NC-213 Annual Meeting/Technical Session Program
Embassy Suites K.C.I.
7640 N.W. Tiffany Springs Parkway
Kansas City, Missouri 64153
816-891-7788

NC-213 Annual Meeting Set for February 2007

The NC-213 Annual Meeting/Technical Session is scheduled for February 21 and 22, 2007, at the Embassy Suites K.C.I. in Kansas City, Missouri. We will be enjoying a joint banquet with the Wheat Quality Conference.

NC-213’s current Executive Committee is excited to offer a program that will include many informative presentations. Here is the tentative program:

**Wednesday, February 21, 2007**

11:00 a.m.–1:00 p.m.
NC-213 Executive Committee Meeting.

1:00 p.m.–5:00 p.m.
NC-213 Meeting Registration.

1:00 p.m.–5:00 p.m.

Sit-down plated-dinner with Wheat Quality Council and NC-213. Presentation of The Andersons Research Award. Keynote Address provided by Wheat Quality Council (speaker to be announced). Location: Ballroom, Embassy Suites K.C.I.

**Thursday, February 22, 2007**

8:00 a.m.–12:00 p.m.
NC-213 Technical Sessions, Continuation.

12:00 p.m.–1:30 p.m.
NC-213 Business Meeting.
Location: Salon E, Embassy Suites K.C.I.

For all NC-213 Participants, Executive Board, and Industry Advisory Committee.

The Technical Sessions will include presentations from all three objectives and awarded proposals from the Andersons Research Grant Program.

**Objective 1:** This session will explore the practices and technologies to support quality management systems for production, distribution, processing, and utilization of quality grains and oil seeds. Papers will address, in part, the practices and technologies to support quality management systems for production, distribution, processing, and utilization of grains and oil seeds. Pre-harvest production will also be covered.

**Objective 2:** This session will explore basic knowledge, science-based standards, and technologies that promote crop quality, food security, and food safety in grain markets. Papers will address grain quality and food safety during production, storage, and processing for feed, food, or industrial use.

In addition, this session will include the evaluation and development of standards and technologies based on sound science. Research areas include identity preservation; pest control; microbial indicators of safety and quality; physical, chemical, and biological means of ensuring grain quality and safety; and trace-back technologies.

**Objective 3:** This session will explore the creation of and dissemination of scientific knowledge that will enhance public confidence in market-driven quality management systems for grain. Papers will address methods of measuring ingredients, methods of evaluating biochemical components, and the identification of quality traits of ingredients.

**Speakers**

Richard Stroshine, Purdue University

Storability measurement of shelled corn as a means of improving stored grain management practices and preventing losses. (Anderson Grant Program Regular-Awarded Proposal)

Richard Stroshine, Purdue University

Physical and chemical properties of shelled corn related to conditioning and processing. (Anderson Grant Program Regular-Awarded Proposal)

Lloyd Bullerman, University of Nebraska-Lincoln

Biological evaluation of reduction of Fumonisim B1 Toxicity in corn grains by extrusion processing. (Anderson Grant Program Regular-Awarded Proposal)

Klein Ileleji, Purdue University

Ozonation of corn, wheat, and barley for the control of pests and spoilage agents, and the removal of off-odors in commercial grain storage structures. (Anderson Grant Program Team-Awarded Proposal)

Tim Herrman, Texas A&M University

Review on a Distance Learning Program with the Feed Industry.

IWCSPP Conference Explores Grain Quality Preservation

More than 400 scientists, engineers, government officials, students, media, and industry representatives from 46 countries gathered at the 9th International Working Conference on Stored Product Protection (IWCSPP) in Campinas, Brazil, from October 15 to 18, 2006, to present, review, and discuss the latest research, technologies, and practices related to grain quality preservation and stored product protection.

NC-213 participants who attended were Linda Mason and Dirk Maier from Purdue University; Tom Phillips and Brian Adams from Oklahoma State University; Bh. Subramanayam from Kansas State University; Jim Throne, Frank Arthur, Paul Flinn, and Jim Campbell from the USDA-ARS ORMPC; and Don Wicklow from the USDA-ARS NCAUR.

NC-213 members were actively involved in all aspects of the conference by serving as session moderators (Paul Flinn, Jim Throne, Bh. Subramanayam, Dirk Maier), keynote speakers (Don Wicklow, Frank Arthur, Dirk Maier) as well as oral paper and poster presenters. Altogether, NC-213 members contributed a substantial portion of the 180 proceedings contributions.

Proceedings in hard copy or on CD are available by contacting Dr. Jim Campbell at james.campbell@ pestsys.ksu.edu.

Additionally, Jim Throne, who has served many years as secretary-treasurer of the IWCSPP Permanent Committee (PC) was elected chair of the PC and Jim Campbell elected secretary-treasurer. Dirk Maier was elected to serve on the PC as the first engineering representative.

The primary purpose of the PC is to coordinate the planning of each conference.

The IWCSPP takes place every four years and is the premier scientific conference on grain quality preservation and stored product protection in the world. Its primary purpose is to bring together research scientists, consultants, extension specialists, government officials, and industry representatives involved in the safe storage of the world’s durable food commodities, such as grains, legumes, pulses, rice, and wheat, as well as derived processed products, such as animal feeds. (See http://www.alex.org.br/9thIWCSPP/en/index.php).

The 10th IWCSPP will be held in Lisbon, Portugal, in 2010. All NC-213 members are encouraged to attend the next conference.
Detection of Underdeveloped Hazelnuts From Fully Developed Nuts by Impact Acoustics

The acoustic emissions from inshell hazelnuts as they impact with a steel plate were analyzed for their ability to distinguish nuts with fully developed kernels from those with underdeveloped kernels. The analysis included examination of the acoustic signals in the time domain as well as the frequency domain. Classification accuracies as high as 97% were achieved by this simple and low-cost method. The system has a potential to sort nuts at rates up to 40 per second. Nuts with underdeveloped kernels are of lower value and can be more likely to contain aflatoxin. Thus, this method should give hazelnut producers and exporters a means to produce a higher quality and safer product.

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Separation of Pearl Millet Proteins by HPCP

Pearl millet is widely grown around the world for a diverse number of uses. Millets are common in developing countries and often grown in areas with poor soil and low moisture levels. The characterization of pearl millet proteins is far behind that of cereals such as wheat.

The purpose of this project was to investigate the use of high-performance capillary electrophoresis (HPCP) for characterizing pearl millet proteins and for use in varietal identification and potential for analysis of protein expression during kernel development. HPCP was found to successfully separate millet proteins and was a rapid technique for differentiating pearl millet hybrids and lines. This provides a new tool for studying pearl millet proteins.

Factors Impacting Ethanol Production From Grain Sorghum in the Dry-Grind Process

Sorghum is a drought- and heat-tolerant grain with starch and the convenience of feed handling. An estimated 80% of nonruminant feed in the United States is pelleted. These feed pellets need to be durable and of high quality to withstand the handling and transportation process from feed mill to feed trough.

To determine breakage and durability of corn-meal-type feed pellets, the pellets were repeatedly transferred between two storage bins in the USDA-ARS Grain Marketing and Production Research Center research elevator at Manhattan, Kansas. The feed pellets withstood eight repeated elevator handlestings without a significant change in durability as measured by the standard tumbling box test.

In general, the handling characteristics were similar to shelled corn, but these feed pellets generated less dust emissions compared with shelled corn. These results will help feed handlers evaluate and improve their handling and transportation procedures.

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