

# PROGRAM RESOURCE BOOK

## AACC International Annual Meeting

September 30 – October 3, 2012

The Westin Diplomat  
Hollywood, Florida U.S.A.



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# Presenting...

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### Safety Tips

- Do not travel alone—stay in groups and travel in well-lit areas.
- Remove name badges when outside the hotel and Convention Center unless you are participating in an annual meeting event.
- Do not give your room number out to anyone you do not know, and avoid giving out your room number in conversations that strangers may overhear.
- Bolt your hotel room door and only open it when you know who is on the other side. (Note: Hotel personnel wear uniforms and have identification badges. If in doubt, call hotel security or the front desk to verify an employee's identity.)
- Do not leave your door ajar if you are going down the hall for ice. Someone may enter when you are not looking.
- Know where the stairs are located in case of a fire. Do not use elevators. Also, count the number of doors to the nearest exit in case you cannot see in a smoke-filled hallway.
- Valuables, airline tickets, and money should be kept in a hotel safety deposit box or in a room safe, if available.

### Procedures in Case of a Fire in the Hotel

- Leave the hotel as quickly as possible. If you cannot, stay in your room and call the operator or security to let them know you are in your room.
- Put your hand on the room door to see if it is hot before opening it. If it is, do not open it quickly. Open it just a crack to see what is on the other side, and be prepared to slam it quickly if necessary.
- If you leave your room, take your room key with you. Shut your room door to keep smoke out. You may have to return if the exit is blocked. Remember the way back to your room as you go to the exit in case you need to return.
- If necessary, drop to your knees to avoid smoke. Tie a wet towel around your nose and mouth to act as a smoke filter. Fold it into a triangle and put the corner in your mouth.
- Do not take the elevator when you smell smoke or if you know that there is a fire in the building.

# WELCOME to the

2012 AACC International Annual Meeting in Hollywood, Florida



Art Bettge

Welcome to the AACCI Annual Meeting! The program team has worked diligently to bring you a technical program that presents the most recent research and trends and also highlights the basic, fundamental science that has long been the center of our society. While many of the most pressing issues in cereal science today focus on biotechnology, nutrition, sustainability, and other areas, it is important to note that all of these aspects share fundamentals that should be of interest to everyone in our field.

I encourage everyone to reach out beyond their current job and focus to sample some of the other areas of cereal science that are skillfully presented here by the scientific leaders in our field. Similarly, I encourage everyone to strike up conversations, connections and collaborations with other scientists, whether as a result of a formal presentation or a casual hallway chat. Synergies can develop almost anywhere!

Also, take advantage of the Technical Committee meetings where some of the truly fundamental work of the AACCI is accomplished. The program guide contains a list of Technical Committee meetings and I hope that everyone can find one that sufficiently suits their particular area of interest to attend and participate.

The program team members have put a great amount of effort into organizing this program and I hope that you find your attendance rewarding, educational, and enjoyable.

Sincerely,

Art Bettge  
2012 Program Chair

**OUR NEW LOOK CONTINUES!** Based on the success of our new program guide and program resource book, we are continuing these new formats for 2012.

**The Program Guide**—a light and handy guide that includes the program schedule, general meeting information, highlights, exhibition, posters, and pages at the back for taking notes.

**The Program Resource Book**—provides session and poster content, recognition, exhibitor information, and author index.

We hope you find these new formats a convenient way to navigate the annual meeting. We look forward to your response to these changes as we strive to make the annual meeting the best it can be for those who attend.



## About AACC International

AACC International (AACCI) is a unique association dedicated to advancing cereal grain, connecting science to key issues in research and product development, and delivering relevant tools and resources to its members. Members belong to AACCI to stay up-to-date on the latest advancements in cereal grain science and to connect with colleagues worldwide.

## Tweet and Post Your AACCI Annual Meeting Experience!

Let others know what is happening during the AACCI Annual Meeting. Tweet, using the hashtag #aacc12, about the latest trends and research or post your insights at the AACCI LinkedIn group or Facebook group, where you can also create discussions, share photos, make comments, and post videos.

## Connect Now to the Meeting!



Get the app...it's free! Available for iOS (iPhone and iPad) and Android devices; Blackberry users have access

to a mobile website that will offer the same functionality.

Search the app store for AACC 2012; Blackberry users go to mobileapp.aaccnet.org.

## Your Science. Your Association.

### AACC International's 7 Key Scientific Initiatives

To increase the quality of research and satisfy the diverse needs of our members, the AACC International Annual Meeting focuses on 7 Key Scientific Initiatives. These initiatives will guide the program and provide members with relevant information, strong scientific content, and significant opportunities for disseminating research findings.

#### Biotechnology & Sustainability

conventional breeding • genetic modification • interaction effects of environment on gene expression • global climate change • reducing energy consumption • social/political/financial impacts

#### Chemistry & Interactions

fundamental whole cereal, starch, and protein chemistry • related polymer science approaches • chemical interactions of component parts

#### Engineering & Processing

physical processing of grains, pulses, and food products • fuels, industrial chemicals, and other in-process materials • more efficient engineering processes and equipment

#### Food Safety & Regulatory

microbes • contaminants • hazards • regulatory issues • legal challenges

#### Health & Nutrition

health and nutrition of cereals and pulses • social impact of health and nutrition initiatives • medical reports

#### Ingredients & Innovations

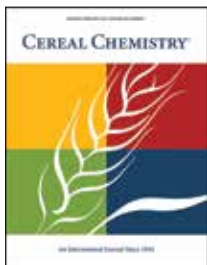
raw materials • new discoveries of novel ingredients • applications of ingredients • reduce ingredient costs

#### Quality & Analytical Methods

analytical methods development and changes • measuring quality of grain, ingredients, or finished foods • rheology

Learn more about these initiatives and how AACCI is focusing on you—visit [www.aaccnet.org](http://www.aaccnet.org).

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"Excellent new site...," "AACNet is awesome!," "Great organization and navigation," "Easy to use and full of information...," "The modern design and new tools are great."

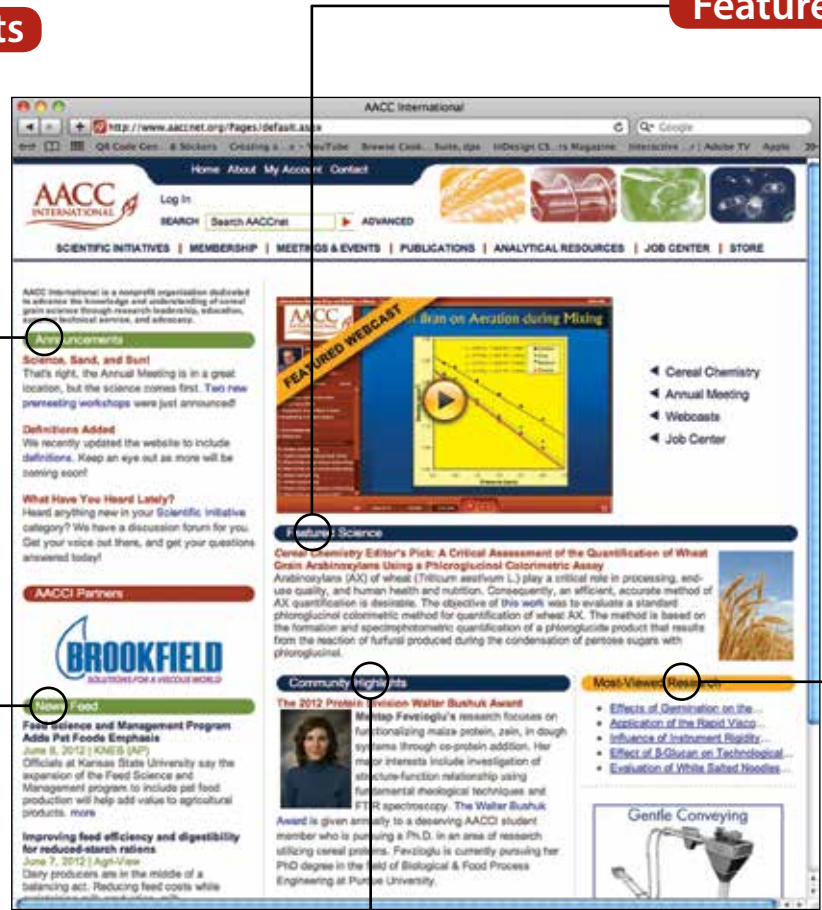
## Announcements

## Featured Science

## News Feed

## Community Highlights

## Most Viewed Research



[www.aaccnet.org](http://www.aaccnet.org)



AACCI is innovating to bring you more science, tools, and resources. The new AACCI website is one of several innovations for 2012.





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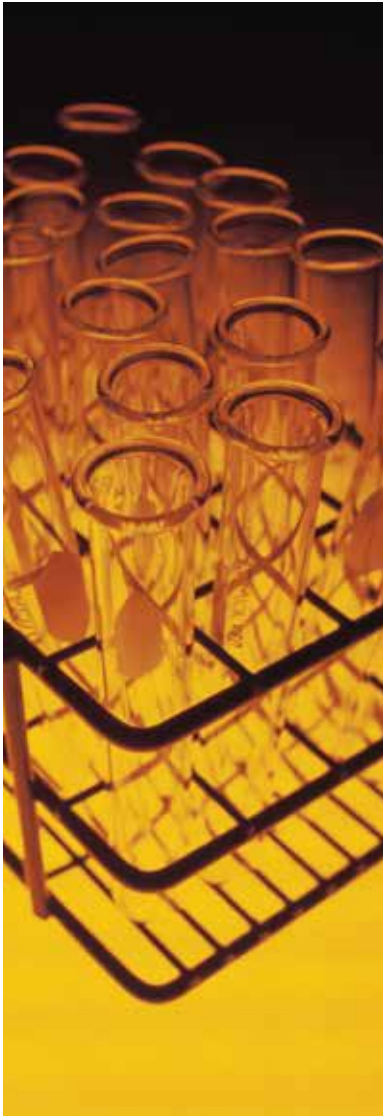
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## Your Science. Your Program.

### The Top Science from the Top Scientists

The science-packed AACCI Annual Meeting gives you more top-notch scientific content to choose from and more time scheduled each day to attend the sessions. The 2012 scientific program continues to focus on AACCI's 7 Key Scientific Initiatives. **Symposia** and **Technical Sessions** give updates on the hottest topics, and more than **200 posters** present leading-edge research and the latest trends. **Science Cafés** and **PosterTalks** offer you the chance to participate, discuss, and even debate.

### Symposia and Science Cafés

**Symposia** and **Science Cafés** focus on multidisciplinary, cross-scientific initiative topics. They have been crafted around themes identified by the AACCI International community and expanded by the program team and session organizers.

- **Symposia** are aimed at optimal knowledge transfer through regular 20-minute talks with time for topical questions.
- **Science Cafés** consist of sessions set up to combine shorter or more elaborate position talks with debate and discussion.

### Technical Sessions and PosterTalks

**Technical Sessions** and **PosterTalks** focus on more in-depth coverage of central themes within single scientific initiatives. They are put together, after peer-review and selection, from abstracts submitted through the online abstract submission system.

- **Technical Sessions** each feature 20-minute talks covering new scientific insights and technological advancements in the field.
- **PosterTalks** consist of short talks, highlighting the main findings and take-home messages found on selected posters, followed by in-room poster viewing and discussion.

The **Symposia** and **Technical Sessions** are “swappable” sessions, allowing people to easily commute from one session to another. The **Science Cafés** and **PosterTalks** are “here to stay” sessions, where participation during a whole session is a guarantee for insightful and rewarding debate.



## 2012 Schedule-at-a-Glance

All meetings take place at the Westin Diplomat Hotel.

Sunday	
12:00 – 4:00 p.m.	<b>Premeeting Workshop:</b> Rice Quality Issues: Chalk and Fissure Standardization and Measurement • Diplomat Ballroom 1
1:00 – 3:00 p.m.	<b>Premeeting Workshop:</b> Recent Developments on Gluten Detection in Foods and Beverages • Diplomat Ballroom 2
4:00 – 5:30 p.m.	<b>Opening General Session and Awards Ceremony</b> (4:00 p.m. Reception, 4:30 p.m. General Session) • Grand Ballroom West
5:30 – 7:30 p.m.	<b>Grand Opening Exhibition</b> • Great Hall
Monday	
7:00 – 8:30 a.m.	<b>Approved Methods Technical Committee Meetings</b> • See page 7 in the Program Guide for listing.
8:30 – 10:10 a.m.	<b>Technical:</b> Component Contributions to Texture and Rheology • <i>Quality &amp; Analytical Methods</i> • Atlantic Ballroom 1
	<b>Symposium:</b> Gluten Free: Opportunities and Challenges Across the Supply Chain • <i>Food Safety &amp; Regulatory, Health &amp; Nutrition</i> • Atlantic Ballroom 3
8:30 – 10:50 a.m.	<b>Special Session:</b> Peter Wood Memorial • <i>Chemistry &amp; Interactions, Health &amp; Nutrition, Ingredients &amp; Innovations</i> • Regency Ballroom 3
9:00 a.m. – 12:10 p.m.	<b>Supplier Innovation Session I</b> • 217
10:00 a.m. – 1:00 p.m.	<b>Student Product Development Competition Presentations</b> • Diplomat Ballroom 1 & 2
10:40 a.m. – 12:20 p.m.	<b>Symposium:</b> Formulating Grain-Based Food for Glucose Control • <i>Health &amp; Nutrition</i> • Atlantic Ballroom 1
	<b>Technical:</b> Influence of Ingredient Modification on Processing Characteristics • <i>Ingredients &amp; Innovations</i> • Atlantic Ballroom 3
12:20 – 2:00 p.m.	<b>Poster Viewing</b> and Lunch on your own • Division Luncheons
2:00 – 3:20 p.m.	<b>Supplier Innovation Session II</b> • 217
2:00 – 4:00 p.m.	<b>PosterTalk:</b> Assessing Grain Quality • Regency Ballroom 3
	<b>Science Café:</b> Exploring the Differences Between Conventional and Modern Biotechnology—A Focus on Grains • <i>Biotechnology &amp; Sustainability, Quality &amp; Analytical Methods</i> • Atlantic Ballroom 1
4:00 – 7:00 p.m.	<b>Beer and Poster Viewing</b> (all student poster authors only, present 4:00 – 5:00 p.m.; even numbered poster authors present 5:00 – 6:00 p.m.) • Great Hall
Open Evening	Division and Section Socials and Dinners
Tuesday	
7:00 – 8:30 a.m.	<b>Approved Methods Technical Committee Meetings</b> • See page 7 in the Program Guide for listing.
8:30 – 10:10 a.m.	<b>Best Student Research Paper Competition</b> (ends at 11:00 a.m.) • <i>All Initiatives</i> • Regency Ballroom 3
	<b>Symposium:</b> Chemistry and Nutrition of Pulses and Minor Cereals • <i>Health &amp; Nutrition</i> • Atlantic Ballroom 1
9:00 – 11:00 a.m.	<b>Supplier Innovation Session III</b> • 217
10:40 a.m. – 12:20 p.m.	<b>Symposium:</b> Addressing Texture Challenges in Baked Products • <i>Ingredients &amp; Innovations</i> • Atlantic Ballroom 1
	<b>Symposium:</b> Food Allergy Thresholds and Risk Assessment: Potential Stakeholder Benefits • <i>Food Safety &amp; Regulatory</i> • Atlantic Ballroom 3
12:00 – 2:15 p.m.	<b>Light Lunch with the Exhibitors</b> • Great Hall <b>Poster Viewing</b> (odd numbered poster authors present 1:00 – 2:00 p.m.)
2:30 – 4:30 p.m.	<b>Science Café:</b> Current Status of Development Trends of Asian Products • <i>Biotechnology &amp; Sustainability, Chemistry &amp; Interactions, Health &amp; Nutrition, Quality &amp; Analytical Methods</i> • Atlantic Ballroom 1
	<b>PosterTalk:</b> Grain Analysis and Processing • Regency Ballroom 1
2:30 – 6:00 p.m.	<b>Hot Topic:</b> Food Safety Modernization Act (FSMA) – An Update • Atlantic Ballroom 2
Open Evening	Division Socials and Dinner • Foundation Event
Wednesday	
7:00 – 8:30 a.m.	<b>Approved Methods Technical Committee Meetings</b> • See page 7 in the Program Guide for listing.
8:30 – 10:10 a.m.	<b>Symposium:</b> Enzymes in Cereal Science: From Improving Dough & Product Quality to Improving Bioavailability of Functional Compounds • <i>Biotechnology &amp; Sustainability, Chemistry &amp; Interactions, Health &amp; Nutrition</i> • Atlantic Ballroom 1
	<b>Technical:</b> Ingredient Modifications and Interactions • <i>Ingredients &amp; Innovations</i> • Atlantic Ballroom 3
10:40 a.m. – 12:20 p.m.	<b>Technical:</b> Impact of Ingredients on Bread Structure and Quality • <i>Chemistry &amp; Interactions</i> • Atlantic Ballroom 1
	<b>Symposium:</b> Lipids in Baking: Minor Components with Major Impact • <i>Cereal &amp; Chemistry Interactions, Engineering &amp; Processing, Ingredients &amp; Innovations, Quality &amp; Analytical Methods</i> • Atlantic Ballroom 3
12:30 – 2:00 p.m.	Lunch on your own • ICC Luncheon • Division Luncheons
2:00 – 4:00 p.m.	<b>Science Café:</b> Is It Sweet Enough? A Dialogue on Sugar Reduction • <i>Chemistry &amp; Interactions, Health &amp; Nutrition, Ingredients &amp; Innovations</i> • Atlantic Ballroom 1
	<b>Science Café:</b> Statistical Tools Supporting Food Safety, Regulatory, and Processing • <i>Engineering &amp; Processing, Food Safety &amp; Regulatory, Quality &amp; Analytical Methods</i> • Regency Ballroom 1
4:15 – 6:00 p.m.	<b>Closing Session with Keynote Speaker Alan Bjerga, followed by Farewell Reception</b> • Diplomat Ballroom 1–3



<b>Symposium:</b> Healthy Food Manufacturing: Process Challenges & Solutions for Salt Reduction, Fat Reduction, and Fiber Enhancement • <i>Engineering &amp; Processing, Health &amp; Nutrition</i> • Regency Ballroom 1	<b>Technical:</b> Rice • <i>Quality &amp; Analytical Methods</i> • Atlantic Ballroom 2
<b>Technical:</b> Rheological Assessment of Products • <i>Engineering &amp; Processing</i> • Regency Ballroom 1	<b>Technical:</b> Structure-Function Relationships: Starch • <i>Chemistry &amp; Interactions</i> • Atlantic Ballroom 2
<b>Science Café:</b> Leveraging Innovation, Cost Management, and Sustainability for Profitability • <i>Ingredients &amp; Innovations</i> • Atlantic Ballroom 3	<b>Hot Topic:</b> Impact of Drought on Grain • Regency Ballroom 1
<b>Technical:</b> Modeling Quality • <i>Quality &amp; Analytical Methods</i> • Atlantic Ballroom 3	<b>Symposium:</b> Protein & Starch Changes Occurring During Various Cold-Forming and Dehydration Processing of Pasta, Noodle, & Pretzel Products • <i>Chemistry &amp; Interactions, Engineering &amp; Processing</i> • Regency Ballroom 1
<b>Technical:</b> Micro- and Macro-Nutrient Digestion and Health • <i>Health &amp; Nutrition</i> • Regency Ballroom 1 (ends at 12:40 p.m.)	<b>Technical:</b> Recent Advances in Wheat Genetics • <i>Biotechnology &amp; Sustainability</i> • Atlantic Ballroom 2
<b>Science Café:</b> Protein Quality in Product Development: Regulatory Considerations • <i>Health &amp; Nutrition</i> • Atlantic Ballroom 3	<b>PosterTalk:</b> Update on In Vivo and In Vitro Studies on Health • Regency Ballroom 3
<b>Technical:</b> Structure-Function Relationships: Protein • <i>Chemistry &amp; Interactions</i> • Regency Ballroom 1	<b>Symposium:</b> Whole Grains: Where Are We and Where Are We Going? • <i>Biotechnology &amp; Sustainability, Engineering &amp; Processing, Food Safety &amp; Regulatory, Health &amp; Nutrition</i> • Regency Ballroom 3
<b>Technical:</b> Novel Grain Products • <i>Engineering &amp; Processing</i> • Regency Ballroom 1	<b>Symposium:</b> Starch Modification • <i>Chemistry &amp; Interactions</i> • Regency Ballroom 3
<b>Special Session:</b> The New Generation of Professionals: Opportunities and Challenges in Transitioning from School to Work • <i>Ingredients &amp; Innovations</i> • Atlantic Ballroom 3	

## Gentle Conveying



## Smart Conveying



## Quiet Conveying



## Clean Conveying



Cereal Loops



Cereal Flakes



Cinnamon Toast Cereal



Cereal Combo



Cereal Twigs

- ✓ Dust-Free Enclosed System – No Filters!
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## 2012 AACCI Awardee Presentations

### Rheology Division George W. Scott Blair Award for Outstanding Research in Rheology and Texture

Monday, October 1

10:40 a.m. • Regency Ballroom 1

“What has low intensity ultrasound informed us about wheat flour dough rheology?” presented by Martin G. Scanlon, Department of Food Science, University of Manitoba, Winnipeg, MB, Canada

### Edith Christensen Award for Outstanding Contributions in Analytical Methods Presentation

Tuesday, October 2

8:30 a.m. • Atlantic Ballroom 3

“Statistics and the cereal chemist,” presented by Terry Nelsen, Consultant, Port Byron, IL, U.S.A.

### Young Scientist Research Award Presentation

Wednesday, October 3

8:30 a.m. • Atlantic Ballroom 3

“Hybrid proteins with enhanced functional properties,” presented by Girish Ganjyal, PepsiCo, Plano, TX, U.S.A.

### Protein Division Walter Bushuk Graduate Research Award in Cereal Protein Chemistry Presentation

Wednesday, October 3

8:30 a.m. • Regency Ballroom 1

“Manipulation of zein structure with co-protein addition for application in dough systems: A new approach to functionalize non-gluten cereal proteins,” presented by Mehtap Fevzioglu, Purdue University, West Lafayette, IN, U.S.A.

## Premeeting Workshops

All sessions/meetings take place at the Westin Diplomat Resort Hotel.

### Rice Quality Issues: Chalk and Fissure Standardization and Measurement

Sunday, September 30

12:00 – 4:00 p.m. • Diplomat Ballroom 1

**Organizers:** Grace H. Lai, Kellogg Company, Battle Creek, MI, U.S.A.; Melissa Fitzgerald, IRRI Philippines and School of Agriculture and Food Science, University of Queensland, Australia; Delilah F. Wood, USDA ARS WRRRC, Albany, CA, U.S.A.

**Financial Sponsor:** Kellogg Company

The workshop will focus on quality assessment, limitations, and solutions surrounding the issues of chalk and fissuring in rice. Ways forward will be discussed for how we can improve our ability to measure quality, improve breeding, farming, and milling practices in terms of chalk and fissures.

Importance of rice quality—An industry perspective. G. H. LAI

(1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

Chalky rice—Formation and measurement. M. FITZGERALD

(1). (1) IRRI Philippines and School of Agriculture and Food Science, University of Queensland, Australia

Effect of harvest/drying/storage/milling conditions on fissure formation. T. SIEBENMORGEN (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

Rice quality standardization and measurement. S. A. METHENY

(1). (1) USDA FGIS Field Office, Stuttgart, AR, U.S.A.

Quality at the micro level. D. F. WOOD (1). (1) USDA ARS WRRRC, Albany, CA, U.S.A.

Genes affecting grain fissure resistance mapped through association with molecular markers. S. PINSON (1). (1) USDA ARS Dale Bumpers National Rice Research Center, Stuttgart, AR, U.S.A.

Instrumentation for measuring quality control in rice milling. M. HOST (1). (1) FOSS North America, Eden Prairie, MN, U.S.A.

Industrial issues of rice. *Presenter to be announced.*

Roundtable discussion of methods and standards: 1) degree of chalkiness, 2) stress cracks, 3) degree of milling, and 4) other defects (broken rice, foreign material, etc.).

### Recent Developments on Gluten Detection in Foods and Beverages

Sunday, September 30

1:00 – 3:00 p.m. • Diplomat Ballroom 2

**Organizers:** Clyde Don, Foodphysica, Driel, Netherlands; Michael Tilley, USDA-ARS CGAHR, Manhattan, KS, U.S.A.

**Financial Sponsors:** R-Biopharm AG, Romer Labs Division Holdings GmbH

Consumers, food regulators, and food product developers in many types of food have different criteria for the selection of gluten detection methods. The challenge for method developers is to meet these different needs. In all cases, an accurate and reproducible result that detects international gluten labeling thresholds is essential. This workshop will cover the pros and cons in using ELISA methods and introduce new research in alternate detection methods. It will include a discussion of the recently completed AACC International collaborative trials.

