Scientists, and Economists share their research ...

Impact of Different Isolation Procedures on the Functionality of Zein and Kafirin

Authors: T. Schober, S. Bean, M. Tilley, B.M. Smith, B.P. Ioerger

Submitted to: *Journal of Cereal Science*

Producing high-quality baked products such as bread from corn and sorghum is challenging due to the fact that the native proteins of these grains do not form dough when mixed with water. Previous research has shown that commercially isolated corn proteins will form dough however. Laboratory isolated corn and sorghum proteins, however, did not have the same functionality as the commercial corn samples. Modifying extraction procedures to enrich isolated proteins with a specific component of corn proteins improved the functionality of the lab isolated proteins. Likewise, by modifying the extraction conditions, functionality of isolated sorghum proteins was improved. Understanding the factors necessary to make isolated

corn and sorghum proteins function more like wheat will provide the necessary knowledge to produce fully functional sorghum flours for the wheat-free food market.

Contact Scott Bean, telephone 785-776-2725, e-mail: scott.bean@ars.usda.gov

Cracked Hulls Affect Population Development of *Rhyzopertha dominica* in Rough Rice

Authors: N. Kavallieratos, C. Athanassiou, F.H. Arthur, J.E. Throne

Submitted to: *Insect Science*

Lesser grain borers are serious pests of stored rice throughout the world. Varieties of rice vary in their resistance to insects, and resistance may be related to cracks in the hull of the rice kernel. Lesser grain borers lay their eggs loose in the mass of rice kernels, and young larvae search out and bore into a rice kernel, where they complete development. Thus, kernels with cracked hulls may be selected by females for egg laying or they may be selected by larvae because they may be easier to enter. We showed that more progeny emerged from kernels with cracked hulls when these kernels were mixed in with intact rice kernels, but some progeny did emerge from intact kernels. Thus, using grain handling methods that reduce cracked hulls in rice would be expected to reduce insect damage to rice in storage.

Contact Frank Arthur, telephone 785-776-2796, e-mail: frank.arthur@ars.usda.gov

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Latest News from the Center for Grain and Animal Health Research

Manhattan, Kansas

Read about our colleagues at the CGAHR.

Grain Quality and Structure Research Unit

Grants:

Scott Bean and Kansas State University collaborators received \$38,000 for "Developing sorghum flours with increased resistant starch content for health benefits" from the Kansas Grain Sorghum Commission.

Jeff Wilson and Scott Bean were awarded \$12,364 for their project "Effect of starch content on the functional quality of sorghum" from the Kansas Grain Sorghum Commission.

Meeting/Conferences:

Scott Bean, Mike Tilley, Jeff Wilson, and Tom Herald attended the Celiac Sprue Association National Meeting in Kansas City, MO.

Scott Bean, Deidre Blackwell, and Brian Ioerger attended the American Chemical Society Meeting in Anaheim, CA.

Stored Product Insect Research Unit

Meeting/Conferences:

Frank Arthur, Dick Beeman, Jim Campbell, Paul Flinn, Jeff Lord, Brenda Oppert, Joel Perez-Mendoza, and Jim Throne attended the Annual Meeting of the Entomological Society of America in San Diego, CA. Frank Arthur gave an invited talk "The Peer Review Process: A new editor's view," Dick Beeman gave the invited talk "The *Tribolium* genome sequence: offshoots and enhancements," Jim Campbell gave the invited talk "Advances in the implementation and interpretation of stored-product insect monitoring programs in food facilities," Brenda Oppert presented the talk

"Effect of *Bacillus thuringiensis* Cry3Aa intoxication on the expression of cysteine and serine peptidase transcripts in the midgut of the yellow mealworm, *Tenebrio molitor*," and Jim Throne gave the invited talk "Publications and the ARS Evaluation System." Jeff Lord presented the poster "Comparison of entomopathogenic fungi for hide beetles on various substrates," Brenda Oppert presented the poster "Microarray analysis reveals adaptive strategies of *Tribolium castaneum* larvae to compensate for cysteine and serine protease inhibitors," and Joel Perez-Mendoza presented the poster "Effect of physiological factors on flight initiation of the red flour beetle, *Tribolium castaneum* (Herbst)."

Frank Arthur presented the talk "Insect growth regulators as an alternative in controlling stored product insects," and Jim Campbell presented the talks "Biology, habitat and control of Indian meal moths" and "Surveillance and monitoring programs for foreign stored grain pests" at the Nebraska Urban Pest Management Conference in Lincoln, NE.

Frank Arthur presented the talk "Stored product insects and control in structures: Pilot-scale studies" at a departmental seminar at the Department of Entomology, Kansas State University, Manhattan, KS.

Frank Arthur presented the talk "Integrated pest management for stored product insects" at the Industrial Fumigant Co. 2011 Training Conference for Food Industry Pest Management in Overland Park, KS.

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North Dakota State University is hiring a Research Specialist for their Animal Sciences Beef Cattle Research Complex.

To apply: Go to <https://jobs.ndsu.edu/postings/search> and search for opening #1100182.

For more information: Contact Kendall Swanson, Search Committee Chair at 701.231.6502 or kendall.swanson@ndsu.edu.