AACCI approved methods meet membership needs. A.

BRIDGES (1). (1) AMTC Chair, AACC International, St. Paul, MN, U.S.A.

An introduction to protein detection by ELISA. M. TILLEY (1). (1) USDA-ARS CGAHR, Manhattan KS, U.S.A.

Current status of non-ELISA methods for gluten quantitation. P. KOEHLER (1). (1) German Research Center for Food Chemistry, Freising, Germany

Recent results of collab and pre-collab studies using ELISA kits. C. DON (1). (1) Foodphysica, Driel, Netherlands

Testing for gluten according to the Codex level.

S. HAAS-LAUTERBACH (1). (1) R-Biopharm AG, Darmstadt, Germany

## Program Sessions

All sessions/meetings take place at the Westin Diplomat Hotel.

### ► MONDAY, OCTOBER 1

#### Sessions – Monday Morning (8:30 – 10:10 a.m.)

(listed in alphabetical order by title)

**Session number (1-S)** and **technical number (1-O)** refer to the Author Index in the program book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

#### Component Contributions to Texture and Rheology •

**Technical •** Atlantic Ballroom 1

*Scientific Initiative: Quality & Analytical Methods*

Moderators: Kouassi Kouakou, Campbell Soup, Camden, NJ, U.S.A.; George A. Annor, University of Guelph, Guelph, ON, Canada

- 8:30 a.m. **1-O, CFW 57:A30.** Creep test on wheat kernels: Influence of glutenins and their relationship to sedimentation volume and rheological properties. H. J. ZORBA (1), J. FIGUEROA CÁRDENAS (1), R. PATRICIA (2), R. J. PEÑA (3). (1) Centro de Investigación y de Estudios Avanzados del IPN, Unidad Querétaro, Querétaro, Mexico; (2) Robert M. Kerr Food & Agricultural Products Research & Technology Center, Oklahoma State University, Stillwater, OK, U.S.A.; (3) International Maize and Wheat Improvement Center (CIMMYT), Texcoco, Mexico
- 8:50 a.m. **2-O, CFW 57:A25.** Production and characterization of arabinoxyl- and xylo-oligosaccharides from xylanase and acid hydrolysis of wheat arabinoxylan. B. MCCLEARY (1), A. DRAGA (1), E. ROONEY (1). (1) Megazyme International Ireland, County Wicklow, Ireland
- 9:10 a.m. **3-O, CFW 57:A29.** Effect of drying temperature on the pasting, physicochemical, and qualitative properties of starch in whole wheat pasta. R. WEST (1), L. DUIZER (1), K. SEETHARAMAN (1). (1) University of Guelph, Guelph, ON, Canada
- 9:30 a.m. **4-O, CFW 57:A27.** Adaptation of the Bostwick-based oxidative gelation method to the Rapid Visco Analyzer. A. S. ROSS (1), A. D. BETTGE (2), J. E. MATTSON (1). (1) Oregon State University, Corvallis, OR, U.S.A.; (2) ADB Wheat Consulting, Moscow, ID, U.S.A.
- 9:50 a.m. **5-O, CFW 57:A28.** Is glutenin protein quality for breadmaking a function of wheat protein content? Evidence from a G x E study. H. SAPIRSTEIN (1), H. NAEEM (1). (1) University of Manitoba, Department of Food Science, Winnipeg, MB, Canada

#### Gluten Free: Opportunities and Challenges Across the Supply Chain • Symposium • Atlantic Ballroom 3

*Scientific Initiatives: Food Safety & Regulatory, Health & Nutrition*

Organizers: Rajen Mehta, SunOpta Ingredients Group, Chelmsford, MA, U.S.A.; Satya Jonnalagadda, General Mills Inc., Golden Valley, MN, U.S.A.; Andreia Bianchini, The Food Processing Center, University of Nebraska, Lincoln, NE, U.S.A.

Moderators: Rajen Mehta, SunOpta Ingredients Group, Chelmsford, MA, U.S.A.; Satya Jonnalagadda, General Mills Inc., Golden Valley, MN, U.S.A.

Sponsors: Nutrition Division, Food Safety and Microbiology Technical Committee

Financial Sponsors: Cargill, Inc., Matsutani America/ADM, J. Rettenmaier, General Mills, SunOpta Ingredients Group, Kellogg Company

This symposium will discuss the new developments in proposed regulation for gluten-free products in the United States and how it could impact the grain industry. Opportunities and challenges for product development, as well as how to create a manufacturing environment that is gluten free, will also be discussed, along with methodology that could be used to comply with labeling requirements.

- 8:30 a.m. **1-S, CFW 57:A8.** Implementation of gluten-free regulations in the food industry. S. JONNALAGADDA (1), B. JACOB (1). (1) General Mills Inc., Golden Valley, MN, U.S.A.
- 8:50 a.m. **2-S, CFW 57:A8.** Gluten-free: Product development opportunities and challenges. R. MEHTA (1). (1) SunOpta Ingredients Group, Chelmsford, MA, U.S.A.
- 9:10 a.m. **3-S, CFW 57:A8.** Product development challenges and potential solutions for high quality gluten-free products. Y. L. DAR (1), D. UZUNLIOGLU (1), P. O'BRIEN (1). (1) Ingredient, Inc., Bridgewater, NJ, U.S.A.
- 9:30 a.m. **4-S, CFW 57:A8.** Detection methods for ensuring labeling compliance of gluten-free products. J. L. BAUMERT (1). (1) Food Allergy Research & Resource Program, University of Nebraska, Lincoln, NE, U.S.A.
- 9:50 a.m. **5-S, CFW 57:A9.** Developing effective gluten-free validation programs. S. HEGENBART (1). (1) ConAgra Foods Inc., Omaha, NE, U.S.A.



## Healthy Food Manufacturing: Process Challenges & Solutions for Salt Reduction, Fat Reduction, and Fiber Enhancement • Symposium • Regency Ballroom 1

*Scientific Initiatives: Engineering & Processing, Health & Nutrition*

Organizers: John Mathew, Frito-Lay, Inc., Plano, TX, U.S.A.;  
Clyde Don, Foodphysica, Driel, Netherlands  
Moderators: John Mathew, Frito-Lay, Inc., Plano, TX, U.S.A.;  
Len Marquart, University of Minnesota, St. Paul, MN, U.S.A.  
Sponsor: Engineering & Processing Division

Part 1 of this symposium was offered during the 2011 Annual Meeting and was very well attended. Based on the feedback from the attendees, the same topic with the latest advancements will be presented during this symposium. This symposium will address process challenges and potential solutions in the development/reformulation of snack foods through salt and fat reduction and enhanced dietary fiber. Approaches will emphasize gradual ingredient modifications, taste appeal, and increased consumer availability of snacks that more closely meet dietary guidance. The inclusion of dietary fiber and modification in ingredient contents (e.g., fat, sodium) can ultimately lead to lower caloric-dense products, but with the taste appeal necessary for consumers to easily adopt.

- 8:30 a.m. **6-S, CFW 57:A9.** Strategies for developing healthier bakery products. F. K. GATES (1), C. Speirs (1), G. Tucker (1). (1) Campden BRI, Chipping Campden, United Kingdom
- 8:50 a.m. **7-S, CFW 57:A9.** Reducing oil uptake in extruded snacks—Mechanisms for fat absorption and distribution in a cellular matrix. S. ALAVI (1), A. Garg (1), H. Gajula (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 9:10 a.m. **8-S, CFW 57:A9.** Strategies in reducing fat using starch. P. BUWALDA (1). (1) AVEBE/Wageningen University, Veendam, Netherlands
- 9:30 a.m. **9-S, CFW 57:A9.** Impact of food ingredients and processing on salt flavor perception. S. E. HILL (1), B. Wolf (1), I. D. Fisk (1), J. Hort (1). (1) Division of Food Sciences, University of Nottingham, Leicestershire, United Kingdom
- 9:50 a.m. **10-S, CFW 57:A9.** The influence of healthy ingredients on food texture of snack products. L. OUDHUIS (1), R. Nagtegaal (1), K. Vallons (1), J. van Maanen (1), T. Maarschalkwerd (1), M. Essers (1). (1) TNO Food & Nutrition, Zeist, Netherlands

## Peter Wood Memorial • Special Session • Regency Ballroom 3 *Extended (8:30 – 10:50 a.m.)*

*Scientific Initiatives: Chemistry & Interactions, Health & Nutrition, Ingredients & Innovations*

Organizers/Moderators: Bill Atwell, Bill Atwell Consulting LLC, Champlin, MN, U.S.A.; Shea Miller, Agriculture & Agri-Food Canada, Ottawa, ON, Canada; Kris Spence, Kellogg Company, Battle Creek, MI, U.S.A.

Sponsors: Carbohydrate Division, Nutrition Division

This special session will cover current topics in dietary fiber with special emphasis on the current research involving beta glucans. A portion of the program will be a tribute to Peter Wood's unique personality and many accomplishments.

- 8:30 a.m. **11-S, CFW 57:A13.** The life, times, and science of Peter Wood. W. A. ATWELL (1). (1) Bill Atwell Consulting LLC, Champlin, MN, U.S.A.
- 8:50 a.m. **12-S, CFW 57:A14.** Mechanisms of action of dietary fiber in the gastrointestinal tract: A physico-chemical perspective. P. R. ELLIS (1). (1) King's College London, London, United Kingdom
- 9:10 a.m. **13-S, CFW 57:A13.** An overview of beta glucans. S. M. TOSH (1). (1) Agriculture and Agri-Food Canada, Guelph, ON, Canada
- 9:30 a.m. **14-S, CFW 57:A13.** Current research on arabinoxylans. C. COURTIN (1). (1) KU Leuven, Leuven, Belgium
- 9:50 a.m. **15-S, CFW 57:A13.** Cell wall polysaccharides. R. FULCHER (1). (1) University of Manitoba, Winnipeg, MB, Canada
- 10:10 a.m. **16-S, CFW 57:A13.** Measurement of soluble dietary fibres. B. V. MCCLEARY (1). (1) Megazyme International Ireland, Bray, County Wicklow, Ireland
- 10:30 a.m. **17-S, CFW 57:A14.** Soluble fibers and health. J. M. JONES (1). (1) St. Catherine University, Arden Hills, MN, U.S.A.

## Rice • Technical • Atlantic Ballroom 2

*Scientific Initiative: Quality & Analytical Methods*

Moderators: Gloria Cagampang, 3A Consulting LLC, Newberry, FL, U.S.A.; Joseph Kwesi Gayin, University of Guelph, Guelph, ON, Canada

- 8:30 a.m. **6-O, CFW 57:A30.** Association mapping of starch quality with starch biosynthesizing genes in waxy rice (*Oryza sativa* L.). G. Zhang (1), F. Xu (1), J. BAO (1). (1) Zhejiang University, Hangzhou, People's Republic of China
- 8:50 a.m. **7-O, CFW 57:A30.** Starch structural effects on digestibility of cooked rice. S. Zainul Abidin (1), S. Sar (1), I. D. Godwin (1), E. Li (1), J. Hasjim (1), R. G. GILBERT (1). (1) University of Queensland, Brisbane, QLD, Australia
- 9:10 a.m. **8-O, CFW 57:A25.** Effect of pre-germination process on the qualities of rice bread. W. KUPKANCHANAKUL (1), O. Naivikul (1). (1) Department of Food Science & Technology, Faculty of Agro-Industry, Kasetsart University, Chatuchak, Bangkok, Thailand
- 9:30 a.m. **9-O, CFW 57:A27.** Brown rice can be a "good source" of dietary fiber. W. PARK (1), G. Walker (1), R. Pratt (1), L. Bui (2). (1) Texas A&M University, College Station, TX, U.S.A.; (2) Mars Food, Vernon, CA, U.S.A.
- 9:50 p.m. **10-O, CFW 57:A23. WITHDRAWN**

**Supplier Innovation Session I**

9:00 a.m. – 12:10 p.m. • Room 217

**9:00 – 9:40 a.m.**

Company: Calibre Control International Ltd.  
 Name of Product: C-Cell Analyser  
 Contact/Presenter Name: Paul Cliffe  
 Presentation Category: Instruments/Equipment/Services

**9:40 – 10:20 a.m.**

Company: Firmenich  
 Name of Product: Flavors  
 Contact Name: Nicole Derrick  
 Presenter Name: Mikel Cirkus  
 Presentation Category: Ingredients

Find “ah-ha moments” to create products your consumers don’t even know they need...yet.

**10:20 – 11:00 a.m.**

Company: Best Cooking Pulses, Inc.  
 Name of Product: BEST Pulse (pea, chickpea, lentils, and beans) Flours  
 Contact/Presenter Name: Margaret Hughes  
 Presentation Category: Ingredients

Clever inclusion of BEST Pulse Flours into your formulations can supercharge nutritional properties without compromising taste. Here’s the how to.

**11:00 – 11:40 a.m.**

Company: Nexira  
 Name of Product: Equacia  
 Contact/Presenter Name: Jordan Richichi  
 Presenter Name: Ester Cejudo  
 Presentation Category: Ingredients

Equacia™ is designed to mimic fat mouthfeel. Enhances taste and texture while improving nutrition by reducing fat up to 50%.

**11:40 a.m. – 12:10 p.m.**

Company: Chopin Technologies  
 Name of Product: Mixolab newest applications  
 Contact/Presenter Name: Charles Loubersac D’hotel  
 Presentation Category: Instruments/Equipment/Services

Chopin Technologies has enhanced its portfolio of grain and cereal based tests on the Mixolab. We shall share this information.

**Student Product Development Competition**

10:00 a.m. – 1:00 p.m. • Diplomat Ballroom 1 &amp; 2

Organizer/Moderator: Tom Jondiko, Texas A & M University, Student Division PDC Chair  
 Sponsor: AACCI Student Division  
 Financial Sponsors: Bay State Milling Co., Caravan Ingredients, Cargill Inc., David Michael & Co., Kellogg Co., Starquest F.O.O.D. Consulting LLC, TIC Gums Inc.

Get a glimpse of the future of the grain science industry as these young scientists show off their product development skills! This exciting competition challenges students to develop a new product containing at least one cereal product as the main ingredient. All meeting attendees are invited to view the oral and poster presentations. Come cheer on your alma mater!

- 10:00 a.m. Welcome.** Tom Jondiko, Texas A & M University, Student Division PDC Chair
- 10:10 a.m. Team: Iowa State University.** Justin Banach, Justin Kaiser, Charlwit Kulchaiyawat, Yee Lung Lai, Samuel Moore, Michael Reed, Eric Testroet  
Product: Adventure Bites
- 10:25 a.m. Team: Kansas State University.** Anubha Garg, Moses Khamis, Swathi Sree Kodavali, Oscar Ramos  
Product: Instant Sorghum Noodle
- 10:40 a.m. Team: University of Pretoria, South Africa.** Constance Chiremba  
Product: Sogyummie Cookies
- 10:55 a.m. Team: Texas A & M University.** Shima Agah, Kristen Dunn, Katie Michaelsen  
Product: Sunny Snaps
- 11:10 a.m. Team: The Ohio State University.** Teerarat Likittwattanasade, Rarinthorn Thammakulkrajang  
Product: UnBeetable Burger

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**AACCI Central, Exhibit Hall**

Sunday 5:30 – 7:30 p.m. | Monday 4:00 – 7:00 p.m. | Tuesday 12:00 – 2:15 p.m.



## Sessions – Monday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

**Session number (1-S)** and **technical number (1-O)** refer to the Author Index in the program resource book.

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### Formulating Grain-Based Food for Glucose Control •

**Symposium • Atlantic Ballroom 1**

*Scientific Initiative: Health & Nutrition*

Organizers: Susan Tosh, Agriculture & Agri-Food Canada, Guelph, ON, Canada; Satya Jonnalagadda, General Mills, Golden Valley, MN, U.S.A.; Anne Birkett, Kellogg Company, Battle Creek, MI, U.S.A.

Moderators: Satya Jonnalagadda, General Mills, Golden Valley, MN, U.S.A.; Anne Birkett, Kellogg Company, Battle Creek, MI, U.S.A.

Sponsor: Nutrition Division

Financial Sponsors: Cargill, Inc., Matsutani America/ADM, J. Rettenmaier, SunOpta Ingredients Group, Kellogg Company

It has long been established that postprandial blood glucose response is not just determined by the amount of available carbohydrate alone. The proportions of different nutrients, particularly protein, carbohydrates, and fat, as well as food microstructure and the physicochemical properties of the food, can affect the rate of glucose absorption and the glycemic response after a meal. This symposium will explore the effects of grain-based foods on blood glucose control, from both the physiological and the food science and technology perspectives.

- 10:40 a.m. **18-S, CFW 57:A7.** Glycemic control—Definition and physiological effects. T. M. WOLEVER (1). (1) University of Toronto, Toronto, ON, Canada
- 11:00 a.m. **19-S, CFW 57:A7.** Food processing effects on glycemic response. S. TOSH (1). (1) Agriculture and Agri-Food Canada, Guelph, ON, Canada
- 11:20 a.m. **20-S, CFW 57:A8.** Food formulation effects on glycemic response. M. D. HAUB (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 11:40 a.m. **21-S, CFW 57:A8.** Issues and considerations with glycemic labeling and its regulation. J. M. JONES (1). (1) St. Catherine University, Arden Hills, MN, U.S.A.
- 12:00 p.m. Discussion

### Influence of Ingredient Modification on Processing

**Characteristics • Technical • Atlantic Ballroom 3**

*Scientific Initiative: Ingredients & Innovations*

Moderators: Susan Kay, Bay State Milling Company, Quincy, MA, U.S.A.; Vicky Solah, Curtin University, Perth, WA, Australia

- 10:40 a.m. **11-O, CFW 57:A28.** Composition and properties of pinto bean flour subjected to air classification and extrusion. C. SIMONS (1), C. Hall (1), M. Tulbek (2). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) Alliance Grain Traders, Regina, SK, Canada

- 11:00 a.m. **12-O, CFW 57:A22.** *In vivo* chemopreventive effects of yeast-leavened breads enriched with seleniomethionine. V. A. Gutiérrez-Díaz (1), M. Lazo-Vélez (1), J. A. Gutierrez-Urbe (2), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico; (2) Instituto Tecnológico de Monterrey, Monterrey, Mexico
- 11:20 a.m. **13-O, CFW 57:A24.** Frozen bread dough properties modified by thermostable ice structuring proteins extract from Chinese privet (*Ligustrum vulgare*) leaves. C. JIA (1), W. Huang (1). (1) Jiangnan University, Wuxi, Jiangsu, People's Republic of China
- 11:40 a.m. **14-O, CFW 57:A27.** Effect and functionality of thermostable amylases in cakes and high sugar recipes including the impact of sucrose and fat on enzyme functionality. I. POVLSEN (1), M. Philipsen (1). (1) DuPont/Danisco, Brabrand, Denmark
- 12:00 p.m. **15-O, CFW 57:A30.** Quantified baking: Methods and bread improving ingredients. H. WIUM (1), N. Christensen (1). (1) DuPont Nutrition Biosciences ApS, Brabrand, Denmark

### Rheological Assessment of Products • Technical • Regency Ballroom 1

*Scientific Initiative: Engineering & Processing*

Moderators: Danusha Kalinga, University of Guelph, Guelph, ON, Canada; Steve Delwiche, USDA ARS, Food Quality Laboratory, Beltsville, MD, U.S.A.

- 10:40 a.m. **16-O, CFW 57:A28. Rheology Division George W. Scott Blair Award for Outstanding Research in Rheology and Texture** – What has low intensity ultrasound informed us about wheat flour dough rheology? M. G. SCANLON (1). (1) Department of Food Science, University of Manitoba, Winnipeg, MB, Canada
- 11:00 a.m. **17-O, CFW 57:A29.** Alveolar structure of bread dough and rheological properties of its constitutive phases. A. TURBIN-ORGER (1), L. Chaunier (1), H. Chiron (1), G. Della Valle (1). (1) INRA, Nantes, France
- 11:20 a.m. **18-O, CFW 57:A24.** Influence of process parameters on end-product characteristics of extruded starch-based “half products” during microwave induced expansion. S. T. KRAUS (1), H. P. Schuchmann (1), V. Gaukel (1). (1) Karlsruhe Institute of Technology, Karlsruhe, Germany
- 11:40 a.m. **19-O, CFW 57:A24.** Extrusion of wheat flour fractions to improve functionality and add value. M. KHAMIS (1), S. Kodavali (1), H. Dogan (1), S. Alavi (2). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Department of Grain Science & Industry, Kansas State University, Manhattan, KS, U.S.A.
- 12:00 p.m. **20-O, CFW 57:A26.** Practical implications of salt reduction for baked products. H. Metcalfe (1), M. POOLE (1). (1) Campden BRI, Chipping Campden, United Kingdom; (2) Campden BRI, Gloucestershire, United Kingdom

**Structure–Function Relationships: Starch • Technical •**

Atlantic Ballroom 2

*Scientific Initiative: Chemistry & Interactions*

Moderators: Jung Sun Hong, University of Idaho, Moscow, ID, U.S.A.; Alecia Kiszonas, USDA ARS, Washington State University, Pullman WA, U.S.A.

- 10:40 a.m. **21-O, CFW 57:A19.** B-crystalline starch granules with distinct architectures. E. BERTOFT (1), V. Varatharajan (1), J. Wikman (2), A. Blennow (3), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Abo Akademi University, Turku, Finland; (3) University of Copenhagen, Frederiksberg, Denmark
- 11:00 a.m. **22-O, CFW 57:A28.** Physicochemical and morphological characterization of different starches with variable amylose/amylopectin content. M. SCHIRMER (1), M. Jekle (1), T. Becker (1). (1) Technische Universität München, Freising, Germany
- 11:20 a.m. **23-O, CFW 57:A22.** Structure of waxy maize starch hydrolyzed by maltogenic amylase in relation to its retrogradation. N. GREWAL (1), Y. Shi (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 11:40 a.m. **24-O, CFW 57:A29.** Phase transitions of pea starch over a wide range of water content. S. Wang (1), L. COPELAND (1). (1) University of Sydney, Sydney, NSW, Australia
- 12:00 p.m. **25-O, CFW 57:A29.** Effect of alkaline treatment on functionality of pea starch granules. S. Wang (1), L. COPELAND (1). (1) University of Sydney, Sydney, NSW, Australia

**Sessions – Monday Afternoon (2:00 – 4:00 p.m.)***(listed in alphabetical order by title)*

**Session number (1-S)** and **poster number (1-P)** refer to the Author Index in the program resource book.

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**Assessing Grain Quality • PosterTalk • Regency Ballroom 3**

Moderators : Karolien Decamps, KU Leuven, Leuven, Belgium; Michael Tilley, USDA ARS CGAHR, Manhattan, KS, U.S.A.

**246-P, CFW 57:A53.**

Soft wheat grain quality in United States germplasm. A. M. KISZONAS (1), P. Fuerst (2), C. F. Morris (3). (1) USDA-ARS/ Washington State University, Pullman, WA, U.S.A.; (2) Washington State University, Pullman, WA, U.S.A.; (3) USDA-ARS Western Wheat Quality Laboratory, Pullman, WA, U.S.A.

**247-P, CFW 57:A76.**

Advances in quality property improvement and study of winter wheat in China. Y. WEI (1), B. Zhang (1), E. Guan (1), G. Zhang (2), Y. Zhang (1). (1) Institute of Agro-Food Science & Technology, CAAS, Beijing, People's Republic of China; (2) College of Agronomy, Northwest A&F University, Shaanxi, People's Republic of China

**244-P, CFW 57:A42.**

Improving the nitrogen response of UK wheat varieties. G. A. CHOPE (1), S. P. Penson (1), Y. Wan (2), M. J. Hawkesford (2), P. R. Shewry (2). (1) Campden BRI, Chipping Campden, United Kingdom; (2) Rothamsted Research, Harpenden, United Kingdom

**109-P, CFW 57:A43.**

Comparison of phenolics in refined and whole-grain flours of white, light, medium, and dark red soft wheat varieties. S. DHILLON (1), L. Duizer (1). (1) University of Guelph, Guelph, ON, Canada

**245-P, CFW 57:A78.**

Polysaccharide composition of triticale produced in the Great Plains of the USA. J. YANG (1), P. Baenziger (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

**242-P, CFW 57:A36.**

Sulphur application alters gluten functional characteristics and protein structure in Ontario soft wheats. J. E. BOCK (1), S. Jazaeri (1), P. Johnson (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) OMAFRA, Stratford, ON, Canada

**166-P, CFW 57:A44.**

Distribution and composition of fractions of commercial whole wheat flours separated by sieving. A. F. DOBLADO-MALDONADO (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

**258-P, CFW 57:A42.**

Adapting to the new Brazilian wheat quality resolutions. J. L. DE ALMEIDA (1), R. Gerber (2), J. Bressiani (3). (1) Fundacao Agraria de Pesquisa Agropecuaria (FAPA), Guarapuava, Brazil; (2) Moinho Agraria, Guarapuava, Brazil; (3) Cooperativa Agraria Agroindustrial, Guarapuava, Brazil

**73-P, CFW 57:A57.**

Physicochemical properties of bran starches and endosperm starches of soft wheat grown in Michigan. Y. LIU (1), P. Ng (1). (1) Michigan State University, East Lansing, MI, U.S.A.

**250-P, CFW 57:A77.**

The quality comparison between Chinese naked oats flake and the covered oats flakes from North America, Australia, and Europe. H. XIN-ZHONG (1). (1) Northwest A&F University, Yangling, Shaanxi, People's Republic of China

**251-P, CFW 57:A64.**

Distribution of B-vitamins & enzymes in newly developed spring wheats. I. PASHA (1), F. M. Anjum (1), F. Saeed (2), M. Rohi (1). (1) National Institute of Food Science & Technology, University of Agriculture, Faisalabad, Punjab, Pakistan; (2) Department of Food Science, Government College University, Faisalabad, Punjab, Pakistan

**13-P, CFW 57:A68.**

What is the accuracy—can NIR be more accurate than the reference method? An empirical review of global ANN calibrations for whole grain analysis. D. Robey (1), R. Malm (2), C. Janson (2), L. Nørgaard (1), M. HOST (3). (1) Foss Analytical AS, Hillerød, Denmark; (2) Foss, Hoganas, Sweden; (3) FOSS North America, Eden Prairie, MN, U.S.A.

**183-P, CFW 57:A79.**

Improvement of the food safety of partially germinated grains. E. Zamprogna Rosenfeld (1), S. BELLAIO (1), M. Jacobs (2), S. Basu (3), S. Kappeler (1). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler GmbH, Braunschweig, Germany; (3) Buhler (India) Pvt. Ltd., Pune, India





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**11-P, CFW 57:A54. WITHDRAWN****16-P, CFW 57:A60.**

New procedure for evaluating pasta-making aptitude of durum wheat semolina. A. MARTI (1), M. D'Egidio (2), J. Dreisoerner (3), K. Seetharaman (4), M. Pagani (1) (1) Università degli Studi di Milano, Milan, Italy; (2) Consiglio per la Ricerca e la Sperimentazione in Agricoltura, Rome, Italy; (3) Brabender GmbH & Co. KG, Duisburg, Germany; (4) University of Guelph, Guelph, ON, Canada

**Exploring the Differences Between Conventional and Mode Biotechnology—A Focus on Grains • Science Café • Atlantic Ballroom 1**

*Scientific Initiatives: Biotechnology & Sustainability, Quality & Analytical Methods*

Organizers: Brian Beecher, USDA ARS, Wheat Quality Lab, Pullman, WA, U.S.A.; Tandace Scholdberg, USDA-GIPSA, Kansas City, MO, U.S.A.; Michael Giroux, Montana State University, Bozeman, MT, U.S.A.

Moderators: Craig Morris, USDA, Pullman, WA, U.S.A.; Michael Giroux, Montana State University, Bozeman, MT, U.S.A.

Sponsor: Biotechnology Division

This Science Café will tentatively cover the following four topic areas. 1) Traditional wheat breeding versus modern genetic engineering approaches. 2) Economic incentive for biotech wheat development. 3) Drought-tolerant wheat and/or novel biotech wheat traits in the R&D pipeline. 4) Genetic mapping for grain quality traits.

**22-S, CFW 57:A6.**

Mapping of quality traits in soft white wheat. C. F. MORRIS (1), A. H. Carter (2), K. G. Campbell (3), K. K. Kidwell (4). (1) USDA-ARS Western Wheat Quality Lab, Pullman, WA, U.S.A.; (2) Washington State University, Pullman, WA, U.S.A.; (3) USDA-ARS Wheat Genetics, Quality, Physiology and Disease Research Unit, Pullman, WA, U.S.A.; (4) College of Agriculture, Human and Natural Resource Sciences, Washington State University, Pullman, WA, U.S.A.

**23-S, CFW 57:A6.**

Molecular and genetic characterization of polyphenol oxidase genes in wheat. B. BEECHER (1), A. Carter (2), D. Skinner (1), D. See (1). (1) USDA-ARS, Wheat Genetics, Quality, Physiology and Disease Research, Pullman, WA, U.S.A.; (2) Washington State University, Department of Crop and Soil Sciences, Pullman, WA, U.S.A.

**24-S, CFW 57:A6.**

Mutagenic and transgenic approaches to improve wheat end-product quality. M. GIROUX (1), B. Beecher (2), P. Hofer (1), J. M. Martin (1). (1) Montana State University, Bozeman, MT, U.S.A.; (2) USDA-ARS, Washington State University, Pullman, WA, U.S.A.

**25-S, CFW 57:A6.**

Improving nontransgenic crop varieties using plant transformation approaches. P. M. SCOTT (1). (1) USDA-ARS, Ames, IA, U.S.A.

**26-S, CFW 57:A6.**

Mining the wheat genome—Implications for grain quality research. M. K. Morell (1), C. CAVANAGH (1), M. Newberry (1), C. Howitt (1). (1) CSIRO, Canberra, Australia

**Leveraging Innovation, Cost Management, and Sustainability for Profitability • Science Café • Atlantic Ballroom 3**  
*Scientific Initiative: Ingredients & Innovations*

Organizer: Rajen Mehta, SunOpta Ingredients Group, Chelmsford, MA, U.S.A.

Moderators: Rajen Mehta, SunOpta Ingredients Group, Chelmsford, MA, U.S.A.; Brian Anderson, Bunge Milling, St. Louis, MO, U.S.A.; Theresa Cogswell, Baker Cogs Inc., Olathe, KS, U.S.A.

Sponsor: Nutrition Division

Financial Sponsors: Cargill, Inc., Matsutani America/ADM, J. Rettenmaier, SunOpta Ingredients Group

Innovation, continuous improvement, productivity improvement, and cost management are key tools used by industry and academic institutions to improve profitability and deliver value-added products to both internal and external customers. This Science Café will focus on processes that companies use to innovatively reduce costs to improve profitability using these tools. We will discuss some of these continuous improvement tools, and then speakers drawn from diverse segments of the food industry will discuss ideas and share successes to achieve cost efficiencies and productivity improvement.

**27-S, CFW 57:A10.**

Leveraging continuous improvement and other tools for profitability and cost reduction. R. MEHTA (1). (1) SunOpta Ingredients Group, Chelmsford, MA, U.S.A.

**28-S, CFW 57:A10.**

Kaizen usage to drive continuous improvement. L. MURRAY (1). (1) Bunge North America, St. Louis, MO, U.S.A.

**29-S, CFW 57:A10.**

Science and technology insights to reduce costs and deliver sustainability. J. KEPPLINGER (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

**30-S, CFW 57:A10.** Challenges and opportunities in improving profitability by managing costs. E. ARNDT (1). (1) ConAgra Foods, Inc., Omaha, NE, U.S.A.

**Enhance Your Career.  
Empower Your Research.**

**AACCI Speed Mentoring Event and Social**

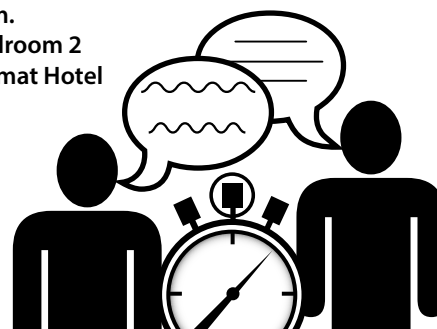
Meet professionals in the field who are interested in mentoring you to the next level in your career. Learn about the career paths of more experienced colleagues, gain insight and guidance into your own career, and cultivate long-term professional associations.

**Tuesday, October 2**

**4:30–5:30 p.m.**

**Diplomat Ballroom 2**

**Westin Diplomat Hotel**



### 31-S, CFW 57:A11.

Case studies in value optimization without compromise using advanced texturizers. Y. L. DAR (1), E. M. Yildiz (1), L. Drew (1), M. Yurgec (1), T. Motwani (1). (1) Ingredion, Inc., Bridgewater, NJ, U.S.A.

### 32-S, CFW 57:A11.

The use of statistical process control to improve manufacturing process performance and reduce cost. K. M. GARDNER (1). (1) National Starch Food Innovation, Bridgewater, NJ, U.S.A.

## HOT TOPIC

### Impact of Drought on Grain • Regency Ballroom 1

Organizer/Moderator: Deirdre Ortiz, Kellogg Company, Battle Creek, MI, U.S.A.

This symposium will be HOT! The 2012 drought in the U.S. and other parts of the world have given us a glimpse into the future and this symposium will provoke discussion about the impact of drought on our major cereal crops. We will learn about the impact of drought on the grain trade, plant physiology and the functional properties of wheat and corn. Please join us for an informative session.

Global agriculture environment. V. ROBINSON (1). (1) DuPont Pioneer, Johnston, IA, U.S.A.

Drought's effect on corn physiology. L. LLOYD (1). (1) DuPont Pioneer, Union City, TN, U.S.A.

Impact of drought on alkaline cooked corn for snack food. J. MATHEW (1). (1) Frito-Lay Inc., Plano, TX, U.S.A.

Impact of drought on the functional properties of wheat. M. MORELL (1). (1) CSIRO, Canberra, ACT, Australia

## Supplier Innovation Session II

2:00 – 3:20 p.m. • Room 217

### 2:00 – 2:40 p.m.

Company: Buhler Inc.

Name of Product: Food Innovation Center

Contact Name: April Courville

Presenter's Name: Eugene Dust

Presentation Category: Instruments/Equipment/Services

Introducing The Food Innovation Center, a new food-grade facility designed for research, education, and consumer ready testing.

### 2:40 – 3:20 p.m.

Company: ICL Performance Products LP

Name of Product: Licresse™ Natural Food Ingredient

Contact/Presenter Name: Barbara Bufo Heidolph

Presentation Category: Ingredients

Licresse™ licorice extract is naturally high in antioxidants and can aid stabilization of foods. Licresse™ is a value-added natural ingredient.

## ► TUESDAY, OCTOBER 2

### Sessions – Tuesday Morning (8:30 – 10:10 a.m.)

(listed in alphabetical order by title)

**Session number (1-S)** and **technical number (1-O)** refer to the Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

### Best Student Research Paper Competition • Symposium •

Regency Ballroom 3

*Scientific Initiatives: Covers all initiatives*

8:30 – 11:00 a.m. (extended time)

Organizer: AACCI Professional Development Panel, Pierre Faa, PDP Chair, Frito Lay, Inc., Plano, TX, U.S.A.

Moderators: Vani Vemulapalli, Kraft Foods Inc., East Hanover, NJ, U.S.A.; Angela Dodd, Cargill Inc., Plymouth, MN, U.S.A.

Financial Sponsors: Cargill Inc., DSM Food Specialties USA Inc., Frito-Lay, Inc., General Mills, ICL Performance Products LP, Kellogg Co., Kerry Ingredients, Kraft Foods Inc., McCormick & Co. Inc., Starquest F.O.O.D. Consulting LLC, The Kroger Co.

The objectives of this competition are to challenge students to demonstrate superior presentation skills, highlight the best research conducted and presented by students, and offer an opportunity for students to interact with the AACCI International community at an early stage in their career. The competition is judged in two stages. During the first phase, university department heads nominate student members, who submit an abstract and initial presentation. A jury reviews the many nominations and chooses six students to advance to the final round of competition. This symposium will showcase the top six finalists.

8:30 a.m. Welcome

8:35 a.m. **33-S, CFW 57:A2.** Action pattern of amylases with bread crumb anti-firming properties. L. J. DERDE (1), S. V. Gomand (1), C. M. Courtin (1), J. A. Delcour (1). (1) KU Leuven, Heverlee, Belgium

9:00 a.m. **34-S, CFW 57:A2.** Effect of sorghum polyphenols on in vitro starch digestibility. F. BARROS (1), J. Awika (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

9:25 a.m. **35-S, CFW 57:A2.** Variability in arabinoxylan, xylanase activity, and xylanase inhibitor levels in hard spring wheat. M. M. MENDIS (1), S. Simsek (1), J. B. Ohm (2), J. Delcour (3), K. Gebruers (3). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) USDA-ARS Cereal Crop Research Unit, Fargo, ND, U.S.A.; (3) Katholieke Universiteit Leuven, Leuven, Belgium

9:50 a.m. **36-S, CFW 57:A2.** Oxidative gelation of alkali-extractable arabinoxylans from corn bran. M. S. KALE (1), O. H. Campanella (1), B. R. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

10:15 a.m. **37-S, CFW 57:A3.** Enhancing salt taste perception in wheat bread crumb through texture



and inhomogeneous sodium distribution. K. KONITZER (1), T. Wieber (2), P. Koehler (2), T. Hofmann (3). (1) Technische Universität München, Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, Germany; (2) Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, Germany; (3) Technische Universität München, Freising, Germany

10:40 a.m. **38-S, CFW 57:A3.** Does particle size affect antioxidant activity and extractability of phenolic compounds in wheat bran? L. R. BREWER (1). (1) Kansas State University, Manhattan, KS, U.S.A.

### Chemistry and Nutrition of Pulses and Minor Cereals •

**Symposium • Atlantic Ballroom 1**  
*Scientific Initiative: Health & Nutrition*

Organizers: El-Sayed Abdel-Aal, Agriculture & Agri-Food Canada, Guelph, ON, Canada; Shea Miller, Agriculture & Agri-Food Canada, Ottawa, ON, Canada; Sathya Kalambur, Frito-Lay, Inc., Plano, TX, U.S.A.; Supriya Varma, Frito-Lay, Inc., Plano, TX, U.S.A.; Koushik Seetharaman, University of Guelph, Guelph, ON, Canada

Moderators: El-Sayed Abdel-Aal, Agriculture & Agri-Food Canada, Guelph, ON, Canada; Supriya Varma, Frito-Lay, Inc., Plano, TX, U.S.A.

A wide range of alternatives can be found outside the major global staples of wheat, corn, barley, rice, and soy. This symposium aims to present current information on the chemistry, functionality, nutritional potential, and processing characteristics of some of these alternate crops, such as pulses and minor cereals. Major challenges encountered while developing new products with pulses and minor cereals will be discussed. This symposium will also provide an overview of research progress and research gaps with respect to health benefits of grains focused mainly on human subject studies from around the world.

8:30 a.m. **39-S, CFW 57:A3.** Pargem, the technology for a new family of healthy, safe, and convenient food ingredients based on partial germination. S. BELLAIO (1), E. Zamprognia Rosenfeld (1), M. Jacobs (2), S. Basu (3), S. Kappeler (1). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler GmbH, Braunschweig, Germany; (3) Buhler (India) Pvt. Ltd., Pune, India

8:50 a.m. **40-S, CFW 57:A3.** Novel starches and proteins from *Amaranthus* and buckwheat. H. CORKE (1). (1) University of Hong Kong, Hong Kong

9:10 a.m. **41-S, CFW 57:A3.** Current advances in human studies on the health benefits of cereals and pulses. D. RAMDATH (1), K. Seetharaman (2). (1) Guelph Food Research Centre, Guelph, ON, Canada; (2) University of Guelph, Guelph, ON, Canada

9:30 a.m. **42-S, CFW 57:A4.** Overview of nutritional aspects of millets and minor millets. G. Annor (1), M. McSweeney (1), K. SEETHARAMAN (1). (1) University of Guelph, Guelph, ON, Canada

9:50 a.m. **43-S, CFW 57:A4.** Cereal-legume synergy: Exploiting differences in polyphenolic composition of sorghum and cowpea to provide complementary health benefits. L. Yang (1), L. O. Ojwang

(2), S. Talcott (1), C. Allred (1), J. M. AWIKA (1). (1) Texas A&M University, College Station, TX, U.S.A.; (2) Kellogg's Research & Development, Battle Creek, MI, U.S.A.

### Modeling Quality • Technical • Atlantic Ballroom 3

*Scientific Initiative: Quality & Analytical Methods*

Moderators: Andrew Ross, Oregon State University, Corvallis, OR, U.S.A.; Koen Janssens, KU Leuven, Leuven, Belgium

8:30 a.m. **26-O, CFW 57:A27. Edith Christensen Award for Outstanding Contributions in Analytical Methods** – Statistics and the cereal chemist. T. NELSEN (1). (1) Consultant, Port Byron, IL, U.S.A.

9:10 a.m. **27-O, CFW 57:A21.** High-speed imaging of wheat kernels for detection of defects. S. R. DELWICHE (1). (1) USDA-ARS, Beltsville, MD, U.S.A.

9:30 a.m. **28-O, CFW 57:A20.** Modeling the effect of protein quantity and quality on rheological properties of gluten measured by creep-recovery and compression-recovery tests. P. CHOMPOORAT (1), P. Rayas-Duarte (1), S. J. Mulvaney (2). (1) Oklahoma State University, Stillwater, OK, U.S.A.; (2) Cornell University, Ithaca, NY, U.S.A.

9:50 a.m. **29-O, CFW 57:A21.** Quantitative imaging of the layered structure in croissant at different stages of processing. C. DELIGNY (1), G. Collewet (1), J. Bousquières (1), S. Challoy (2), D. Le-ray (2), T. Lucas (1). (1) Irstea, UR TERE, Rennes, France/ Université Européenne de Bretagne, France, Rennes, France; (2) Irstea, UR TERE, Rennes, France

### Protein & Starch Changes Occurring During Various Cold Forming and Dehydration Processing of Pasta, Noodle, & Pretzel Products • Symposium • Regency Ballroom 1

*Scientific Initiatives: Chemistry & Interactions, Engineering & Processing*

Organizers: Sathya Kalambur, Frito-Lay, Inc., Plano, TX, U.S.A.; Vamshi Puppala, Frito-Lay, Inc., Plano, TX, U.S.A.; Supriya Varma, Frito-Lay, Inc., Plano, TX, U.S.A.

Moderators: Vamshi Puppala, Frito-Lay, Inc., Plano, TX, U.S.A.; Girish Ganjyal, Pepsico, Plano, TX, U.S.A.

Cereal ingredients undergo different types of processing operations that transform them into foods with desirable sensory and nutritional profiles. Certain cereal foods, including pasta, noodles, or pretzels, undergo cold-forming processes, such as extrusion or sheeting, followed by subsequent dehydration. These processes produce unique physical and/or chemical changes in the structures of starch and protein fractions of these cereal ingredients. For example, protein aggregation and starch swelling behaviors in pasta products are impacted by cold-extrusion and dehydration processes that subsequently affect final cooking quality. This symposium will provide insights into the molecular changes of starch and protein that occur due to application of thermal and mechanical energy during the manufacturing of certain cereal foods, particularly pasta, noodles, and pretzels.

8:30 a.m. **44-S, CFW 57:A14.** Process mapping: What we can learn from this approach. K. SEETHARAMAN (1), S. Walker (1), V. Gawuga



- (1). (1) University of Guelph, Guelph, ON, Canada
- 8:50 a.m. **45-S, CFW 57:A14.** Product model systems approach to study thermomechanical effects on wheat starch and protein. C. DON (1), M. Thomas (2), A. Dubat (3). (1) Foodphysica, Driel, Netherlands; (2) Zetadec B.V., Wageningen, Netherlands; (3) CHOPIN Technologies, Villeneuve-la-Garenne, France
- 9:10 a.m. **46-S, CFW 57:A14.** A molecular view of individual processing steps in pasta making. S. IAMETTI (1), F. Bonomi (2), M. Marengo (1), A. Marti (2), M. Miriani (1), E. Ragg (1), M. Pagani (3). (1) DISMA – University of Milan, Milan, Italy; (2) University of Milan, Milan, Italy; (3) DISTAM – University of Milan, Milan, Italy
- 9:30 a.m. **47-S, CFW 57:A15.** Structuring of pasta components during processing: Impact on starch and protein digestibility and allergenicity. V. MICARD (1), M. Petitot (1), C. Barron (2), M. Morel (2), C. Brossard (3), C. Larré (3). (1) SupAgro, Montpellier, France; (2) INRA, Montpellier, France; (3) INRA, Nantes, France
- 9:50 a.m. **48-S, CFW 57:A15.** Innovations in extrusion—Configuring a multioperation, low-shear, semi-cold process for novel and nutritious products. S. ALAVI (1), A. Adedeji (1), M. Joseph (1), B. Plattner (2). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Wenger Manufacturing, Sabetha, KS, U.S.A.

### Supplier Innovation Session III

9:00 – 11:00 a.m. • Room 217

#### 9:00 – 9:40 a.m.

Company: FOSS North America

Name of Product: Infratec 1241

Contact Name: Mary Mackres

Presenter Name: Ron Lindgren

Presentation Category: Instruments/Equipment/Services

Infratec 1241—25 years of consistent data resulting in a global ANN calibration based on more than 50,000 samples.

#### 9:40 – 10:20 a.m.

Company: QualySense

Name of Product: QSorter

Contact/Presenter Name: Dr. Francesco Dell'Endice

Presentation Category: Instruments/Equipment/Services

QSorter: Excellence in grains, seeds, and beans sorting. High-speed “one by one” analysis and sorting of cereals with respect to biochemical and external traits.

#### 10:20 – 11:00 a.m.

Company Name: Bepex International, LLC

Name of Products: Continuous thin film indirect heat transfer processing under nonatmospheric and atmospheric conditions.

Contact Person: Kaitlin Carter

Presenter Name: Peter M. Koenig

Presentation Category: Instruments/Equipment/Services

Case studies, material samples, and processing video clip highlight indirect heat treatment processing capability as a tool for cereal chemists.

### Sessions – Tuesday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

**Session number (1-S)** and **technical number (1-O)** refer to the Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

#### Addressing Texture Challenges in Baked Products •

**Symposium • Atlantic Ballroom 1**

*Scientific Initiative: Ingredients & Innovations*

Organizer/Moderator: Yadunandan Dar, Ingredion, Inc., Bridgewater, NJ, U.S.A.

This symposium will cover advances in ingredients and measurement techniques to develop and optimize texture in baked products. These include traditional baked products such as bread or baked desserts. It will also cover emerging areas, including gluten-free and low-sugar products. The talks will include a review of tools and techniques used to measure texture as well as new research in addressing texture and related processing challenges for baked products.

- 10:40 a.m. **49-S, CFW 57:A1.** Introduction: Addressing texture challenges in baked products. Y. L. DAR (1). (1) Ingredion, Inc., Bridgewater, NJ, U.S.A.
- 11:00 a.m. **50-S, CFW 57:A1.** Measuring and addressing texture challenges in healthy baked products. M. B. WHITWORTH (1), M. C. Poole (1), F. K. Gates (1), H. Metcalfe (1). (1) Campden BRI, Chipping Campden, United Kingdom
- 11:20 a.m. **51-S, CFW 57:A1.** Leveraging fiber's properties to manage and improve the texture of baked goods. R. MEHTA (1). (1) SunOpta Ingredients Group, Chelmsford, MA, U.S.A.
- 11:40 a.m. **52-S, CFW 57:A1.** Gluten-free food products with texture comparable to wheat flour-based products. D. UZUNALIOGLU (1), C. Thomas (1), J. Maliska (2), A. Perez (1), H. Simpson (1), Y. Dar (1). (1) Ingredion, Inc., Bridgewater, NJ, U.S.A.; (2) Corn Products International/National Starch Food Innovation, Hamburg, Germany
- 12:00 p.m. **53-S, CFW 57:A2.** Overcoming the challenges in replacing sugar in bakery products while maintaining desired texture and taste. M. NOORT (1), A. Martin (1), A. Jurgens (1). (1) TNO, Zeist, Netherlands

#### Food Allergy Thresholds and Risk Assessment: Potential Stakeholder Benefits • Symposium • Atlantic Ballroom 3

*Scientific Initiative: Food Safety & Regulatory*

Organizers: Andreia Bianchini, The Food Processing Center, University of Nebraska, Lincoln, NE, U.S.A.; Joseph L. Baumert, Food Allergy Research & Resource Program, University of Nebraska, Lincoln, NE, U.S.A.

Moderator: Andreia Bianchini, The Food Processing Center, University of Nebraska, Lincoln, NE, U.S.A.

Sponsor: Food Safety and Microbiology Technical Committee

This symposium will provide a general introduction to food allergy thresholds from a clinical, consumer, industry, and

regulatory standpoint, all leading to the final talk in quantitative risk assessment based on food allergen thresholds.

- 10:40 a.m. **54-S, CFW 57:A7.** The scientific, regulatory and clinical case for food allergen thresholds. J. L. BAUMERT (1). (1) Food Allergy Research & Resource Program, University of Nebraska, Lincoln, NE, U.S.A.
- 11:00 a.m. **55-S.** Challenges for the food-allergic consumer: Potential benefits of food allergen thresholds for finished product labeling. M. ACEBAL (1). (1) FAAN (The Food Allergy & Anaphylaxis Network), Fairfax, VA, U.S.A.
- 11:20 a.m. **56-S, CFW 57:A7.** A food industry perspective on thresholds for allergen control and labeling. C. LLEWELLYN (1). (1) The Coca-Cola Company, Atlanta, GA, U.S.A.
- 11:40 a.m. **57-S, CFW 57:A7.** The use of food allergen thresholds for quantitative risk assessment approaches. B. REMINGTON (1), J. Baumert (1), S. Taylor (1). (1) Food Allergy Research & Resource Program, University of Nebraska, Lincoln, NE, U.S.A.
- 12:00 p.m. Discussion

### Micro- and Macro-Nutrient Digestion and Health •

**Technical •** Regency Ballroom 1

*Scientific Initiative: Health & Nutrition*

10:40 a.m. – 12:40 p.m. (extended time)

Moderator(s): Deirdre Ortiz, Kellogg Company, Battle Creek, MI, U.S.A.; Matthew McSweeney, University of Guelph, Guelph, ON, Canada

- 10:40 a.m. **30-O, CFW 57:A26.** Iron and protein in experimental wheat lines carrying the *Gpc-B1* gene from wild emmer wheat. S. S. MILLER (1), H. Voldeng (1), E. M. Watson (1). (1) Agriculture and Agri-Food Canada, Ottawa, ON, Canada
- 11:00 a.m. **31-O, CFW 57:A20.** Avenanthramides are bioavailable in healthy older adults when administered in a high avenanthramide oat bran muffin. F. COLLINS (1), D. L. McKay (2), J. B. Blumberg (2), O. Chen (2). (1) Agriculture and Agri-Food Canada, Ottawa, ON, Canada; (2) Antioxidants Research Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, MA, U.S.A.
- 11:20 a.m. **32-O, CFW 57:A22.** A study of natural variation in raffinose family oligosaccharides (RFO) in chickpea. M. P. GANGOLA (1), Y. P. Khedikar (1), P. M. Gaur (2), M. Baga (1), R. K. Varshney (2), R. N. Chibbar (1). (1) University of Saskatchewan, Saskatoon, SK, Canada; (2) ICRISAT, Hyderabad, India
- 11:40 a.m. **33-O, CFW 57:A26.** Oligofructose lowers energy intake in healthy humans. D. MEYER (1), S. Verhoef (2), K. Westerterp (2). (1) Sensus, Roosendaal, Netherlands; (2) Maastricht University, Department of Human Biology, Maastricht, Netherlands

- 12:00 p.m. **34-O, CFW 57:A26.** Structure of starch salivary amylase hydrolysates after cooking at different water concentrations. K. K. NANTANGA (1), E. Bertoft (1), K. Seetharaman (2). (1) University of Guelph, Guelph, ON, Canada; (2) Department of Food Science, University of Guelph, Guelph, ON, Canada
- 12:20 p.m. **34a-O,** The essentiality of dietary fiber. D. GORDON (1). (1) Cathlamet, WA, U.S.A.

### Recent Advances in Wheat Genetics • Technical • Atlantic Ballroom 2

*Scientific Initiative: Biotechnology & Sustainability*

Moderators: Ryan West, University of Guelph, Guelph, ON, Canada; Christophe Courtin, KU Leuven, Lueven, Belgium

- 10:40 a.m. **35-O, CFW 57:A19.** Cereal bioengineering and the potential of new cereal models. A. BLENNOW (1), V. Tanackovic (1), M. Carciofi (2), S. S. Shaik (1), S. L. Jensen (1), P. B. Holm (2), K. H. Hebelstrup (2). (1) University of Copenhagen, Frederiksberg, Denmark; (2) Aarhus University, Slagelse, Denmark
- 11:00 a.m. **36-O, CFW 57:A27.** Response of wheat plants to stress as expressed by antioxidant levels in the grain. O. F. RAMOS (1), R. L. Madl (1), A. K. Fritz (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 11:20 a.m. **37-O, CFW 57:A20.** Genetic markers in *HvCslF6* are major predictors of beta-glucan concentration in barley. A. T. CORY (1), M. Baga (1), B. G. Rosnagel (1), A. Anyia (2), R. N. Chibbar (1). (1) University of Saskatchewan, Saskatoon, SK, Canada; (2) Alberta Innovates – Technology Futures, Vegreville, AB, Canada
- 11:40 a.m. **38-O, CFW 57:A29.** Effect of the introduction of D-genome related wheat proteins and elevation of starch amylose content in durum wheat on pasta and bread making quality. M. SISSONS (1), D. Fleming (2), F. Sestili (3), D. Lafiandra (4). (1) Tamworth Agricultural Institute, Calala, NSW, Australia; (2) Wagga Wagga Agricultural Research Institute, Wagga Wagga, NSW, Australia; (3) Department of Agriculture, Forest, Nature and Energy, University of Tuscia, Viterbo, Italy; (4) Viterbo, Italy
- 12:00 p.m. **39-O, CFW 57:A26.** Fine mapping the control of starch structural and functional properties in wheat. M. K. MORELL (1), C. Cavanagh (1), M. Newberry (1), C. Howitt (1). (1) CSIRO, Canberra, Australia

## Sessions – Tuesday Afternoon (2:30 – 4:30 p.m.)

(listed in alphabetical order by title)

**Session number (1-S) and poster number (1-P)** refer to the Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

### Current Status and Development Trends of Asian Products • Science Café • Atlantic Ballroom 1

*Scientific Initiatives: Biotechnology & Sustainability, Chemistry & Interactions, Health & Nutrition, Quality & Analytical Methods*

Organizers/Moderators: Larisa Cato, Department of Agriculture and Food WA, South Perth, WA, Australia; Gary Hou, Wheat Marketing Portland, Portland, OR, U.S.A.

Sponsor: Asian Products Technical Committee

A Science Café on the current status and development trends in the area of grain research, market development, and specific quality requirements for Asian products.

#### 58-S, CFW 57:A4.

Current status and development trend of Asian products in China. C. WANG (1). (1) Yihai Kerry Investments Co., Ltd. (Wilmar International Limited), Shanghai, People's Republic of China

#### 59-S, CFW 57:A4.

Japanese perspectives on grain products: Viewpoints from the marketplace and from research and development. H. OKUSU (1). (1) Nippon Flour Mills, Atsugi, Kanagawa, Japan

#### 60-S, CFW 57:A4.

Current status and development trend of Asian products in Brazil. G. Vernaza (1), C. J. STEEL (1), Y. K. Chang (1). (1) University of Campinas, Campinas, SP, Brazil

#### 61-S, CFW 57:A4.

Use of ultrasonic measurements of Asian noodles at different frequencies to differentiate product texture: The influence of gluten strength. S. Diep (1), D. Daugelaite (1), A. Strybulevych (2), M. G. Scanlon (3), J. H. Page (2), D. W. HATCHER (4). (1) Grain Research Laboratory, Canadian Grain Commission/Food Science Department, University of Manitoba, Winnipeg, MB, Canada; (2) Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; (3) Food Science Department, University of Manitoba, Winnipeg, MB, Canada; (4) Grain Research Laboratory, Canadian Grain Commission, Winnipeg, MB, Canada

### Grain Analysis and Processing • PosterTalk • Regency Ballroom 1

Moderator: Dan Ramseyer, ConAgra Foods, Inc., Denton, TX, U.S.A.

#### 102-P, CFW 57:A53.

Characterization of oat storage proteins. K. S. KUENKAMP (1), P. Koehler (1). (1) German Research Center for Food Chemistry, Freising, Germany

#### 141-P, CFW 57:A79.

Effects of insoluble solids content on evaporator fouling during thin stillage concentration. Y. ZHENG (1), R. K. Challa (1), D. Johnston (2), V. Singh (1), M. E. Tumbleson (1), K. D. Rausch (1). (1) University of Illinois at Urbana-Champaign, Champaign, IL, U.S.A.; (2) Eastern Regional Research Center, USDA-ARS, Wyndmoor, PA, U.S.A.

#### 60-P, CFW 57:A67.

Importance of fat-dough interactions in sheeted dough products. S. RENZETTI (1), A. Jurgens (1). (1) TNO, Zeist, Netherlands

#### 49-P, CFW 57:A64.

Interactions between hydroxypropylmethyl cellulose of varying degrees of hydroxypropylation and gluten proteins. K. PALMER (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

#### 40-P, CFW 57:A65.

Effect of pre-germination process on chemical and physico-chemical properties of Thai waxy rice flour and starch. H. PINKAEW (1), O. Naivikul (1). (1) Department of Food Science and Technology, Kasetsart University, Bangkok, Thailand

#### 66-P, CFW 57:A33. WITHDRAWN

#### 168-P, CFW 57:A72.

Interactions between anthocyanins and cereal ingredients during extrusion. Z. TACER CABA (1), D. Nilufer Erdil (1), M. Boyacioglu (2), P. K. Ng (3). (1) Istanbul Technical University, Food Engineering Department, Maslak, Istanbul, Turkey; (2) Doruk Group Holding, Istanbul, Turkey; (3) Michigan State University, Department of Food Science & Human Nutrition, East Lansing, MI, U.S.A.

#### 27-P, CFW 57:A67.

Research approaches in the development of texture stable multi-components bakery products: A quantitative high-throughput screening system for water migration combined with a predictive model. S. RENZETTI (1), J. A. Voogt (1). (1) TNO, Zeist, Netherlands

#### 227-P, CFW 57:A70.

Effect of different sprouting conditions on  $\alpha$ -amylase activity and functional properties in wheat. S. SHAFQAT (1), J. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

#### 50-P, CFW 57:A38.

Effect of different amounts of fibres and water on gluten-free doughs and bread properties. C. Cappa (1), M. Lucisano (1), M. MARIOTTI (1). (1) DiSTAM, University of Milan, Milan, Italy

#### 90-P, CFW 57:A74.

Is amylopectin internal structure a predictor of starch thermal properties? V. VAMADEVAN (1), E. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

**17-P, CFW 57:A59. WITHDRAWN****93-P, CFW 57:A52.**

Molecular structure of starch in developing wheat endosperm. D. N. KALINGA (1), E. Bertoft (1), R. Yada (1), K. Seetharaman (1). (1) Department of Food Science, University of Guelph, Guelph, ON, Canada

**106-P, CFW 57:A72.**

Identification of polyphenolics from different morphological parts of sorghum by UPLC-PDA-MS/MS. V. M. TALEON (1), L. Dykes (1), W. L. Rooney (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

**211-P, CFW 57:A38.**

Enzymatically modified gluten by amino acid binding on whole wheat flour for preparation of gluten-reduced breads for celiac disease treatment. A. M. CALDERÓN DE LA BARCA (1), A. R. Islas-Rubio (1), F. Cabrera-Chavez (2), N. G. Heredia-Sandoval (1). (1) CIAD, A.C., Hermosillo, Sonora, Mexico; (2) Freelance, Hermosillo, Sonora, Mexico

**Protein Quality in Product Development: Regulatory Considerations • Science Café • Atlantic Ballroom 3**

*Scientific Initiative: Health & Nutrition*

Organizer: Viswas Ghorpade, Kellogg Company, Battle Creek, MI, U.S.A.

Moderators: Kathy Greaves, Kellogg Company, Battle Creek, MI, U.S.A.; Viswas Ghorpade, Kellogg Company, Battle Creek, MI, U.S.A.

Sponsor: Protein Division

Financial Sponsor: Kellogg Company (Protein Strategic Technology Platform)

In the 2011 Protein Enrichment in Cereal Products symposium, there were lots of discussions on protein quality and its nutritional aspects in product development. Many members had confusion about calculations of protein for superior claims and regulatory aspects of assessing this requirement. PDCASS and PER calculations and methods used to make these claims seem important to many industry members. This session will focus on protein quality, assessing methods, and regulatory framework.

**62-S, CFW 57:A15.**

Protein quality: Methodology and benefits in grain-based foods. K. A. GREAVES (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

**63-S, CFW 57:A15.**

U.S. regulatory perspective—Claims regarding protein quality. R. L. VAN LAACK (1). (1) Hyman, Phelps, and McNamara, PC, Washington, DC, U.S.A.

**64-S, CFW 57:A15.**

Protein quality: A Canadian perspective—Is there movement toward the use of PDCAAS? L. DIFRANCESCO (1). (1) Source! Nutrition, Toronto, ON, Canada

**65-S, CFW 57:A15.**

FAO/WHO perspective—Upper limit of 1.0 for PDCAAS or unlimited. N. L. BOOTH (1), C. Kruger (1), R. Clemens (2). (1) Spherix Consulting, Inc., Bethesda, MD, U.S.A.; (2) E. T. Horn, La Mirada, CA, U.S.A.

**66-S, CFW 57:A16.**

Grain proteins—Combining incomplete proteins and amino acids for improved protein quality. J. M. JONES (1). (1) St. Catherine University, Arden Hills, MN, U.S.A.

**Update on In Vivo and In Vitro Studies on Health •****PosterTalk • Regency Ballroom 3**

Moderators: Robert Gilbert, University of Queensland, Brisbane, QLD, Australia; Avi Goldstein, University of Guelph, Guelph, ON, Canada

**204-P, CFW 57:A52.**

Influence of bioprocessing on structure and properties of rye bran and subsequent in vitro conversions of phenolic compounds and in vivo bioavailability. K. KATINA (1), A. Aura (1), J. Lappi (2), H. Mykkänen (2), K. Poutanen (1). (1) VTT, Espoo, Finland; (2) University of Eastern Finland, Kuopio, Finland

**208-P, CFW 57:A74.**

Effect of breakfast cereals with varying doses of oat fiber on appetite and satiety. J. VAN KLINCKEN (1), C. J. Rebello (2), W. D. Johnson (2), M. O'Shea (1), A. Kurilich (1), F. L. Greenway (2). (1) Quaker, Barrington, IL, U.S.A.; (2) Pennington Biomedical Research Center, Baton Rouge, LA, U.S.A.

**212-P, CFW 57:A71.**

Whole grain consumption, body mass index, and body composition in older Australian women. V. A. SOLAH (1), D. A. Kerr (1), X. Meng (1), C. W. Binns (1), Z. Zhu (2), A. Devine (3), R. L. Prince (2). (1) School of Public Health, Curtin Health Innovation Research Institute, Curtin University of Technology, Perth, WA, Australia; (2) School of Medicine and Pharmacology, University of Western Australia, Department of Endocrinology and Diabetes, Sir Charles Gairdner Hospital, Perth, WA, Australia; (3) School of Exercise, Biomedical and Health Science, Edith Cowan University, Perth, WA, Australia

**193-P, CFW 57:A78.**

Ability of specific dietary fibers to normalize the gut microbiota in obese states. J. YANG (1), D. J. Rose (1), I. Martinez (1), J. Walter (1), A. Keshavarzian (2). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.; (2) Rush University Medical Center, Chicago, IL, U.S.A.

**108-P, CFW 57:A61.**

Effect of different contents and molecular weights of condensed tannins from grain sorghum (*Sorghum bicolor* [L.] Moench) on the enzyme activity of human salivary and porcine pancreatic alpha amylases. N. MKANDAWIRE (1), C. L. Weller (1), D. S. Jackson (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

**85-P WITHDRAWN****203-P, CFW 57:A56.**

Mammalian mucosal  $\alpha$ -glucosidases may have a role in starch digestion beyond  $\alpha$ -glucogenesis to assist  $\alpha$ -amylase of granular starch digestion. A. LIN (1), S. Dhital (2), B. L. Nichols (3), M. Gidley (2), B. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.; (2) University of Queensland, QLD, Australia; (3) USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, U.S.A.

**201-P, CFW 57:A55.**

Identification of an  $\alpha$ -glucosidase control point for modulating initial high glycemic response from starch digestion. B. LEE (1), B. R. Hamaker (1), B. L. Nichols (2). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.; (2) USDA-ARS/Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, U.S.A.



**83-P, CFW 57:A37.**

Roles of alpha-amylase and amyloglucosidase in in vitro resistant starch test. L. R. Brewer (1), L. Cai (2), Y. SHI (1). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Washington State University, Pullman, WA, U.S.A.

**97-P, CFW 57:A49.**

Time evolution of starch molecular and crystalline structures during in vitro and in vivo digestion of raw and cooked starch/grains. J. HASJIM (1), A. Teng (1), T. Witt (1), Z. Syahariza (1), M. J. Gidley (1), R. G. Gilbert (1). (1) The University of Queensland, Centre for Nutrition and Food Sciences, Queensland Alliance for Agriculture and Food Innovation, Brisbane, Australia

**191-P, CFW 57:A70.**

Low-calorie bread with charred cellulose granules/wheat flour and elimination of toxic dye (xanthene) in alimentary canal by charred cellulose granules. M. SEGUCHI (1), A. Tabara (1). (1) Kobe Women's University, Kobe, Japan

**45-P, CFW 57:A46.**

Impact of digestive enzymes on the optimization of in vitro digestion and beta glucan viscosity measurement using Rapid Visco Analyzer. T. H. GAMEL (1), S. M. Tosh (1), E. M. Abdel-Aal (1), N. P. Ames (2). (1) Agriculture & Agri-Food Canada – Guelph Food Research Centre, Guelph, ON, Canada; (2) Agriculture & Agri-Food Canada – Richardson Centre for Functional Foods and Nutraceuticals, Winnipeg, MB, Canada

**209-P, CFW 57:A49.**

Consumption of wheat bran modified by autoclaving reduces plasma glucose and increases lean body mass at the expense of fat mass in hamsters. S. Harding (1), H. SAPIRSTEIN (2), T. Rideout (1), C. Marinangeli (1), P. Jones (1). (1) Richardson Centre for Functional Foods & Nutraceuticals, University of Manitoba, Winnipeg, MB, Canada; (2) Department of Food Science, University of Manitoba, Winnipeg, MB, Canada

**202-P, CFW 57:A71.**

Natural polyphenols are potential inhibitors of intestinal maltase-glucoamylase (ct-MGAM subunit) for control of glucose release from starch digestion. M. SIMSEK (1), R. Quezada-Calvillo (2), B. L. Nichols (3), B. R. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.; (2) Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico; (3) USDA, Children's Nutrition Research Center and Department of Pediatrics, Baylor College of Medicine, Houston, TX, U.S.A.

**205-P, CFW 57:A36.**

Comparative fermentation of insoluble carbohydrates in an in vitro human faeces model spiked with *L. acidophilus* NCFM. A. BLENNOW (1), A. Knudsen (1), G. C. van Zanten (1), S. L. Jensen (1), S. Forssten (2), M. Saarinen (2), S. Lahtinen (2), O. B. Sorensen (3), L. Jespersen (1), B. Svensson (4). (1) University of Copenhagen, Frederiksberg, Denmark; (2) Danisco Sweeteners Oy, Kantvik, Finland; (3) KMC Amba, Brande, Denmark; (4) Technical University of Denmark, Lyngby, Denmark

**HOT TOPIC****Food Safety Modernization Act (FSMA) – An Update •**

Atlantic Ballroom 2

2:30 – 6:00 p.m. *Extended*

Organizers/Moderators: Barbara Bufe Heidolph, ICL Performance Products LP, St. Louis, MO, U.S.A.; Jennifer S. Robinson, Bay State Milling Co., Minneapolis, MN, U.S.A.

Experts in the area of Food Safety and the U.S. Food Safety Modernization Act will provide an overview of the current impact of the FSMA including:

1. Impact on food manufacturers
2. Requirements for food ingredient suppliers
3. International implications
4. What can be expected next as the act is translated into regulation
5. Specific concerns for the bakery industry
6. Supply chain from field to table, how do all participants engage in best practices?

**► WEDNESDAY, OCTOBER 3****Sessions – Wednesday Morning (8:30 – 10:10 a.m.)**

(listed in alphabetical order by title)

**Session number (1-S)** and **technical number (1-O)** refer to the Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

**Enzymes in Cereal Science: From Improving Dough & Product Quality to Improving Bioavailability of Functional Compounds • Symposium • Atlantic Ballroom 1**

*Scientific Initiatives: Biotechnology & Sustainability, Chemistry & Interactions, Health & Nutrition*

Organizers: Sathya Kalambur, PepsiCo, Plano, TX, U.S.A.; Girish Ganjyal, PepsiCo, Plano, TX, U.S.A.; Andy McPherson, Kraft Foods, Glenview, IL, U.S.A.; Buddhi Lamsal, Iowa State University, Ames, IA, U.S.A.

Moderators: Sathya Kalambur, PepsiCo, Plano, TX, U.S.A.; Buddhi Lamsal, Iowa State University, Ames, IA, U.S.A.

Financial Sponsors: Novozymes, Caravan Ingredients, DSM Food Specialties USA, Inc.

Enzymes have been employed in the grain industry for a myriad of applications, including improving dough machining quality and bread loaf volumes. More recently, they have been used to generate functional compounds and to improve bioavailability of certain functional compounds in whole grains. Although enzymes have been used for a long time, there are still areas where the chemistry and mechanism of enzyme activity have not been fully understood. This symposium will present recent developments that provide more insights into not only the chemistry and mechanism of enzyme action but also the role of enzymes in improving bioavailability of important functional compounds in whole grains.

8:30 a.m. **67-S, CFW 57:A5.** Xylanases in cereal science: From dough syruing to producing prebiotic

- whole grain breads. C. COURTIN (1). (1) KU Leuven, Leuven, Belgium
- 8:50 a.m. **68-S, CFW 57:A5.** Enzymatic modification of wheat and rye brans—Effects on technological and physiological functionality. K. POUTANEN (1). (1) VTT Technical Research Centre of Finland, Espoo, Finland
- 9:10 a.m. **69-S, CFW 57:A5.** Improving functionality and bioavailability of phenolics in wheat bran. R. RUAN (1), P. Chen (1), A. Shi (1), M. Guo (1), K. Petrofsky (1), I. Zhang (1), A. Hohn (1), L. Marquart (1). (1) University of Minnesota, St. Paul, MN, U.S.A.
- 9:30 a.m. **70-S, CFW 57:A5.** Xylanases for improved dough stability and bread quality. M. M. ENGELSEN (1). (1) Novozymes A/S, Bagsvaerd, Denmark
- 9:50 a.m. **71-S, CFW 57:A5.** Novel carbohydrases (including ferulic acid esterase) for fiber extraction, modification, and solubilisation. S. WEST (1). (1) Biocatalysts Inc., Chicago, IL, U.S.A.

**Ingredient Modifications and Interactions • Technical •**

Atlantic Ballroom 3

*Scientific Initiative: Ingredients & Innovations*

Moderator: Eric R. Shinsato, Ingredient, Inc., Westchester, IL, U.S.A.

- 8:30 a.m. **40-O, CFW 57:A22. Young Scientist Research Award** – Hybrid proteins with enhanced functional properties. G. GANJYAL (1), O. Maningat (2). (1) PepsiCo, Plano, TX, U.S.A.; (2) MGP Ingredients, Inc., Atchison, KS, U.S.A.
- 9:10 a.m. **41-O, CFW 57:A24.** Stabilization of starch granules using branching enzyme. S. L. JENSEN (1), O. B. Sørensen (2), A. Blennow (1). (1) University of Copenhagen, Frederiksberg, Denmark; (2) KMC, Brande, Denmark
- 9:30 a.m. **42-O, CFW 57:A21.** Morphological and physicochemical changes in superheated steam processed wheat bran. J. DIAZ (1), F. Hubner (1), M. Noort (1), M. Essers (1), T. Slaghek (1). (1) Dutch Organization for Applied Scientific Research (TNO), Zeist, Netherlands
- 9:50 a.m. **43-O, CFW 57:A23.** Impact of different sodium replacers on structure kinetics and sensory profile of wheat bread. M. T. Jekle (1), M. BECK (1), T. Becker (1). (1) Technische Universität München, Freising, Germany

**Structure–Function Relationships: Protein • Technical •**

Regency Ballroom 1

*Scientific Initiative: Chemistry & Interactions*

Moderators: Jon Faubion, Kansas State University, Manhattan, KS, U.S.A.; Simarata Dhillon, University of Guelph, Guelph, ON, Canada

- 8:30 a.m. **44-O, CFW 57:A22. Protein Division Walter Bushuk Graduate Research Award in Cereal Protein Chemistry Presentation** – Manipulation of zein structure with co-protein addition for application in dough systems: A new approach to functionalize non-gluten cereal proteins. M. FEVZIOGLU (1), B. R. Hamaker (1), O. H.

Campanella (1). (1) Purdue University, West Lafayette, IN, U.S.A.

- 8:50 a.m. **45-O, CFW 57:A23.** Secondary structural changes in hard and soft wheat flours doughs during mixing. S. JAZAERI (1), J. Bock (1), F. Bonomi (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) University of Milan, Milan, Italy
- 9:10 a.m. **46-O, CFW 57:A24.** Establishment of a quantitative structure–function relationship of starch–gluten mixtures and wheat dough during the heating process using DoMiQ. M. JEKLE (1), T. Becker (1). (1) Technische Universität München, Freising, Germany
- 9:30 a.m. **47-O, CFW 57:A23.** Effect of gliadin–glutenin ratio on gluten network formation during thermomolding. K. J. JANSENS (1), B. Lagrain (1), L. Telen (1), N. Vo Hong (1), K. Brijs (1), B. Goderis (1), M. Smet (1), J. A. Delcour (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium
- 9:50 a.m. **48-O, CFW 57:A19.** Kinetics of the formation of amylose–LPC inclusion complexes and their influence on enzymatic digestibility of wheat starch suspensions. S. AHMADI-ABHARI (1), A. Woortman (1), R. Hamer (2), K. Loos (1). (1) University of Groningen, Groningen, Netherlands; (2) Wageningen University, Wageningen, Netherlands

**Whole Grains: Where Are We and Where Are We Going? •**

**Symposium • Regency Ballroom 3**

*Scientific Initiatives: Biotechnology & Sustainability, Engineering & Processing, Food Safety & Regulatory, Health & Nutrition*

Organizers/Moderators: Satya Jonnalagadda, General Mills, Golden Valley, MN, U.S.A.; Len Marquart, University of Minnesota, St. Paul, MN, U.S.A.; Brinda Govindarajan, Kellogg Company, Battle Creek, MI, U.S.A.

Moderators: Satya Jonnalagadda, General Mills, Golden Valley, MN, U.S.A.; Brinda Govindarajan, Kellogg Company, Battle Creek, MI, U.S.A.

Sponsor: Nutrition Division

Financial Sponsors: Cargill, Inc., Matsutani America/ADM, J. Rettenmaier, General Mills, SunOpta Ingredients Group, Kellogg Company

The symposium will examine the current whole grain definition(s) and guidelines, and it will identify the future with regards to universal definitions/guidelines, product application, and health and nutrition research.

- 8:30 a.m. **72-S, CFW 57:A17.** Current state of global whole grain definition and the future of global whole grain foods definition. J. M. JONES (1). (1) St. Catherine University, Arden Hills, MN, U.S.A.
- 8:50 a.m. **73-S, CFW 57:A18.** Whole grain health claims—Current state, what is needed for the future. K. WIEMER (1). (1) General Mills, Minneapolis, MN, U.S.A.
- 9:10 a.m. **74-S, CFW 57:A18.** Current gaps in whole grains health and nutrition research—What are the future needs? P. F. JACQUES (1). (1) Tufts University, Boston, MA, U.S.A.

- 9:30 a.m. **75-S, CFW 57:A18.** Meeting the whole grain dietary guidelines—Are they sustainable given the food supply and current consumer food environment? L. MARQUART (1). (1) University of Minnesota, St. Paul, MN, U.S.A.
- 9:50 a.m. **76-S, CFW 57:A18.** Whole grain food technology—What are the current applications and future considerations? E. ARNDT (1). (1) ConAgra Foods, Inc., Omaha, NE, U.S.A.

### Sessions – Wednesday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

**Session number (1-S) and technical number (1-O)** refer to the Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

#### Impact of Ingredients on Bread Structure and Quality •

**Technical** • Atlantic Ballroom 1

*Scientific Initiative: Chemistry & Interactions*

Moderators: Jayne Bock, University of Guelph, Guelph, ON, Canada; Brian Fatula, DSM Food Specialties USA, South Bend, IN, U.S.A.

- 10:40 a.m. **49-O, CFW 57:A22.** Inhibition of lipase for the stabilization of whole wheat flour during storage using salts commonly found in baking formulations. A. DOBLADO-MALDONADO (1), D. J. Rose (1), E. Arndt (2). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.; (2) ConAgra Food Ingredients Co., Omaha, NE, U.S.A.
- 11:00 a.m. **50-O, CFW 57:A23.** Mapping of yeast metabolites in straight-dough bread making and assessment of their impact on dough properties. V. B. JAYARAM (1), S. Cuyvers (2), K. J. Verstrepen (1), J. A. Delcour (2), C. M. Courtin (3). (1) KU Leuven, Heverlee, Belgium; (2) Katholieke Universiteit Leuven, Leuven, Belgium; (3) Laboratory of Food Chemistry and Biochemistry, Katholieke Universiteit Leuven, Leuven, Belgium
- 11:20 a.m. **51-O, CFW 57:A30.** Effect of endoxylanase addition on whole wheat flour breadmaking properties. L. XU (1), D. J. Rose (1), P. Baenziger (1), M. A. Walter (1), J. Yang (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 11:40 a.m. **52-O, CFW 57:A25.** Effects of salt reduction on gluten hydration, microstructure, and dough rheology in a relation to bread-making. T. MCCANN (1), L. Day (1). (1) CSIRO Animal, Food and Health Sciences, Werribee, VIC, Australia
- 12:00 p.m. **53-O, CFW 57:A21.** Molecular mechanism of bread dough stability improvement by pyranose and glucose oxidase. K. DECAMPS (1), I. J. Joye (1), C. M. Courtin (1), J. A. Delcour (1). (1) Laboratory of Food Chemistry and Biochemistry, Katholieke Universiteit Leuven, Leuven, Belgium

#### Lipids in Baking: Minor Components with Major Impact •

**Symposium** • Atlantic Ballroom 3

*Scientific Initiatives: Chemistry & Interactions, Engineering & Processing, Ingredients & Innovations, Quality & Analytical Methods*

Organizers: Sean Finnie, Cargill, Inc., Plymouth, MN, U.S.A.; Bram Pareyt, KU Leuven, Leuven, Belgium

Moderators: Bram Pareyt, KU Leuven, Leuven, Belgium; Sean Finnie, Cargill, Inc., Plymouth, MN, U.S.A.

This symposium aims at providing a detailed overview of the sources and interactions of lipids in baking. The three main sources of lipids in baking are shortening and oil, emulsifiers, and endogenous wheat flour lipids. The symposium starts with an overview of lipid components and continues with a discussion on oil, shortening processing, and the tools used to monitor efficiencies. An overview of shortening physical and structural characteristics will be presented, followed by the functionality of oil, shortening, and emulsifiers in baking. Endogenous flour lipids will be discussed, emphasizing classification and determination of lipids in wheat flour and an overview of their interactions during bread making. Current trends, challenges, and solutions to meet those trends will be emphasized in the presentations.

- 10:40 a.m. **77-S, CFW 57:A11.** Shortening and oil processing: Tools of the trade. B. JOHNSON (1). (1) Bunge Oils, Bradley, IL, U.S.A.
- 11:00 a.m. **78-S, CFW 57:A11.** Role of fat crystallization in bakery products. P. SMITH (1). (1) Cargill, Global Food Research, Vilvoorde, Belgium
- 11:20 a.m. **79-S, CFW 57:A11.** Functionality of oils and shortenings in baking. S. FINNIE (1), J. Casper (1). (1) Cargill Inc., Plymouth, MN, U.S.A.
- 11:40 a.m. **80-S, CFW 57:A11.** Functionality of emulsifiers in breadmaking. P. KOEHLER (1). (1) German Research Center for Food Chemistry, Freising, Germany
- 12:00 p.m. **81-S, CFW 57:A12.** Endogenous wheat flour lipids and their interactions during breadmaking. B. PAREYT (1), J. A. Delcour (1). (1) KU Leuven, Leuven, Belgium

#### Novel Grain Products• Technical • Regency Ballroom 1

*Scientific Initiative: Engineering & Processing*

Moderators: Debra Patterson, General Mills, Minneapolis, MN, U.S.A.; Sahar Jazaeri, University of Guelph, Guelph, ON, Canada

- 10:40 a.m. **54-O, CFW 57:A20.** Processing and properties of amaranth cake. R. CHEASAGUL (1), H. Huff (1), F. Hsieh (1). (1) University of Missouri-Columbia, Columbia, MO, U.S.A.
- 11:00 a.m. **55-O, CFW 57:A27.** Novel sorghum-based fortified blended food for infants, young children, and adults. N. PADMANABHAN (1), A. Adedjei (1), V. Olson (1), E. Chambers (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 11:20 a.m. **56-O, CFW 57:A26.** The utilisation of wheat, oat, and rice brans into extruded ready-to-eat snacks acceptable for children's diet. N. Mulgrew (1), V. STOJCESKA (1), A. Plunkett (1). (1) Manchester Metropolitan University, Manchester, United Kingdom



- 11:40 a.m. **57-O, CFW 57:A25.** Zein based nano-function-  
alized films: Characterization for mechanical  
and antimicrobial properties. B. LAMSAL (1), D.  
Kadam (1), M. Thunga (1), C. Wang (1), M.  
Kessler (1), D. Grewell (1), C. Yu (1). (1) Iowa  
State University, Ames, IA, U.S.A.
- 12:00 p.m. **58-O, CFW 57:A20.** Production of xylooligosac-  
charide (XOS) coproducts from *Miscanthus x*  
*giganteus*. M. CHEN (1), B. Dien (2), K. Rausch  
(1), M. Tumbleson (1), V. Singh (1). (1) Agricul-  
tural and Biological Engineering, University of  
Illinois at Urbana-Champaign, Urbana, IL,  
U.S.A.; (2) National Center for Agricultural  
Utilization Research, ARS, United States  
Department of Agriculture, Peoria, IL, U.S.A.

**Starch Modification • Symposium •** Regency Ballroom 3  
*Scientific Initiative: Chemistry & Interactions*

Organizers: Baljit Ghotra, National Starch, Bridgewater, NJ,  
U.S.A.; Richard Rogers, Grain Processing Corp., Muscatine,  
IA, U.S.A.

Moderator: Baljit Ghotra, National Starch, Bridgewater, NJ,  
U.S.A.

Sponsor: Carbohydrate Division

Discussion on the new technologies in starch derivitization.

- 10:40 a.m. **82-S, CFW 57:A16.** Influence of granule hydra-  
tion on starch chemical reactivity at the granular  
and molecular levels. K. HUBER (1), C. Hsieh  
(1). (1) University of Idaho, Moscow, ID, U.S.A.
- 11:00 a.m. **83-S, CFW 57:A16.** Amylose inclusion com-  
plexes produced by combining various ligands  
with jet-cooked amylose. F. C. FELKER (1), J.  
A. Kenar (1), J. A. Byars (1), M. Singh (1), S. X.  
Liu (1), G. F. Fanta (1). (1) USDA-ARS NCAUR,  
Peoria, IL, U.S.A.
- 11:20 a.m. **84-S, CFW 57:A16.** Exploring granular architec-  
ture of starches through physical modifications.  
V. VAMADEVAN (1), R. Hoover (2), E. Bertoft  
(1), K. Seetharaman (1). (1) University of Guelph,  
Guelph, ON, Canada; (2) Memorial University of  
Newfoundland, St. John's, NF, Canada
- 11:40 a.m. **85-S, CFW 57:A16.** Preparation, structure, and  
properties of octenylsuccinic starch. Y. Bai (1), Y.  
SHI (1). (1) Kansas State University, Manhattan,  
KS, U.S.A.
- 12:00 p.m. **86-S, CFW 57:A17.** Modification of starch in  
alcohol. A. EVANS (1). (1) Tate and Lyle,  
Hoffman Estates, IL, U.S.A.

**Sessions – Wednesday Afternoon (2:00 – 4:00 p.m.)**

(listed in alphabetical order by title)

**Session number (1-S)** and **poster number (1-P)** refer to the  
Author Index in the program resource book.

**Cereal Foods World (CFW) number** refers to the abstract  
page location within the online searchable abstract document.  
Affiliations are listed as provided by the organizer/presenter.

**Is It Sweet Enough? A Dialogue on Sugar Reduction •**  
**Science Café •** Atlantic Ballroom 1  
*Scientific Initiatives: Chemistry & Interactions, Health &*  
*Nutrition, Ingredients & Innovations*

Organizer: Andrew McPherson, Kraft Foods, Glenview, IL,  
U.S.A.

Moderators: Kris Spence, Kellogg Company, Battle Creek, MI,  
U.S.A.; Andrew McPherson, Kraft Foods, Glenview, IL, U.S.A.

Sponsors: Carbohydrate Division, Nutrition Division

Many food companies, ingredients manufacturers, and regula-  
tory agencies are actively pursuing sugar reduction. This goal of  
this Science Café is to discuss the public health need for sugar  
reduction, ingredients/systems to enable sugar reduction, and  
strategies around sugar reduction. How does food formulation  
help the consumer?

**87-S, CFW 57:A10.**

Carbohydrates and energy metabolism. K. A. GREAVES (1).  
(1) Kellogg Company, Battle Creek, MI, U.S.A.

**88-S, CFW 57:A10.**

Ingredient options for sugar reduction. E. SHINSATO (1). (1)  
Ingredion, Inc., Westchester, IL, U.S.A.

**89-S, CFW 57:A10.**

Holistic approach for effective sugar reduction using high  
potency sweeteners and bulking agents. J. R. BRIDGES (1), A.  
Evans (1). (1) Tate and Lyle, Hoffman Estates, IL, U.S.A.

**90-S, CFW 57:A10.**

Practical considerations in caloric sugar reduction. D.  
VELLUCCI (1), A. McPherson (2), M. Beaver (3), S.  
Ostergaard (2). (1) Kraft Foods, Tarrytown, NY, U.S.A.; (2)  
Kraft Foods, Glenview, IL, U.S.A.; (3) Kraft Foods, East  
Hanover, NJ, U.S.A.

**The New Generation of Professionals: Opportunities and**  
**Challenges in Transitioning from School to Work • Special**  
**Session •** Atlantic Ballroom 3

*Scientific Initiative: Ingredients & Innovations*

Organizers: Rajen Mehta, SunOpta Ingredients Group,  
Chelmsford, MA, U.S.A.; Shane Walker, University of Guelph,  
Guelph, ON, Canada

Moderators: Shane Walker, University of Guelph, Guelph, ON,  
Canada; Juhui Jeong, Kansas State University, Manhattan, KS,  
U.S.A.; Rajen Mehta, SunOpta Ingredients Group,  
Chelmsford, MA, U.S.A.

Sponsors: Student Division, Education Division, Nutrition  
Division

Financial Sponsors: Cargill, Inc., Matsutani America/ADM,  
J. Rettenmaier, SunOpta Ingredients Group

As the food industry prepares for Generation Y and then  
Generation Z, the “net” generations, employers and educators  
will need to clearly communicate their wants and needs and



learn how to exploit the strengths of these new generations that are very comfortable with the use of communications and the Internet—and all the resultant benefits and challenges. Similarly, today's students as future professionals will have to adapt and leverage their unique skills to enhance their contributions in the traditional workplace. In this special session, we will have individuals with diverse viewpoints discuss their group's needs, guidance, and ideas to allow a smooth and productive transition. The audience is encouraged to join in the discussion; please bring your questions and comments!

**91-S, CFW 57:A12.**

The challenge of transitioning the net generation into the professional world. R. MEHTA (1). (1) SunOpta Ingredients Group, Chelmsford, MA, U.S.A.

**92-S, CFW 57:A12.**

How KSU prepares undergraduate and graduate students to be productive professionals in the cereal food industry. D. MAIER (1). (1) Grain Science & Industry, Kansas State University, Manhattan, KS, U.S.A.

**93-S, CFW 57:A12.**

Opportunities for professionals in the cereal science and bakery industry. D. HAYMAN (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

**94-S, CFW 57:A12.**

Opportunities for professionals in the food industry. E. ARNDT (1). (1) ConAgra Foods, Inc., Omaha, NE, U.S.A.

**95-S, CFW 57:A13.** A student's expectations in transitioning from school to work. L. BREWER (1). (1) Kansas State University, Manhattan, KS, U.S.A.

**96-S, CFW 57:A13.**

An international perspective on entering the North American workplace. S. B. WALKER (1). (1) University of Guelph, Guelph, ON, Canada  
Discussion

**Statistical Tools Supporting Food Safety, Regulatory, and Processing • Science Café •** Regency Ballroom 1  
*Scientific Initiatives: Engineering & Processing, Food Safety & Regulatory, Quality & Analytical Methods*

Organizer: Michelle Manderfeld, General Mills, Minneapolis, MN, U.S.A.

Moderators: Michelle Manderfeld, General Mills, Minneapolis, MN, U.S.A.; Terry C. Nelsen, Consultant, Port Byron, ID, U.S.A.

Sponsor: Statistical Advisory Technical Committee

Statistics provide underlying support for many aspects of food development and production. Listen and interact with speakers from industry and government research as they share a variety of statistical tools for food safety risk assessment, managing ingredient costs, labeling compliance, and process monitoring.

**97-S, CFW 57:A17.**

Using statistical models to understand food safety risk. F. HULTING (1), N. Holschuh (1), D. Stefan (1). (1) General Mills, Inc., Minneapolis, MN, U.S.A.

**98-S, CFW 57:A17.**

Labeling compliance: Overage and impact on cost of goods. R. ROBERTSON (1), R. Stackow (1), B. Larkin (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

**99-S, CFW 57:A17.**

Ongoing process monitoring. T. MCKAMEY (1). (1) Silliker, Inc., Madison, WI, U.S.A.

**100-S, CFW 57:A17.**

Measurement close to zero. P. WEHLING (1). (1) General Mills, Inc., Minneapolis, MN, U.S.A.

**101-S, CFW 57:A17.**

Sampling applications in research and quality. T. NELSEN (1). (1) Consultant, Port Byron, ID, U.S.A.



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Great Hall, Westin Diplomat Hotel

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### Poster Schedule

#### Monday, October 1

7:00 – 10:00 a.m. Poster Set-up by Authors  
10:00 a.m. – 7:00 p.m. Posters Available for Viewing  
4:00 – 7:00 p.m. **Beer and Poster Viewing with Exhibits**  
*Student Poster Authors Present (4:00 – 5:00 p.m.)*  
*Poster Authors Present (even-numbered posters, 5:00 – 6:00 p.m.)*

#### Tuesday, October 2

8:00 a.m. – 2:30 p.m. Posters Available for Viewing  
12:00 – 2:15 p.m. **Lunch with the Exhibitors and Poster Viewing**  
*Poster Authors Present (odd-numbered posters, 1:00 – 2:00 p.m.)*  
2:30 – 6:00 p.m. Authors Take Down Posters

### Poster Categories

*(Listed in order of subject matter)*

General (Posters 1–3)  
Analytical Methods – Chemistry (Posters 4–32)  
Biotech (Posters 33–43)  
Non-Starch Carbohydrates (Posters 44–50)  
Protein Chemistry and Dough Properties (Posters 51–69)  
Starch Physico-Chemical Properties (Posters 70–88)  
Starch Structure (Posters 89–100)  
Chemistry – General (Posters 101–115)  
Chemistry and Quality (Posters 116–135)  
Engineering and Processing – Industrial Uses (Posters 136–145)  
Engineering Food from Grain (Posters 146–165)  
Engineering for Wheat Foods (Posters 166–180)  
Food Safety (Posters 181–186)  
Health and Nutrition (Posters 187–213)  
Ingredients and Costs (Posters 214–235)  
Process Optimization (Posters 236–241)  
Agronomic Studies of Cereals (Posters 242–258)

### Poster Titles and Authors

Listed by subject matter and scientific initiatives. Affiliations are listed as provided by the organizer/presenter.

**Cereal Foods World (CFW) number** refers to the abstract page location within the online searchable abstract document.

**PosterTalk** – indicates a poster that is part of a PosterTalk session. See program schedule for PosterTalk days and times.

#### General

- 1-P. CFW 57:A76**  
A measure of minimum technical competence to use in hiring. C. L. WELLER (1). (1) University of Nebraska, Lincoln, NE, U.S.A.
- 2-P. CFW 57:A40**  
Current status and development trend of Asian products in Brazil. Y. CHANG (1). (1) Universidade Estadual de Campinas, Campinas, São Paulo, Brazil
- 3-P. CFW 57:A57**  
The consumption behavior and consumer trends in dried Chinese white noodle in Beijing. R. Liu (1), B. Zhang (1), Y. WEI (1). (1) Institute of Agro-Food Science & Technology, CAAS, Beijing, People's Republic of China

#### Analytical Methods – Chemistry

*Scientific Initiative: Quality & Analytical Methods*

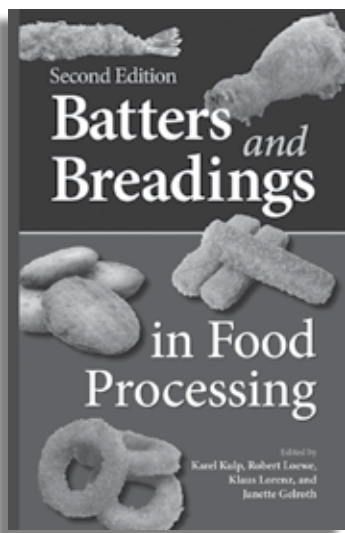
- 4-P. CFW 57:A79**  
Formulating with fiber: Considerations from an analytical perspective. G. ZIELINSKI (1). (1) Covance Laboratories, Madison, WI, U.S.A.
- 5-P. CFW 57:A73**  
Gradual deletions of group-1 chromosome influence the dough strength in common wheat. H. TANAKA (1). (1) Tottori University, Tottori, Japan
- 6-P. CFW 57:A55**  
Application of Raman spectroscopy for detection of aflatoxin in ground corn samples. K. LEE (1). (1) Texas A&M University, College Station, TX, U.S.A.
- 7-P. CFW 57:A40**  
Identification of botanical origin of starches using mass finger printing of starch granule-associated proteins. D. CHO (1), S. Lim (1). (1) Korea University, Seoul, South Korea
- 8-P. CFW 57:A73**  
Collaborative gliadin studies: Intact and hydrolyzed gliadins were detected with low LOQs and good precision. S. TINKEY (1), S. Haas-Lauterbach (2), M. Lacorn (2), U. Immer (2). (1) R-Biopharm Inc., Washington, MO, U.S.A.; (2) R-Biopharm AG, Darmstadt, Germany

- 9-P. CFW 57:A73**  
Measurement of protein hydrolysates by competitive ELISAs: Problems, solutions and limitations. S. TINKEY (1), S. Haas-Lauterbach (2), M. Lacorn (2), and U. Immer (2). (1) R-Biopharm Inc., Washington, MO, U.S.A.; (2) R-Biopharm AG, Darmstadt, Germany
- 10-P. CFW 57:A37**  
A simple rheometer to measure firmness of cooked pasta. K. BONG (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.
- 11-P. CFW 57:A54 WITHDRAWN**
- 12-P. CFW 57:A43**  
Transition to a one world definition of and analytical method for dietary fiber. J. DeVries (1). D. PLANK (1). (1) General Mills Inc., Minneapolis, MN, U.S.A.
- 13-P. CFW 57:A68 – PosterTalk**  
What is the accuracy—can NIR be more accurate than the reference method? An empirical review of global ANN calibrations for whole grain analysis. D. Robey (1), R. Malm (2), C. Janson (2), L. Nørgaard (1), M. HOST (3). (1) Foss Analytical AS, Hillerød, Denmark; (2) Foss, Hoganas, Sweden; (3) FOSS North America, Eden Prairie, MN, U.S.A.
- 14-P. CFW 57:A69**  
Use of a new multitoxin clean-up column and fully stable <sup>13</sup>C-labelled internal standards for multitoxin mycotoxin analysis by LC-MS/MS. A. Schiessl (1), H. Binder (1), E. HAMMER (1), C. Brewé (2), M. Prinster (2), D. Houchins (2). (1) Romer Labs Division Holding GmbH, Tulln, Austria; (2) Romer Labs, Inc., Union, MO, U.S.A.
- 15-P. CFW 57:A50**  
Novel evaluation index for breadmaking performance of bread flour during short-term storage, using ESR spectra. K. Ishigo (1), M. YAMADA (1), K. Sugiyama (1), Y. Kitamura (2), A. Horigane (2). (1) Kogakuin University, Hachioji, Tokyo, Japan; (2) National Food Research Institute, Japan, Tsukuba, Ibaraki, Japan
- 16-P. CFW 57:A60 – PosterTalk**  
New procedure for evaluating pasta-making aptitude of durum wheat semolina. A. MARTI (1), M. D'Egidio (2), J. Dreisoerner (3), K. Seetharaman (4), M. Pagani (1). (1) Università degli Studi di Milano, Milan, Italy; (2) Consiglio per la Ricerca e la Sperimentazione in Agricoltura, Rome, Italy; (3) Brabender GmbH & Co. KG, Duisburg, Germany; (4) University of Guelph, Guelph, ON, Canada
- 17-P. CFW 57:A59 WITHDRAWN**
- 18-P. CFW 57:A44**  
Development of an innovative way to assess durum wheat sample using 6 quality indexes. A. DUBAT (1), S. Moscaritolo (2), L. Simar (1), M. D'Egidio (2). (1) CHOPIN Technologies, Villeneuve la Garenne, France; (2) Agricultural Research Council – Cereal Quality Research Unit, Rome, Italy
- 19-P. CFW 57:A42**  
Evaluation of solvent retention capacity and damaged starch as predictive tools in measuring US HWW flour quality. J. Y. DARLY-KINDELSPIRE (1), P. G. Krishnan (1), K. D. Glover (1). (1) South Dakota State University, Brookings, SD, U.S.A.
- 20-P. CFW 57:A75**  
Analysis of starch damage production in flour streams with the amperometric method. G. VERICEL (1), A. Desverges (1), M. Pawlak (1), S. Geoffroy (1), N. Boinot (1), A. Dubat (1), E. Haudiquert (2), J. Bourgeois (2). (1) CHOPIN Technologies, Villeneuve-la-Garenne, France; (2) Moulins Bourgeois, Verdelot, France
- 21-P. CFW 57:A38**  
Significance of bran particle size on bread-baking quality of whole grain wheat flour. L. CAI (1), J. Hyun (2), K. Kim (2), I. Choi (2), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.; (2) National Institute of Crop Science, RDA, Iksan, Jeonbuk, Korea
- 22-P. CFW 57:A41**  
Significance of starch property and quantity on sponge cake baking quality of soft white wheat. H. CHOI (1), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.
- 23-P. CFW 57:A41**  
Use of dried egg powder in sponge cake baking test and flour-water batter viscosity as an estimate of sponge cake baking quality. H. Choi (1), B. BAIK (1). (1) Washington State University, Pullman, WA, U.S.A.
- 24-P. CFW 57:A62**  
Comparison of resistant starch analyses using different standard methods. S. A. MOORE (1), Y. Ai (1), M. Reed (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.
- 25-P. CFW 57:A54**  
Optimization of Russian bread making test by analytical determination of hydration level. O. Le Brun (1), G. VERICEL (1), A. Dubat (1). (1) Chopin Technologies, Villeneuve-la-Garenne, France
- 26-P. CFW 57:A78**  
A better use of the old technique—Sample preparation for mycotoxin analysis using SPE. M. YE (1), M. Sarker (1), E. Barrey (1), K. Espenschied (1), J. Claus (1). (1) Sigma-Aldrich/Supelco, Bellefonte, PA, U.S.A.
- 27-P. CFW 57:A67 – PosterTalk**  
Research approaches in the development of texture stable multi-components bakery products: A quantitative high-throughput screening system for water migration combined with a predictive model. S. RENZETTI (1), J. A. Voogt (1). (1) TNO, Zeist, Netherlands
- 28-P. CFW 57:A66**  
An assessment of the robustness of enzymatic digests in dietary fiber methods. D. W. PLANK (1), L. M. Musselman (2), J. W. DeVries (1). (1) Medallion Labs / General Mills, Inc., Minneapolis, MN, U.S.A.; (2) General Mills, Inc., Minneapolis, MN, U.S.A.
- 29-P. CFW 57:A65**  
Kernel-to-kernel variation in physicochemical properties of pureline and hybrid rice cultivars. J. PATINDOL (1), Y. Wang (1), B. Grigg (1), T. Siebenmorgen (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.



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**AACCI Central, Exhibit Hall**

Sunday ..... 5:30 p.m. – 7:30 p.m.  
Monday ..... 4:00 p.m. – 7:00 p.m.  
Tuesday ..... 12:00 p.m. – 2:15 p.m.

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Regency Ballroom Foyer**

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Tuesday ..... 9:00 a.m. – 11:00 a.m.  
Wednesday ..... 9:00 a.m. – 11:00 a.m.



#5-2012

- 30-P. CFW 57:A32**  
Phenolic and anthocyanin content of tortillas produced from Mexican blue maize by conventional nixtamalization and extrusion cooking. J. AGUAYO-ROJAS (1), N. Gaxiola-Cuevas (2), S. Mora-Rochin (1), E. Cuevas-Rodriguez (1), S. Serna-Saldivar (3), P. Sanchez-Peña (1), C. Reyes-Moreno (1), J. Milan-Carrillo (1). (1) Programa Regional para el Doctorado en Biotecnología, Universidad Autónoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Maestría en Ciencia y Tecnología de Alimentos, Universidad Autónoma de Sinaloa, Culiacan, Sinaloa, Mexico; (3) Instituto Tecnológico de Monterrey, Monterrey, Nuevo Leon, Mexico
- 31-P. CFW 57:A63**  
Variations of flour amylose content in different milling streams and its effect on soft wheat baking qualities. Z. NISHIO (1), M. Ito (1), T. Tabiki (1), K. Nagasawa (1). (1) National Agricultural Research Center for Hokkaido Region, Hokkaido, Japan
- 32-P. CFW 57:A74**  
Compositional, physical, and wet-milling characteristics of blue corn (*Zea mays* L.). P. URIARTE-ACEVES (1), P. Sánchez-Peña (1), S. Eckhoff (2), C. Reyes-Moreno (1), J. Milán-Carrillo (1). (1) Universidad Autónoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Agricultural Engineering Sciences Building, Urbana, IL, U.S.A.

**Biotech**

*Scientific Initiative: Biotechnology & Sustainability*

- 33-P. CFW 57:A63**  
Effects of temperature and precipitation on hard red spring wheat protein composition. K. NAKAMURA (1), N. Edwards (2). (1) Nisshin Flour Milling Inc., Tsukuba-City Ibaraki, Japan; (2) Canadian Grain Commission, Winnipeg, MB, Canada
- 34-P. CFW 57:A57**  
Impact of water availability on maize quality and ethanol yield. L. Liu (1), S. Yan (2), D. Rogers (1), A. Schlegel (1), F. Lamm (1), N. Klocke (1), D. WANG (1). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) C. W. Brabender Instruments, Inc., South Hackensack, NJ, U.S.A.
- 35-P. CFW 57:A48**  
Investigation to reduce the phytate content of rice flour. H. Han (1), B. KOH (1), J. Baek (2). (1) Department of Food and Nutrition, Keimyung University, Daegu, Korea; (2) Keimyung University, Daegu, Korea
- 36-P. CFW 57:A45**  
Production of gluten-free beers with sorghum malt and adjuncts mashed with different amylolytic enzymes. J. Espinosa-Ramírez (1), E. Perez-Carrillo (1), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico
- 37-P. CFW 57:A68**  
Effect of QTL associated to hardness on protein expression and starch physicochemical properties in quality protein maize. N. Y. SALAZAR-SALAS (1), K. V. Pineda-Hidalgo (1), J. Chávez-Ontiveros (1), R. Gutierrez-Dorado (1), B. A. Larkins (2), J. A. Lopez-Valenzuela (1). (1) Facultad de Ciencias Químico Biológicas, Universidad Autónoma de Sinaloa,



- Culiacán, Sinaloa, Mexico; (2) Department of Plant Sciences, University of Arizona, Tucson, AZ, U.S.A.
- 38-P. CFW 57:A38**  
Physicochemical properties and proteomic analysis of starch granules in maize landraces from Sinaloa, Mexico. L. Calderón-Zamora (1), N. Y. SALAZAR-SALAS (1), K. V. Pineda-Hidalgo (1), J. Chávez-Ontiveros (1), P. Sánchez-Peña (2), C. Reyes-Moreno (1), J. A. Lopez-Valenzuela (1). (1) Facultad de Ciencias Químico Biológicas, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico; (2) Facultad de Agronomía, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 39-P. CFW 57:A48**  
High antioxidant activity mixture from extruded whole quality protein maize and common bean for production of a nutraceutical beverage. R. GUTIÉRREZ-DORDO (1), O. D. Arguelles-López (1), J. J. Rochín-Medina (1), J. Milán-Carrillo (1), J. Basilio-Heredia (2), A. Valdez-Ortiz (1), J. A. López-Valenzuela (1), C. Reyes-Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico; (2) Centro de Investigación en Alimentación y Desarrollo A.C., Culiacán, Sinaloa, Mexico
- 40-P. CFW 57:A65 – PosterTalk**  
Effect of pre-germination process on chemical and physicochemical properties of Thai waxy rice flour and starch. H. PINKAEW (1), O. Naivikul (1). (1) Department of Food Science and Technology, Kasetsart University, Bangkok, Thailand
- 41-P. CFW 57:A66**  
Determining the effects of storage and time on unreacted starch in the dry grind ethanol process. B. PLUMIER (1). (1) University of Illinois, Urbana, IL, U.S.A.
- 42-P. CFW 57:A63**  
Biochemical and kinetic characterization of the digestive trypsin-like activity of the lesser grain borer *Rhyzopertha dominica* (F.). P. OSUNA (1), F. Cinco (1), M. Ezquerro (1), J. Barrón (1), J. Cárdenas (1). (1) University of Sonora, Hermosillo, Sonora, Mexico
- 43-P. CFW 57:A63**  
Influence of genotype and growing location on agronomic quality and nutritional characteristics of kabuli chickpea (*Cicer arietinum* L.) genotypes. M. RAMIREZ SOTO (1), M. Heiras Palazuelos (2), P. Ortega Murrieta (1), R. Salinas Perez (1), I. Padilla Valenzuela (1), L. Partida Ruvalcaba (3). (1) INIFAP, Mexico; (2) Universidad Autonoma de Sinaba, Culiacán, Sinaloa, Mexico; (3) Universidad Autonoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 45-P. CFW 57:A46 – PosterTalk**  
Impact of digestive enzymes on the optimization of in vitro digestion and beta glucan viscosity measurement using Rapid Visco Analyzer. T. H. GAMEL (1), S. M. Tosh (1), E. M. Abdel-Aal (1), N. P. Ames (2). (1) Agriculture & Agri-Food Canada – Guelph Food Research Centre, Guelph, ON, Canada; (2) Agriculture & Agri-Food Canada – Richardson Centre for Functional Foods and Nutraceuticals, Winnipeg, MB, Canada
- 46-P. CFW 57:A51**  
Understanding fructan properties in wheat. Y. JIN (1), M. Kohl (1), Y. Sang (1), G. Lai (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.
- 47-P. CFW 57:A43**  
Super-heated steam processing as a pre-treatment for the isolation of functional arabinoxylans from corn bran. J. DIAZ (1), F. Hubner (1), M. Essers (1), T. Slaghek (1). (1) Dutch Organization for Applied Scientific Research (TNO), Zeist, Netherlands
- 48-P. CFW 57:A45**  
Protein quality of commercial high fiber breakfast cereals consumed in northwestern Mexico. M. FALCON (1), J. Barron (1). (1) University of Sonora, Hermosillo, Sonora, Mexico
- 49-P. CFW 57:A64 – PosterTalk**  
Interactions between hydroxypropylmethyl cellulose of varying degrees of hydroxypropylation and gluten proteins. K. PALMER (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 50-P. CFW 57:A38 – PosterTalk**  
Effect of different amounts of fibres and water on gluten-free doughs and bread properties. C. Cappa (1), M. Lucisano (1), M. MARIOTTI (1). (1) DiSTAM, University of Milan, Milan, Italy

## Protein Chemistry and Dough Properties

### Scientific Initiative: Chemistry & Interactions

- 51-P. CFW 57:A56**  
Studies on the glutaminase modification process of rice glutelin. X. LI (1), Y. Liu (1), J. Yu (1), F. Wang (1), J. Wang (1). (1) Changsha University of Science and Technology, Changsha, People's Republic of China
- 52-P. CFW 57:A76**  
Use of glucose oxidase to improve refrigerated dough quality. K. WHITNEY (1), J. Ohm (2), S. Simsek (3). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) USDA-ARS Wheat Quality Lab, Fargo, ND, U.S.A.; (3) North Dakota State University, Department of Plant Sciences, Fargo, ND, U.S.A.
- 53-P. CFW 57:A61**  
Alfa-amylase/protease-treated wheat gluten: Thermo-rheological properties. A. Mohamed (1), M. S. ALAMRI (1). (1) King Saud University, Riyadh, Saudi Arabia
- 54-P. CFW 57:A73**  
Effects of salt on the rheological properties and structure of the gluten network formed during mixing. H. C. TUHUMURY (1), L. Day (2), D. M. Small (1). (1) RMIT University, Melbourne, VIC, Australia; (2) CSIRO Food and Nutritional Sciences, Werribee, VIC, Australia

## Non-Starch Carbohydrates

### Scientific Initiative: Chemistry & Interactions

- 44-P. CFW 57:A54**  
Isolation and partial characterization of non-starch polysaccharides from quinoa and amaranth grains. L. M. LAMOTHE (1), B. R. Hamaker (2), S. Srichuwong (3). (1) Purdue University, West Lafayette, IN, U.S.A.; (2) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.; (3) Nestle Research Center, Lausanne, Switzerland

- 55-P. CFW 57:A43**  
Analysis of dough and bread crumb structure of pyranose and glucose oxidase supplemented breads. K. DECAMPS (1), I. J. Joye (1), C. M. Courtin (1), J. A. Delcour (1). (1) Laboratory of Food Chemistry and Biochemistry, Katholieke Universiteit Leuven, Leuven, Belgium
- 56-P. CFW 57:A73 WITHDRAWN**
- 57-P. CFW 57:A68**  
Glutenin molecular characterization of three transgenic high molecular weight glutenin subunit events in winter wheat. L. RHAZI (1), T. Aussenac (1), R. Graybosch (2). (1) LaSalle Beavais, Beauvais, France; (2) USDA, Lincoln, NE, U.S.A.
- 58-P. CFW 57:A73**  
Analysis of *Glu-1* deletion lines reveals the importance of high molecular weight glutenin subunits 7+9 at *Glu-B1* in wheat flour tortilla making. Y. E. TUNCIL (1), T. Jondiko (1), M. Tilley (2), D. Hays (1), J. M. Awika (1). (1) Texas A&M University, College Station, TX, U.S.A.; (2) USDA-ARS Center for Grain and Animal Health Research, Manhattan, KS, U.S.A.
- 59-P. CFW 57:A64**  
Effects of phytates on dough and bread characteristics of wheat flour. E. PARK (1), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.
- 60-P. CFW 57:A67 – PosterTalk**  
Importance of fat-dough interactions in sheeted dough products. S. RENZETTI (1), A. Jurgens (1). (1) TNO, Zeist, Netherlands
- 61-P. CFW 57:A71**  
Implications of non-covalent interactions in zein-starch dough and bread quality. B. M. Smith (1), S. R. Bean (1), M. TILLEY (1), S. Yan (2), F. Aramouni (3). (1) USDA-ARS Center for Grain and Animal Health Research, Manhattan, KS, U.S.A.; (2) C. W. Brabender Inc., South Hackensack, NJ, U.S.A.; (3) Kansas State University, Food Science Institute, Manhattan, KS, U.S.A.
- 62-P. CFW 57:A45 WITHDRAWN**
- 63-P. CFW 57:A47**  
Mechanical properties of guava seed (*Psidium guajava*) proteins isolate in wheat dough and loaf bread. N. GUEMES VERA (1), K. Perez Rocha (1), S. Soto Simental (1), J. Hernandez-Urbe (1), G. Lopez-Huape (1), A. Bernardino-Nicanor (2). (1) Universidad Autonoma del Estado de Hidalgo, Tulancingo, Mexico; (2) Instituto Tecnológico de Celaya, Celaya Guanajuato, Mexico
- 64-P. CFW 57:A58**  
Development of a standard test for dough-making properties of oat cultivars. D. LONDONO (1), M. J. Smulders (1), L. J. Gilissen (2), R. Hamer (3). (1) Wageningen University and Research Centre, Plant Breeding, Wageningen, Netherlands; (2) Wageningen University and Research Centre, Bioscience, Wageningen, Netherlands; (3) Wageningen University and Research Centre, Food Technology, Wageningen, Netherlands
- 65-P. CFW 57:A75**  
Effect of bread dough storage conditions on the properties of  $\beta$ -glucans extracted from bread under in vitro conditions. A. VATANDOUST (1), S. Ragaei (1), S. M. Tosh (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Agriculture and Agri-Food Canada, Guelph, ON, Canada
- 66-P. CFW 57:A33 WITHDRAWN**
- 67-P. CFW 57:A51**  
Effect of reduced sodium salt in bread baking. J. JEONG (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 68-P. CFW 57:A39**  
Improvement of bread-making properties of waxy wheat. R. Caramanico (1), P. Vaccino (1), G. Bottega (2), A. Marti (2), L. Fongaro (3), M. Lucisano (3), A. PAGANI (2). (1) CRA-SCV, S. Angelo Lodigiano (LO), Italy; (2) Università degli Studi di Milano, Milan, Italy; (3) DiSTAM (Dipartimento di Scienze e Tecnologie Alimentari e Microbiologiche), Università degli Studi di Milano, Milan, Italy
- 69-P. CFW 57:A41**  
Comparisons of relationship and variance of rheological properties of gluten, dough and batter systems with baking properties. P. CHOMPOORAT (1), P. Rayas-Duarte (1). (1) Oklahoma State University, Stillwater, OK, U.S.A.

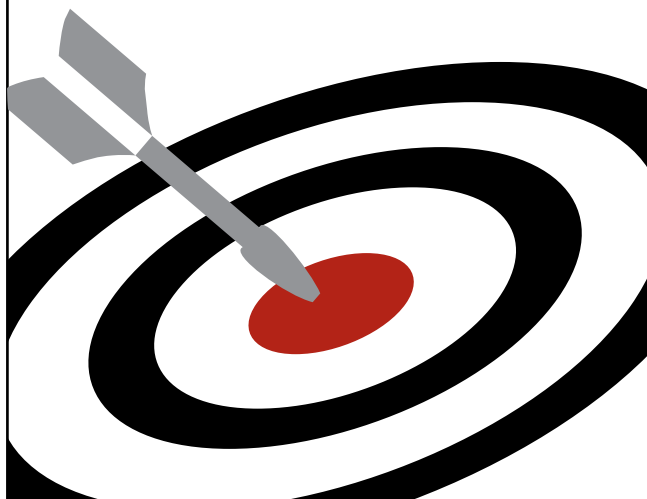
## Starch Physico-Chemical Properties

### Scientific Initiative: Chemistry & Interactions

- 70-P. CFW 57:A57**  
Changes of amylase and some nutrients of polished rice with the germ left intact during germination. Y. LIU (1), X. Li (1), J. Yu (1), F. Wang (1), J. Wang (1). (1) Changsha University of Science and Technology, Changsha, People's Republic of China
- 71-P. CFW 57:A34**  
Effects of brans from specialty sorghum varieties on in vitro starch digestibility of soft and hard sorghum endosperm porridges. D. L. AUSTIN (1), L. Rooney (2). (1) Novozymes North America, Franklinton, NC, U.S.A.; (2) Texas A&M, College Station, TX, U.S.A.
- 72-P. CFW 57:A34**  
A model system to understand phenolic compounds effect on in vitro starch digestibility in the presence of zein protein. D. L. AUSTIN (1), L. Rooney (2). (1) Novozymes North America, Franklinton, NC, U.S.A.; (2) Texas A&M, College Station, TX, U.S.A.
- 73-P. CFW 57:A57 – PosterTalk**  
Physicochemical properties of bran starches and endosperm starches of soft wheat grown in Michigan. Y. LIU (1), P. Ng (1). (1) Michigan State University, East Lansing, MI, U.S.A.
- 74-P. WITHDRAWN**
- 75-P. CFW 57:A79**  
Preparation and characterization of aqueous CoQ<sub>10</sub>-starch dispersions: Effect of preparative conditions on dispersion stability and yield. H. YOON (1), T. Seo (1), S. Lim (1). (1) Korea University, Seoul, South Korea
- 76-P. CFW 57:A34**  
Effects of chemical and enzymatic modifications on the formation of amylose-stearic acid complex. E. O. ARIJAJE (1), Y. Wang (1), U. Shah (1), A. Proctor (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

- 77-P. **CFW 57:A41**  
Effect of hydroxypropylmethylcellulose (HPMC) on mechanical properties of corn starch gel. S. CHOI (1), E. Lee (1). (1) Samsung Fine Chemicals, Incheon, South Korea
- 78-P. **CFW 57:A74**  
Combined impact of amylases and surfactants on wheat starch pasting properties. B. Van Steertegem (1), B. PAREYT (1), K. Brijs (1), J. A. Delcour (1). (1) KU Leuven, Heverlee, Belgium
- 79-P. **CFW 57:A71**  
Effect of corn bran particle size and substitution on pasting characteristics of wheat flour. M. SINGH (1), S. X. Liu (1), S. Vaughn (1). (1) USDA-ARS NCAUR, Peoria, U.S.A.
- 80-P. **CFW 57:A50**  
Impact of granular and molecular reaction patterns on the physical properties of starch modified within a model reaction system. J. HONG (1), K. C. Huber (1). (1) University of Idaho, Moscow, ID, U.S.A.
- 81-P. **CFW 57:A58**  
<sup>1</sup>H NMR and DSC studies of water mobility in dough system containing barley flour. Z. LU (1), S. Ragaei (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada
- 82-P. **CFW 57:A52**  
Effect of heat moisture treatment under mild acidic conditions on the physicochemical properties and digestibility of potato starch. J. KIM (1), K. C. Huber (1). (1) University of Idaho, Moscow, ID, U.S.A.
- 83-P. **CFW 57:A37 – PosterTalk**  
Roles of alpha-amylase and amyloglucosidase in vitro resistant starch test. L. R. Brewer (1), L. Cai (2), Y. SHI (1). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Washington State University, Pullman, WA, U.S.A.
- 84-P. **CFW 57:A69**  
Characterization of native and modified sweet potato starch for its physicochemical, thermal, and pasting properties. D. C. SAXENA (1), C. Saini (1). (1) Sant Longowal Institute of Engineering & Technology, Longowal, Sangrur, Punjab, India
- 85-P. **WITHDRAWN**
- 86-P. **CFW 57:A42**  
Modification of starch using cold plasma technology. M. T. P. S. Clerici (1), C. S. Lambert (2), Y. K. CHANG (3). (1) College of Nutrition, Federal University of Alfenas, MG, Brazil; (2) “Gleb Wataghin” Physics Institute, State University of Campinas, Campinas, SP, Brazil; (3) Department of Food Technology, College of Food Engineering, State University of Campinas, Campinas, SP, Brazil
- 87-P. **CFW 57:A59**  
Rheological properties of rice gels: Influence of the amylose content and of the thermal history. M. MARIOTTI (1), M. Lucisano (1). (1) DiSTAM, University of Milan, Milan, Italy
- 88-P. **CFW 57:A60**  
Starch properties affecting water absorption of rice flour. J. MATSUKI (1), T. Okunishi (1), H. Okadome (1), K. Tokuyasu (1). (1) National Food Research Institute, Tsukuba, Ibaraki, Japan

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## Starch Structure

### Scientific Initiative: Chemistry & Interactions

- 89-P. CFW 57:A33**  
Exploiting iodine vapor as a tool to characterize the structure of millets starches. G. ANNOR (1), K. Seetharaman (2), M. Marcone (1), E. Bertoft (1). (1) University of Guelph, Guelph, ON, Canada; (2) Department of Food Science, University of Guelph, Guelph, ON, Canada
- 90-P. CFW 57:A74 – PosterTalk**  
Is amylopectin internal structure a predictor of starch thermal properties? V. VAMADEVAN (1), E. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada
- 91-P. CFW 57:A53**  
Nanoparticle preparation from waxy maize starch using acid hydrolysis combined with ultrasonic treatment. H. KIM (1), S. Lim (1). (1) Korea University, Seoul, South Korea
- 92-P. CFW 57:A32**  
Properties of starch from soft waxy wheat varieties. S. AL-DHARER (1), L. Copeland (1). (1) University of Sydney, Sydney, NSW, Australia
- 93-P. CFW 57:A52 – PosterTalk**  
Molecular structure of starch in developing wheat endosperm. D. N. KALINGA (1), E. Bertoft (1), R. Yada (1), K. Seetharaman (1). (1) Department of Food Science, University of Guelph, Guelph, ON, Canada
- 94-P. CFW 57:A32**  
Thermal properties of maize starch: Structure and biosynthesis of its amylopectin. E. AGAMA-ACEVEDO (1), O. L. Rosales-Reynoso (1), S. Evangelista-Lozano (1). (1) CEROTI-IPN, Yauatepec, Morelos, Mexico
- 95-P. CFW 57:A52**  
Granular architecture and molecular structure of pericarp starch from wheat. D. N. KALINGA (1), R. N. Waduge (1), E. Bertoft (1), R. Yada (1), K. Seetharaman (1). (1) Department of Food Science, University of Guelph, Guelph, ON, Canada
- 96-P. CFW 57:A49**  
Molecular structure of starch in dwarf rice and sorghum grains. J. HASJIM (1), D. J. Besnard (1), A. Reeve (1), C. J. Lambrides (2), R. G. Gilbert (1). (1) The University of Queensland, Centre for Nutrition and Food Sciences, Queensland Alliance for Agriculture and Food Innovation, Brisbane, Australia; (2) The University of Queensland, School of Agriculture and Food Sciences, Brisbane, Australia
- 97-P. CFW 57:A49 – PosterTalk**  
Time evolution of starch molecular and crystalline structures during in vitro and in vivo digestion of raw and cooked starch/grains. J. HASJIM (1), A. Teng (1), T. Witt (1), Z. Syahariza (1), M. J. Gidley (1), R. G. Gilbert (1). (1) The University of Queensland, Centre for Nutrition and Food Sciences, Queensland Alliance for Agriculture and Food Innovation, Brisbane, Australia
- 98-P. CFW 57:A75**  
The molecular organization of large and small granules from developing wheat starches. R. N. Waduge (1), E. BERTOFT (2), K. Seetharaman (2). (1) Department of Food Science, University of

Guelph, Guelph, ON, Canada; (2) University of Guelph, Guelph, ON, Canada

- 99-P. CFW 57:A45**  
Quantitative approach to study secondary structural changes in protein in the dough state leads to understand the structure-function relationship. M. FEVZIOGLU (1), B. R. Hamaker (1), O. H. Campanella (1). (1) Purdue University, West Lafayette, IN, U.S.A.
- 100-P. CFW 57:A51**  
Thermal and functional properties of acha (*Digitaria* spp.) starch. M. Jordaan (1), V. JIDEANI (1). (1) Cape Peninsula University of Technology, Bellville, South Africa

## Chemistry – General

### Scientific Initiative: Chemistry & Interactions

- 101-P. CFW 57:A71**  
A structural snapshot into the inhibition of barley limit dextrinase by the barley limit dextrinase inhibitor in turn controlled by thioredoxin with relevance in brewing. B. SVENSSON (1), M. S. Moeller (1), J. M. Jensen (1), M. B. Vester-Christensen (1), P. Hågglund (1), A. Henriksen (2), M. Abou Hachem (1). (1) Enzyme and Protein Chemistry, Department of Systems Biology, Technical University of Denmark, Lyngby, Denmark; (2) Protein Chemistry Group, Carlsberg Laboratory, Valby Copenhagen, Denmark
- 102-P. CFW 57:A53 – PosterTalk**  
Characterization of oat storage proteins. K. S. KUE-NKAMP (1), P. Koehler (1). (1) German Research Center for Food Chemistry, Freising, Germany
- 103-P. CFW 57:A36**  
Distribution of total carotenoids and its composition among diverse cereal grain varieties and their fractions determined by spectrophotometry and HPLC. T. BETA (1), V. U. Ndolo (2). (1) University of Manitoba, Winnipeg, MB, Canada
- 104-P. CFW 57:A72**  
Determination of gallic acid in model systems comprised of either gluten protein or corn starch. Z. TACER CABA (1), D. Nilufer Erdil (1), P. K. Ng (2). (1) Istanbul Technical University, Food Engineering Department, Maslak, Istanbul, Turkey; (2) Michigan State University, Department of Food Science & Human Nutrition, East Lansing, MI, U.S.A.
- 105-P. CFW 57:A44**  
Changes in lipids and selected B vitamins in whole wheat flour during 1 y of storage. E. E. Engstrom (1), A. F. Doblado-Maldonado (2), D. J. Rose (2), M. L. DUNN (1). (1) Brigham Young University, Provo, UT, U.S.A.; (2) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 106-P. CFW 57:A72 – PosterTalk**  
Identification of polyphenolics from different morphological parts of sorghum by UPLC-PDA-MS/MS. V. M. TALEON (1), L. Dykes (1), W. L. Rooney (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.
- 107-P. CFW 57:A77**  
Stability of sorghum based pigments to thermal degradations. L. YANG (1), L. Dykes (1), J. M. Awika (1).



- (1) Department of Soil & Crop Sciences, Texas A&M University, College Station, TX, U.S.A.
- 108-P. CFW 57:A61 – PosterTalk**  
Effect of different contents and molecular weights of condensed tannins from grain sorghum (*Sorghum bicolor* [L.] Moench) on the enzyme activity of human salivary and porcine pancreatic alpha amylases. N. MKANDAWIRE (1), C. L. Weller (1), D. S. Jackson (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 109-P. CFW 57:A43 – PosterTalk**  
Comparison of phenolics in refined and whole-grain flours of white, light, medium, and dark red soft wheat varieties. S. DHILLON (1), L. Duizer (1). (1) University of Guelph, Guelph, ON, Canada
- 110-P. CFW 57:A31**  
Phytochemical analysis and hydrophilic antioxidant capacity of nejayote-fractions obtained after lime-cooking of white maize. B. A. ACOSTA-ESTRADA (1), J. A. Gutierrez-Urbe (2), S. O. Serna-Saldivar (1). (1) ITESM, Monterrey, Mexico; (2) Instituto Tecnológico de Monterrey, Monterrey, Mexico
- 111-P. CFW 57:A46**  
Process mapping and quality characteristics of baked instant noodles. V. GAWUGA (1), K. Seetharaman (1), L. Duizer (1). (1) University of Guelph, Guelph, ON, Canada
- 112-P. CFW 57:A40**  
Optimization of flavonoids and saponins extraction from black bean (*Phaseolus vulgaris* L.) seed coat. R. CHAVEZ-SANTOSCOY (1). (1) ITESM, Monterrey, Mexico
- 113-P. CFW 57:A50 WITHDRAWN**
- 114-P. CFW 57:A75**  
Effect of immature yellow pea on chemical composition and amino acid content of pea flours. N. WANG (1), M. Edney (1). (1) Canadian Grain Commission, Winnipeg, MB, Canada
- 115-P. CFW 57:A72**  
Deposition of extracted solubles on surface of cooked rice increases with amount of cooking water. M. TAMURA (1), T. Nagai (1), Y. Hidaka (2), T. Noda (2), M. Yokoe (2), Y. Ogawa (1). (1) Chiba University, Matsudo, Japan; (2) Institute of Agricultural Machinery, Saitama, Japan
- (3) Texas A&M University, College Station, TX, U.S.A.; (4) University of Manitoba, Winnipeg, MB, Canada
- 119-P. CFW 57:A47**  
Functional properties of wheat, *Lupinus* and *Jathropa* protein concentrate mixtures. N. GUEMES VERA (1), H. Lopez-Lopez (2), A. Totosaus-Sanchez (2). (1) Universidad Autonoma del Estado de Hidalgo, Tulancingo, Mexico; (2) Instituto de Estudios Superiores de Ecatepec, Edo. de Mexico, Mexico
- 120-P. CFW 57:A46**  
Effects of wheat bran color and particle size on whole wheat bread baking quality. G. GARCIA-GONZALEZ (1), E. Schlepp (1), S. Simsek (2). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) Department of Plant Sciences, North Dakota State University, Fargo, ND, U.S.A.
- 121-P. CFW 57:A32**  
Optimization of the roasting process for preparing instant amaranth (*Amaranthus hypochondriacus* L.) flours with high antioxidant activity. I. A. Almanza (1), J. X. PERALES SÁNCHEZ (1), R. Gutiérrez Dorado (1), S. Mora Rochín (1), J. Milán Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 122-P. CFW 57:A68**  
Effect of fermentation time on antioxidant activity and total phenolic content of chickpea (*Cicer arietinum* L.). L. M. Sánchez Magaña (1), M. L. GUZMÁN URIARTE (1), E. O. Cuevas Rodriguez (1), R. Gutiérrez Dorado (1), M. Reyes Bastidas (1), A. Valdez Ortiz (1), J. Milán Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 123-P. CFW 57:A48**  
Solid state fermentation of maize (*Zea mays* L.): Effect of fermentation time on antioxidant activity. M. L. GUZMÁN URIARTE (1), L. M. Sánchez Magaña (1), E. O. Cuevas Rodriguez (1), S. Mora Rochín (1), A. Valdez Ortiz (1), R. Gutiérrez Dorado (1), J. Milán Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 124-P. CFW 57:A48**  
Nutraceutical fermented common bean (*Phaseolus vulgaris* L.) flour with high antioxidant activity. M. L. GUZMÁN URIARTE (1), L. M. Sánchez Magaña (1), E. O. Cuevas Rodriguez (1), S. Mora Rochín (1), A. Valdez Ortiz (1), J. Milán Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 125-P. CFW 57:A54**  
Perception of sensory properties of phenolic acids during repeated consumption. A. Lanfried (1), K. SEETHARAMAN (1), L. Duizer (1). (1) University of Guelph, Guelph, ON, Canada
- 126-P. CFW 57:A68**  
Effect of extrusion process on antioxidant activity and total phenolic content in mixtures from extruded whole grains for producing nutraceutical beverages. J. ROCHÍN MEDINA (1), R. Guetiérrez Dorado (1), E. Cuevas Rodriguez (1), J. Milán Carrillo (1), S. Mora Rochín (1), A. Valdez Ortiz (1), J. López Valenzuela (1). (1) Programa Regional del Noroeste para el

## Chemistry and Quality

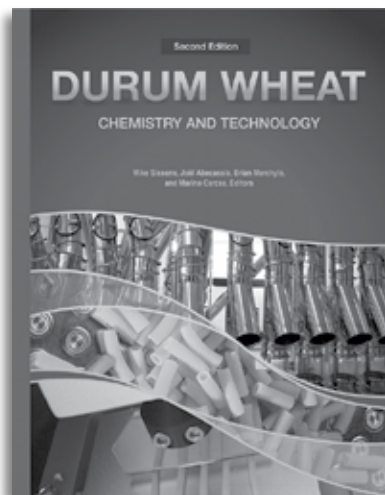
### Scientific Initiative: Chemistry & Interactions

- 116-P. CFW 57:A59 WITHDRAWN**
- 117-P. CFW 57:A65**  
Flour from wheat cultivars of varying hardness affects textural and structural properties of semi-sweet biscuits. A. Pauly (1), B. PAREYT (1), M. Lambrecht (1), E. Fierens (1), J. A. Delcour (1). (1) KU Leuven, Heverlee, Belgium
- 118-P. CFW 57:A40**  
The relationship between sorghum and maize bran ferulic acid and diferulic acids with grain hardness. C. CHIREMBA (1), J. R. Taylor (2), L. W. Rooney (3), T. Beta (4). (1) ARC Grain Crops Institute, Potchefstroom, South Africa; (2) Department of Food Science, University of Pretoria, Hatfield, South Africa;



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#3-2012

Doctorado en Biotecnología, Facultad de Ciencias Químico Biológicas, Universidad Autónoma de Sinaloa (FCQB-UAS), Culiacán, Sinaloa, Mexico

- 127-P. CFW 57:A49**  
Antioxidant potential and phytochemicals content of desi chickpea (*Cicer arietinum* L.) cultivars. M. HEIRAS PALAZUELOS (1), M. Ochoa Lugo (1), P. Manjarrez Sandoval (2), R. Gutierrez Dorado (1), J. Garzon Tiznado (1), J. Milan Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autonoma de Sinaloa, Culiacán, Sinaloa, Mexico; (2) Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Culiacán Sinaloa, Mexico
- 128-P. CFW 57:A41**  
Effects of substituting oat flour on sugar-snap cookie quality. I. CHOI (1), C. Kang (1), K. Kim (1), S. Shin (1), Y. Kim (1), H. Kim (1), K. Lee (1), J. Hyun (1), K. Kim (1). (1) National Institute of Crop Science, RDA, Iksan, Korea
- 129-P. CFW 57:A64 WITHDRAWN**
- 130-P. CFW 57:A62**  
Relationships between variety of rice and apparent viscosity of cooking water. T. NAGAI (1), M. Tamura (1), Y. Hidaka (2), T. Noda (2), M. Yokoe (2), Y. Ogawa (1). (1) Chiba University, Matsudo, Japan; (2) Institute of Agricultural Machinery, Saitama, Japan
- 131-P. CFW 57:A55**  
Quality characteristics and diastatic power of barley cultivars related to enzymatic activity in malt. M. LEE (1), J. Park (1), Y. Kim (1), T. Kim (1), J. Choi (1), K. Kim (1), H. Kim (2). (1) National Institute of Crop Science, Rural Development Administration, Iksan, Jeollabuk-do, Korea; (2) Department of Environmental & Chemical Engineering, Seonam University, Namwon-si, Jeollabuk-do, Korea
- 132-P. CFW 57:A61**  
Quality characteristics and shelf life of millet-incorporated breads. M. MCSWEENEY (1), V. Hema (2), D. Malathi (3), K. Seetharaman (1). (1) University of Guelph, Hamilton, ON, Canada (2) Indian Institute of Crop Processing Technology, Thanjavur, India; (3) Tamil Nadu Agricultural University, Coimbatore, India
- 133-P. CFW 57:A33**  
Effects of water addition, vacuum mixing, and wheat classes on the translucency and color of Chinese dumpling wraps. D. AN (1), E. Assefaw (1), B. Fu (2). (1) Canadian International Grains Institute, Winnipeg, MB, Canada; (2) Canadian Grain Commission, Winnipeg, MB, Canada
- 134-P. CFW 57:A79**  
The relationship between noodle color and kernel quality property of wheat. Y. ZHANG (1), B. Zhang (1), Y. Wei (1), X. Zhang (1). (1) Institute of Agro-Food Science & Technology, CAAS, Beijing, People's Republic of China
- 135-P. CFW 57:A47**  
Technological and nutraceutical properties of Mexican blue maize. N. GAXIOLA-CUEVAS (1), J. Aguayo-Rojas (2), S. Mora-Rochin (2), E. Cuevas-Rodriguez (2), H. Perez-Uriarte (3), P. Sanchez-Peña (2), C. Reyes-Moreno (2), J. Milan-Carrillo (2). (1) Maestria en Ciencia y Tecnologia de Alimentos, Universidad

Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Programa Regional para el Doctorado en Biotecnología, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (3) Licenciatura en Ingeniería Bioquímica, Facultad de Ciencias Químico Biológicas, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

## Engineering & Processing – Industrial Uses

*Scientific Initiative: Engineering & Processing*

- 136-P. CFW 57:A58**  
Design of tray ration containers based on finite element analysis. J. LIU (1), J. Yu (1), G. Nie (1), G. Zhao (1). (1) Quartermaster Equipment Institute, Dongcheng District, People's Republic of China
- 137-P. CFW 57:A42**  
The role of barley starch structure in the production of sugars in wort. S. CHU (1), J. Hasjim (2), K. Redd (3), G. Fox (1), R. G. Gilbert (2). (1) University of Queensland, Brisbane, QLD, Australia; (2) University of Queensland, Centre for Nutrition and Food Sciences, Queensland Alliance for Agriculture and Food Innovation, Brisbane, QLD, Australia; (3) University of Tasmania, Hobart, TAS, Australia
- 138-P. CFW 57:A55**  
Characterization of corn and duckweed starch for bioethanol production. C. LEE (1), H. Yangcheng (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.
- 139-P. CFW 57:A67**  
Effect of treated effluent water on hydrolysis and fermentation for cellulosic ethanol production. D. RAMCHANDRAN (1), K. Rajagopalan (2), T. J. Strathmann (1), V. Singh (1). (1) University of Illinois, Urbana-Champaign, Urbana, IL, U.S.A.; (2) Illinois Sustainable Technology Center, Champaign, IL, U.S.A.
- 140-P. CFW 57:A39**  
Accelerated fouling rates of synthetic thin stillage. R. K. CHALLA (1), Y. Zheng (1), D. Johnston (2), M. Tumbleson (1), V. Singh (1), K. D. Rausch (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.; (2) Eastern Regional Research Center, Wyndmoor, PA, U.S.A.
- 141-P. CFW 57:A79 – PosterTalk**  
Effects of insoluble solids content on evaporator fouling during thin stillage concentration. Y. ZHENG (1), R. K. Challa (1), D. Johnston (2), V. Singh (1), M. E. Tumbleson (1), K. D. Rausch (1). (1) University of Illinois at Urbana-Champaign, Champaign, IL, U.S.A.; (2) Eastern Regional Research Center, USDA-ARS, Wyndmoor, PA, U.S.A.
- 142-P. CFW 57:A62**  
Cold starch hydrolysis of corn and barley with different amylose contents towards bioethanol production. S. NAGULESWARAN (1), T. Vasanthan (1), D. Bressler (1), R. Hoover (2). (1) University of Alberta, Edmonton, AB, Canada; (2) Memorial University of Newfoundland, St. John's, NF, Canada
- 143-P. CFW 57:A67**  
Benchmarking residual starch analysis of distillers' grains with solubles (DDGS). D. K. Reed (1), L. A. Goonewardene (2), T. Vasanthan (1), D. Bressler (1), S. NAGULESWARAN (1). (1) University of Alberta, Edmonton, AB, Canada; (2) Alberta Agriculture and

Rural Development, Edmonton, AB, Canada

- 144-P. CFW 57:A67**  
Evaluation of alkaline pre-treatment of residual starch determination methods in distillers' grains with solubles (DDGS). D. K. Reed (1), T. Vasanthan (1), D. Bressler (1), S. NAGULESWARAN (1). (1) University of Alberta, Edmonton, AB, Canada
- 145-P. CFW 57:A31**  
Utilization of sorghum co-product (DDGS) in aquatic feed production. A. A. ADEDEJI (1), Z. Yangen (2), A. Davis (2), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Auburn University, Auburn, AL, U.S.A.

## Engineering Food from Grain

*Scientific Initiative: Engineering & Processing*

- 146-P. CFW 57:A78**  
Response surface optimization of extraction parameters of DPPH free radical scavenging components from cherry seed. D. YAO (1), L. Guo (1), S. Wang (1), F. Xu (1). (1) Huaihai Institute of Technology, Lianyungang, People's Republic of China
- 147-P. CFW 57:A37**  
Impact of soaking and steaming conditions on breakage susceptibility of parboiled brown rice. J. Buggenhout (1), I. Celus (1), K. Brijis (1), J. A. DELCOUR (1). (1) Katholieke Universiteit Leuven, Heverlee, Belgium
- 148-P. CFW 57:A35**  
Innovative technology with high food safety standard to produce a new family of healthy and convenient food products based on partial germination of pulses and grains. S. BELLAIO (1), E. Zamprogna Rosenfeld (1), M. Jacobs (2), S. Kappeler (1), S. Basu (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler GmbH, Braunschweig, Germany; (3) Buhler (India) Pvt. Ltd., Pune, India
- 149-P. CFW 57:A50**  
Effect of storage conditions of high moisture corn on dry matter loss and dry grind fermentation characteristics H. HUANG (1), M. Danao (1), V. Singh (1), W. Liu (1), L. Xu (1), S. R. Eckhoff (1). (1) University of Illinois, Urbana-Champaign, IL, U.S.A.
- 150-P. CFW 57:A60**  
Effect of thermal processing on the chemical and functional properties of whole yellow pea flour. H. MASKUS (1), K. Wang (2), L. Bourre (1), S. Arntfeld (2), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada; (2) University of Manitoba, Winnipeg, MB, Canada
- 151-P. CFW 57:A43**  
Flow properties of semolina and whole wheat flour fortified with flaxseed flour during pasta processing. E. DE LA PENA (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.
- 152-P. CFW 57:A53**  
Effect of pre-treatment with tempering and high hydrostatic pressure on the properties of dry milled rice flour. B. KOH (1), J. Cho (2), H. Han (1). (1) Department Food and Nutrition, Keimyung University, Daegu, Korea; (2) Department of Functional Crop, National Institute of Crop Science, Milyang, Korea

- 153-P. CFW 57:A69**  
Effect of barley bagasse, feed moisture, and barrel temperature on the extrusion of corn grits. D. M. Santos (1), E. C. Silva (2), C. W. CARVALHO (3), J. L. Ascheri (3), C. Y. Takeiti (3), D. P. Ascheri (1). (1) Universidade Estadual de Goiás, Anapolis, Brazil; (2) Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, Brazil; (3) Embrapa Food Technology, Rio de Janeiro, Brazil
- 154-P. CFW 57:A39**  
Effect of micronized sugar cane bagasse and water content on the extrusion of rice flour. R. S. Casaes (1), E. C. Silva (2), C. W. CARVALHO (3), M. C. Mattos (3), M. C. Galdeano (3), V. M. Calado (1). (1) Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; (2) Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, Brazil; (3) Embrapa Food Technology, Rio de Janeiro, Brazil
- 155-P. CFW 57:A60**  
Effect of thermal treatments on rice flour and cooking behavior of rice Pasta. A. MARTI (1), R. Caramanico (2), G. Bottega (1), M. Pagani (1). (1) Università degli Studi di Milano, Milan, Italy; (2) CRA-SCV, S. Angelo Lodigiano (LO), Italy
- 156-P. CFW 57:A53**  
Effects of soy protein isolate, calcium carbonate, and pregelatinized wheat starch on oil uptake and texture of soy based snacks. S. KODAVALI (1), K. Adhikari (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 157-P. CFW 57:A47**  
Physical differences between baked and extruded pet foods. M. GIBSON (1), G. Aldrich (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 158-P. CFW 57:A32**  
Novel sorghum based bean like product—bean analog. A. A. ADEDEJI (1), M. Joseph (1), B. Plattner (2), E. Maichel (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Wenger Manufacturing Co., Sabetha, KS, U.S.A.
- 159-P. CFW 57:A35**  
Milling and functional properties of co-mingled rice cultivars. N. N. BASUTKAR (1), B. C. Grigg (1), T. Siebenmorgen (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.
- 160-P. CFW 57:A49**  
Effect of optimized extrusion cooking process on antioxidant and antimutagenic activities of pigmented desi chickpea (*Cicer arietinum* L.). M. HEIRAS PALAZUELOS (1), M. Ochoa Lugo (1), J. Rochin Medina (1), F. Delgado Vargas (1), P. Manjarrez Sandoval (2), J. Milan Carrillo (1), J. Garzon Tiznado (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico; (2) Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Culiacán Sinaloa, Mexico
- 161-P. CFW 57:A74**  
Comparison of wet-milling properties of yellow, white, and blue corn genotypes. P. URIARTE-ACEVES (1), P. Sánchez-Peña (1), S. Eckhoff (2), C. Reyes-Moreno (1), J. Milán-Carrillo (1). (1) Universidad Autónoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Agricultural Engineering Sciences Building, Urbana, IL, U.S.A.
- 162-P. CFW 57:A33**  
Effect of hermetic storage of maize grains on the characteristics of nixtamalized corn flour. G. ARAMBULA VILLA (1), J. Jimenez Juárez (2), M. Leon Cabrera (2), R. M. Badillo Barrera (1), E. Gutierrez Arias (1). (1) CINVESTAV-IPN Queretaro, Queretaro, Qro., Mexico; (2) Instituto Tecnológico Superior de la Region Sierra, Teapa, Tab., Mexico
- 163-P. CFW 57:A52 WITHDRAWN**
- 164-P. CFW 57:A36**  
Novel anthograin instant noodles from purple wheat. T. BETA (1), W. Li (1). (1) University of Manitoba, Winnipeg, MB, Canada
- 165-P. CFW 57:A57**  
Preparation and partial characterization of corn starch-pectin microparticles. Y. LIU (1), H. Wang (1), M. J. Kerrigan (1), W. S. Ratnayake (1), R. A. Flores (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

## Engineering for Wheat Foods

### Scientific Initiative: Engineering & Processing

- 166-P. CFW 57:A44 – PosterTalk**  
Distribution and composition of fractions of commercial whole wheat flours separated by sieving. A. F. DOBLADO-MALDONADO (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 167-P. CFW 57:A44**  
Production of whole wheat flour on a laboratory scale. A. F. DOBLADO-MALDONADO (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 168-P. CFW 57:A72 – PosterTalk**  
Interactions between anthocyanins and cereal ingredients during extrusion. Z. TACER CABA (1), D. Nilufer Erdil (1), M. Boyacioglu (2), P. K. Ng (3). (1) Istanbul Technical University, Food Engineering Department, Maslak, Istanbul, Turkey; (2) Doruk Group Holding, Istanbul, Turkey; (3) Michigan State University, Department of Food Science & Human Nutrition, East Lansing, MI, U.S.A.
- 169-P. CFW 57:A35**  
The effect of speed differential on the particle size distribution from first break roller milling of wheat. R. BELL (1), G. Campbell (1). (1) University of Manchester, Manchester, United Kingdom
- 170-P. CFW 57:A46**  
Developing the compositional breakage equation using FTIR spectroscopy to characterise wheat components and milled fractions. S. P. GALINDEZ-NAJERA (1), F. Warren (2), G. Campbell (1). (1) The University of Manchester, Manchester, United Kingdom; (2) King's College London, London, United Kingdom
- 171-P. CFW 57:A63**  
Effects of extrusion on physicochemical and functional properties of washed wheat bran. G. NYOMBAIRE (1), P. K. W. Ng (1). (1) Michigan State University, East Lansing, MI, U.S.A.
- 172-P. CFW 57:A33**  
Effect of soy flour addition on rheological properties of weak, medium, and strong wheat flour. D. Arduzlar Kagan (1), H. DOGAN (2), M. Boyacioglu (3). (1) Department of Food Engineering, Yeditepe



University, Istanbul, Turkey; (2) Department of Grain Science and Industry, Kansas State University, Manhattan, KS, U.S.A.; (3) Cereal Foods Institute, Doruk Group, Istanbul, Turkey

- 173-P. CFW 57:A77**  
Differentiating wheat flour by farinograph with its concave restraining lid. S. YAN (1), S. Iaquez (1), J. Faubion (2). (1) C. W. Brabender Instruments Inc., South Hackensack, NJ, U.S.A.; (2) Kansas State University, Manhattan, KS, U.S.A.
- 174-P. CFW 57:A59 WITHDRAWN**
- 175-P. CFW 57:A61**  
Modeling of tempering effects on wheat at first break. P. Mitchell (1), H. DOGAN (1), R. Miller (1). (1) Kansas State University, Manhattan, KS, U.S.A.
- 176-P. CFW 57:A64**  
Improving waxy wheat flour yield and quality. K. PALMER (1), M. Khamis (1), H. Dogan (2). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) Department of Grain Science & Industry, Kansas State University, Manhattan, KS, U.S.A.
- 177-P. CFW 57:A34**  
Influences of mill type on baking properties and lipid oxidation of whole grain wheat flour during storage. B. BAIK (1), P. Fuerst (1), T. Harris (1), E. Wegner (2), S. Fulton (3). (1) Washington State University, Pullman, WA, U.S.A.; (2) USDA-ARS Western Wheat Quality Laboratory, Pullman, WA, U.S.A.; (3) Unifine Flour LLC, Arlington, WA, U.S.A.
- 178-P. CFW 57:A70**  
Use of a high temperature tandoor oven for production of white wheat naan with enhanced nutrition, sensory traits, and shelf life. K. M. SHAH (1), P. G. Krishnan (1), J. Y. Darly-Kindelspire (1), K. Glover (1), W. Berzonski (1). (1) South Dakota State University, Brookings, SD, U.S.A.
- 179-P. CFW 57:A51**  
Use of dynamic tests to determine the effects of sodium reduction on dough rheology and its correlation with tortilla quality. T. JONDIKO (1), Y. E. Tuncil (1), A. Puerta-Gomez (1), E. M. Castell-Perez (1), J. M. Awika (1). (1) Texas A&M University, College Station, TX, U.S.A.
- 180-P. CFW 57:A39**  
Bread crumb quality: Correlation between bread crumb structure, texture, and bread volume. L. CATO (1). (1) Department of Agriculture and Food WA, South Perth, Australia

**Food Safety**

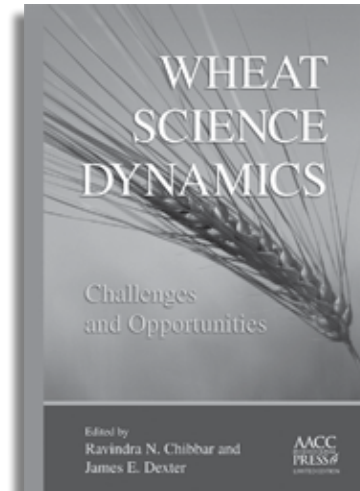
*Scientific Initiative: Food Safety & Regulatory*

- 181-P. CFW 57:A48**  
Gluten detection with a next generation of monoclonal antibody. E. HAMMER (1), H. Binder (1), A. Schiessl (1), M. Prinster (2), C. Brewé (2), D. Houchins (2), E. Welker (2). (1) Romer Labs Division Holding GmbH, Tulln, Austria; (2) Romer Labs, Inc., Union, MO, U.S.A.
- 182-P. CFW 57:A58**  
Predictive determination for aflatoxin B<sub>1</sub> pollution. D. LIU (1), H. Tan (1), C. Xie (1), H. Cao (1), D. Yao (1). (1) Ji-Nan University, Guangzhou City, People's Republic of China



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- 183-P. CFW 57:A79 – PosterTalk**  
Improvement of the food safety of partially germinated grains. E. Zamprogna Rosenfeld (1), S. BELLAIO (1), M. Jacobs (2), S. Basu (3), S. Kappeler (1). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler GmbH, Braunschweig, Germany; (3) Buhler (India) Pvt. Ltd., Pune, India
- 184-P. CFW 57:A70**  
Quantifying gluten in beer samples with a competitive ELISA format—second generation. M. SIMMONS (1), S. Haas-Lauterbach (2), M. Richter (2), U. Immer (2). (1) R-Biopharm Inc., Washington, MO, U.S.A.; (2) R-Biopharm AG, Darmstadt, Germany
- 185-P. CFW 57:A69**  
Effect of damage caused by *Fusarium avenaceum* on durum wheat quality. L. SCHLICHTING (1), B. Fu (1), M. S. Izydorczyk (1), T. Graefenham (1). (1) Canadian Grain Commission, Winnipeg, MB, Canada
- 186-P. CFW 57:A75**  
Validation of shorter enrichment time for *Salmonella enterica* subsp. *enterica* in peanut butter samples followed by a rRNA detection system. S. VERMA (1), M. Ye (2), E. Barrey (2), J. Claus (2), U. Luoca (3), J. Siegrist (1). (1) Sigma-Aldrich/Fluka, Bellefonte, PA, U.S.A.; (2) Sigma-Aldrich/Supelco, Bellefonte, PA, U.S.A.; (3) Scanbec GmbH, Wolfen, Germany
- 187-P. CFW 57:A76**  
Effect of flavonoids from corn silk on hemorheological changes in mice induced by high-fat diet. J. WANG (1), Y. Liu (2), C. Li (2), J. Yu (2), F. Wang (2), X. Li (2), Y. Li (3). (1) Changsha University of Science and Technology/Supernatural Biotechnology Co., Ltd., Changsha, People's Republic of China; (2) Changsha University of Science and Technology, Changsha, People's Republic of China; (3) Supernatural Biotechnology Co., Ltd., Changsha, People's Republic of China
- 188-P. CFW 57:A77**  
Regulation of obesity and lipid disorders by ethanolic extract from black rice in high-fat diet induced obese rats. D. XIA (1), S. Ji (1), S. Zhao (1), B. Chen (1), K. Chen (1), H. Li (1). (1) Zhejiang Chinese Medical University, Hangzhou, People's Republic of China
- 189-P. CFW 57:A45**  
Genistein detoxifies acetaminophen-induced hepatic toxicity via the potential impact on activation of UDP-glucuronosyltransferase pathway. Y. FAN (1), L. Zhang (1), P. Li (1), S. Lu (1), M. Cui (1), H. Yu (1). (1) Hefei University of Technology, Hefei, People's Republic of China
- 190-P. CFW 57:A47**  
Nutraceutical beverage from germinated amaranth (*Amaranthus hypochondriacus* L.) flour with high antioxidant activity and protein content. M. A. Gómez Favela (1), J. X. Perales Sánchez (1), J. Milán Carrillo (1), G. Romero Navarro (1), S. Mora Rochín (1), R. GUTIÉRREZ DORADO (1), C. Reyes Moreno (1). (1) Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, Mexico
- 191-P. CFW 57:A70 – PosterTalk**  
Low-calorie bread with charred cellulose granules/wheat flour and elimination of toxic dye (xanthene) in alimentary canal by charred cellulose granules. M. SEGUCHI (1), A. Tabara (1). (1) Kobe Women's University, Kobe, Japan
- 192-P. CFW 57:A36**  
Impact of wheat bran on regularity: 80 years of research. A. BIRKETT (1), L. Sanders (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.
- 193-P. CFW 57:A78 – PosterTalk**  
Ability of specific dietary fibers to normalize the gut microbiota in obese states. J. YANG (1), D. J. Rose (1), I. Martinez (1), J. Walter (1), A. Keshavarzian (2). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.; (2) Rush University Medical Center, Chicago, IL, U.S.A.
- 194-P. CFW 57:A78**  
*In vitro* fermentation of selected whole grains using fecal microbiota from obese and normal weight individuals. J. YANG (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- 195-P. CFW 57:A62**  
High antioxidant capacity beverage based on extruded amaranth (*Amaranthus hypochondriacus*) flour. A. MONTOYA-RODRIGUEZ (1), C. Reyes-Moreno (1), R. Gutiérrez-Dordo (1), S. Mora-Rochín (1), J. Milán-Carrillo (1). (1) Universidad Autónoma de Sinaloa, Culiacan, Sinaloa, Mexico
- 196-P. CFW 57:A39**  
Effects of inulin-type fructans addition before and after extrusion cooking process on sensory acceptance and glycemic response of corn snacks. V. D. CAPRILES (1), J. G. Arêas (2). (1) Universidade Federal de São Paulo, Sao Paulo, Brazil; (2) Universidade de São Paulo, São Paulo, Brazil
- 197-P. CFW 57:A56**  
Flavor properties, phenolic profiles and antioxidant capacity of glabrous canaryseed. W. Li (1), Y. Qiu (1), T. BETA (1). (1) University of Manitoba, Winnipeg, MB, Canada
- 198-P. CFW 57:A63**  
Barley is a truly ancient grain with modern relevance to health. C. W. NEWMAN (1). (1) Newman Associates Inc., Bozeman, MT, U.S.A.
- 199-P. CFW 57:A35**  
Glycemic response of healthy rats fed with cereals bars. L. A. BELLO-PEREZ (1), R. G. Utrilla-Coello (1), P. Osorio-Diaz (1). (1) CEPROBI-IPN, Yautepec, Morelos, Mexico
- 200-P. CFW 57:A60**  
Millet-incorporated bread and its significance for persons with type 2 diabetes. M. MCSWEENEY (1), V. Hema (2), D. Malathi (3), K. Seetharaman (1). (1) University of Guelph, Hamilton, ON, Canada; (2) Indian Institute of Crop Processing Technology, Thanjavur, India; (3) Tamil Nadu Agricultural University, Coimbatore, India
- 201-P. CFW 57:A55 – PosterTalk**  
Identification of an  $\alpha$ -glucosidase control point for modulating initial high glycemic response from starch digestion. B. LEE (1), B. R. Hamaker (1), B. L. Nichols (2). (1) Whistler Center for Carbohydrate Research,

- Purdue University, West Lafayette, IN, U.S.A.; (2) USDA-ARS/Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, U.S.A.
- 202-P. CFW 57:A71 – PosterTalk**  
Natural polyphenols are potential inhibitors of intestinal maltase-glucoamylase (ct-MGAM subunit) for control of glucose release from starch digestion. M. SIMSEK (1), R. Quezada-Calvillo (2), B. L. Nichols (3), B. R. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.; (2) Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico; (3) USDA, Children's Nutrition Research Center and Department of Pediatrics, Baylor College of Medicine, Houston, TX, U.S.A.
- 203-P. CFW 57:A56 – PosterTalk**  
Mammalian mucosal  $\alpha$ -glucosidases may have a role in starch digestion beyond  $\alpha$ -glucogenesis to assist  $\alpha$ -amylase of granular starch digestion. A. LIN (1), S. Dhital (2), B. L. Nichols (3), M. Gidley (2), B. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.; (2) University of Queensland, QLD, Australia; (3) USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, U.S.A.
- 204-P. CFW 57:A52 – PosterTalk**  
Influence of bioprocessing on structure and properties of rye bran and subsequent in vitro conversions of phenolic compounds and in vivo bioavailability. K. KATINA (1), A. Aura (1), J. Lappi (2), H. Mykkänen (2), K. Poutanen (1). (1) VTT, Espoo, Finland; (2) University of Eastern Finland, Kuopio, Finland
- 205-P. CFW 57:A36 – PosterTalk**  
Comparative fermentation of insoluble carbohydrates in an in vitro human faeces model spiked with *L. acidophilus* NCFM. A. BLENNOW (1), A. Knudsen (1), G. C. van Zanten (1), S. L. Jensen (1), S. Forssten (2), M. Saarinen (2), S. Lahtinen (2), O. B. Sørensen (3), L. Jespersen (1), B. Svensson (4). (1) University of Copenhagen, Frederiksberg, Denmark; (2) Danisco Sweeteners Oy, Kantvik, Finland; (3) KMC Amba, Brande, Denmark; (4) Technical University of Denmark, Lyngby, Denmark
- 206-P. CFW 57:A55**  
Effect of whole grains on markers of systemic inflammation. M. Lefevre (1), S. JONNALAGADDA (2). (1) Utah State University, Logan, UT, U.S.A.; (2) General Mills Inc., Golden Valley, MN, U.S.A.
- 207-P. CFW 57:A32**  
Digestion and potential colon health benefits of octenyl succinic starch. Y. AI (1), B. M. Nelson (1), D. F. Birt (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.
- 208-P. CFW 57:A74 – PosterTalk**  
Effect of breakfast cereals with varying doses of oat fiber on appetite and satiety. J. VAN KLINKEN (1), C. J. Rebello (2), W. D. Johnson (2), M. O'Shea (1), A. Kurilich (1), F. L. Greenway (2). (1) Quaker, Barrington, IL, U.S.A.; (2) Pennington Biomedical Research Center, Baton Rouge, LA, U.S.A.
- 209-P. CFW 57:A49 – PosterTalk**  
Consumption of wheat bran modified by autoclaving reduces plasma glucose and increases lean body mass at the expense of fat mass in hamsters. S. Harding (1), H. SAPIRSTEIN (2), T. Rideout (1), C. Marinangeli (1), P. Jones (1). (1) Richardson Centre for Functional Foods & Nutraceuticals, University of Manitoba, Winnipeg, MB, Canada; (2) Department of Food Science, University of Manitoba, Winnipeg, MB, Canada
- 210-P. CFW 57:A77**  
Substrate preference of human colonic bacteroides strains on cereal arabinoxylans with distinct structures. H. Xu (1), E. Martens (2), B. Reuhs (1), B. HAMAKER (3). (1) Purdue University, West Lafayette, IN, U.S.A.; (2) University of Michigan Medical School, Ann Arbor, MI, U.S.A.; (3) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.
- 211-P. CFW 57:A38 – PosterTalk**  
Enzymatically modified gluten by amino acid binding on whole wheat flour for preparation of gluten-reduced breads for celiac disease treatment. A. M. CALDERÓN DE LA BARCA (1), A. R. Islas-Rubio (1), F. Cabrera-Chavez (2), N. G. Heredia-Sandoval (1). (1) CIAD, A.C., Hermosillo, Sonora, Mexico; (2) Freelance, Hermosillo, Sonora, Mexico
- 212-P. CFW 57:A71 – PosterTalk**  
Whole grain consumption, body mass index, and body composition in older Australian women. V. A. SOLAH (1), D. A. Kerr (1), X. Meng (1), C. W. Binns (1), Z. Zhu (2), A. Devine (3), R. L. Prince (2). (1) School of Public Health, Curtin Health Innovation Research Institute, Curtin University of Technology, Perth, WA, Australia; (2) School of Medicine and Pharmacology, University of Western Australia, Department of Endocrinology and Diabetes, Sir Charles Gairdner Hospital, Perth, WA, Australia; (3) School of Exercise, Biomedical and Health Science, Edith Cowan University, Perth, WA, Australia
- 213-P. CFW 57:A69**  
Novel wheat bran and extracts with enhanced nutrient and bioactive properties. H. SAPIRSTEIN (1), A. K. Madapathage Dona (1). (1) University of Manitoba, Department of Food Science, Winnipeg, MB, Canada

## Ingredients and Costs

### Scientific Initiative: Ingredients & Innovations

- 214-P. CFW 57:A35**  
Innovative healthy ingredients from controlled partial germination of cereals and pulses for food applications. S. BELLAIO (1), E. Zamprogn Rosenfeld (1), S. Kappeler (1), M. Jacobs (2), S. Basu (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler GmbH, Braunschweig, Germany; (3) Buhler (India) Pvt. Ltd., Pune, India
- 215-P. CFW 57:A61**  
Pasta products with potato flakes. A. Moiseeva (1), I. V. MOISEEV (2), N. K. Kazenova (1), D. V. Shneider (1), I. V. Kazenov (1). (1) Moscow State University of Technology & Management, Moscow, Russia; (2) Pulmuone Foods USA, Anaheim, CA, U.S.A.
- 216-P. CFW 57:A70**  
Effect of different wheat dietary fibre sources on sensory properties of pre-baked pizzas. S. Shiozawa (1), C. J. STEEL (1). (1) University of Campinas, Campinas, São Paulo, Brazil

- 217-P. CFW 57:A59**  
Effect of the addition of different fat blends formulated using an artificial neural network on the physical properties of pan bread. A. L. Marangoni (1), D. Barrera-Arellano (1), C. J. STEEL (1). (1) University of Campinas, Campinas, São Paulo, Brazil
- 218-P. CFW 57:A66**  
Barley flour as a potential ingredient in wheat bread. S. RAGAE (1), A. Vtandoust (1), G. O'Hara (2), R. Tyler (3), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Parrheim Foods, P&H Milling Group, Saskatoon, SK, Canada; (3) University of Saskatchewan, Saskatoon, SK, Canada
- 219-P. CFW 57:A66 WITHDRAWN**
- 220-P. CFW 57:A46 WITHDRAWN**
- 221-P. CFW 57:A78**  
Effect of hemicellulase on physical properties of whole wheat flour cake formulations. Y. Yavas (1), D. Boyacioglu (1), M. BOYACIOGLU (2). (1) Istanbul Technical University, Department of Food Engineering, Istanbul, Turkey; (2) Doruk Group Holding, Istanbul, Turkey
- 222-P. CFW 57:A56**  
Applying chicory root inulin to improve nutritional, functional, and processing properties of whole wheat tortilla dough. C. LIN (1). (1) Sensus America Inc., Lawrenceville, NJ, U.S.A.
- 223-P. CFW 57:A62**  
Protein-free and gluten-free bakery premixes. A. Moiseeva (1), I. V. Moiseev (2), N. K. KAZENOVA (1), D. V. Shneider (1), I. V. Kazenov (1). (1) Moscow State University of Technology & Management, Moscow, Russia; (2) Pulmuone Foods, Anaheim, CA, U.S.A.
- 224-P. CFW 57:A54**  
Effect of sodium selenite addition on selenomethionine generation during production of yeast-leavened sponge breads. M. Lazo-Vélez (1), V. A. Gutiérrez-Díaz (1), A. Ramírez-Medrano (1), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico
- 225-P. CFW 57:A40**  
Investigating on the effects of phosphate salts on the cooking properties and textural stability of whole wheat pasta. C. CHANG (1), G. Hou (2), L. Zhou (3). (1) Anhui Agricultural University, Hefei, People's Republic of China; (2) Wheat Marketing Center, Portland, OR, U.S.A.; (3) ICL Performance Products LP, Webster Groves, MO, U.S.A.
- 226-P. CFW 57:A56**  
Effect of hydrocolloids on the quality of rice dumpling skin. E. LIM (1), S. Choi (1), E. Lee (1). (1) Samsung Fine Chemicals, Incheon, Korea
- 227-P. CFW 57:A70 – PosterTalk**  
Effect of different sprouting conditions on  $\alpha$ -amylase activity and functional properties in wheat. S. SHAFQAT (1), J. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada
- 228-P. CFW 57:A63 WITHDRAWN**
- 229-P. CFW 57:A37**  
Development of gluten-free brown bread utilizing brown hybrid sorghum. S. E. BOSWELL (1), K. Michaelsen (1), V. Taleon (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.
- 230-P. CFW 57:A51**  
Saltiness potentiation response in white bread by substituting sodium chloride with soy fermentation flavor enhancer. L. A. JIMÉNEZ-MAROTO (1), T. Sato (2), S. A. Rankin (1). (1) Department of Food Science, University of Wisconsin-Madison, Madison, WI, U.S.A.; (2) Kikkoman USA R&D Laboratory, Inc., Madison, WI, U.S.A.
- 231-P. CFW 57:A45**  
Effect of fiber enrichment level and fiber particle size on the extrusion properties of split yellow pea flour. P. FROHLICH (1), G. Boux (1), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada
- 232-P. CFW 57:A37**  
Influence of milling method on the physical and functional properties of yellow pea flour used in cookies. L. BOURRE (1), H. Maskus (1), R. DeStefano (1), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada
- 233-P. CFW 57:A65**  
Development of gluten free crepes with enhanced food functionality, nutritional traits, and consumer appeal. K. P. PATEL (1), P. G. Krishnan (1), J. Y. Darly-Kindelspire (1), M. Singh (2). (1) South Dakota State University, Brookings, SD, U.S.A.; (2) USDA-ARS NCAUR, Peoria, IL, U.S.A.
- 234-P. CFW 57:A37**  
Use of pulse ingredients to develop healthier baked products. G. BOUX (1), A. Bellido (1), L. Malcolmson (1), P. Frohlich (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada
- 235-P. CFW 57:A58**  
Konjac glucomannan and its derivative enhance the quality, cell structure, and moisture balance of bread. D. LIU (1), H. Yan (1), J. Lan (1), B. Ke (1), H. Corke (2), F. Jiang (1). (1) Hubei University of Technology, Wuhan, People's Republic of China; (2) The University of Hong Kong, People's Republic of China

## Process Optimization

### Scientific Initiative: Engineering and Processing

- 236-P. CFW 57:A76**  
Response surface methodology for the optimization of polished germ-retained rice germination. F. WANG (1), Y. Liu (1), J. Yu (1), X. Li (1), J. Wang (1), J. Wu (1). (1) Changsha University of Science and Technology, Changsha, People's Republic of China
- 237-P. CFW 57:A54**  
Study on dietary fiber extracted from bean curd residue by enzymic method. H. LAI (1), G. Su (1), W. Su (1), C. Zhou (1), S. Zhang (2), S. Shou (2). (1) Jimei University/Food Science and Technology Development Test Center, Xiamen, People's Republic of China; (2) Jimei University, Xiamen, People's Republic of China
- 238-P. CFW 57:A38**  
Optimization of structure, quality, and sensory acceptance of gluten-free bread enriched with inulin-type fructans using response surface methodology. V. D. CAPRILES (1), J. G. Arêas (2). (1) Universidade Federal de São Paulo, Sao Paulo, Brazil; (2) Universidade de São Paulo, São Paulo, Brazil



**239-P. CFW 57:A58**  
Prediction of AACCC 10-11.01: “Baking Quality of Bread Flour—Sponge-Dough, Pound-Loaf Method” with AACCC 54-60.01: “Determination of Rheological Behavior” as a function of mixing and temperature increase in wheat flour and whole wheat meal. C. LOUBERSAC D’HOTEL (1), O. Le Brun (1), L. Simar (1), G. Vericel (1). (1) CHOPIN Technologies, Villeneuve-la-Garenne, France

**240-P. CFW 57:A56**  
Development of laboratory-scale method of producing whole wheat saltine crackers. J. LI (1), G. G. Hou (2), A. Chung (2), Z. Chen (1). (1) School of Food Science and Technology, State Key Lab of Food Science and Technology, Jiangnan University, Wuxi, People’s Republic of China; (2) Wheat Marketing Center, Portland, OR, U.S.A.

**241-P. CFW 57:A72 WITHDRAWN**

### **Agronomic Studies of Cereals**

#### *Scientific Initiative: Biotechnology and Sustainability*

**242-P. CFW 57:A36 – PosterTalk**  
Sulphur application alters gluten functional characteristics and protein structure in Ontario soft wheats. J. E. BOCK (1), S. Jazaeri (1), P. Johnson (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) OMAFRA, Stratford, ON, Canada

**243-P. CFW 57:A34**  
Effects of salt stress and Ca<sup>2+</sup> treatments on  $\gamma$ -aminobutyric acid accumulation in germinated foxtail millet (*Setaria italica* L.). Q. BAI (1), Y. Han (1), J. Shi (1), Z. Gu (1). (1) Nanjing Agricultural University, Nanjing, People’s Republic of China

**244-P. CFW 57:A42 – PosterTalk**  
Improving the nitrogen response of UK wheat varieties. G. A. CHOPE (1), S. P. Penson (1), Y. Wan (2), M. J. Hawkesford (2), P. R. Shewry (2). (1) Campden BRI, Chipping Campden, United Kingdom; (2) Rothamsted Research, Harpenden, United Kingdom

**245-P. CFW 57:A78 – PosterTalk**  
Polysaccharide composition of triticale produced in the Great Plains of the USA. J. YANG (1), P. Baenziger (1), D. J. Rose (1). (1) University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

**246-P. CFW 57:A53 – PosterTalk**  
Soft wheat grain quality in United States germplasm. A. M. KISZONAS (1), P. Fuerst (2), C. F. Morris (3). (1) USDA-ARS/Washington State University, Pullman, WA, U.S.A.; (2) Washington State University, Pullman, WA, U.S.A.; (3) USDA-ARS Western Wheat Quality Laboratory, Pullman, WA, U.S.A.

**247-P. CFW 57:A76 – PosterTalk**  
Advances in quality property improvement and study of winter wheat in China. Y. WEI (1), B. Zhang (1), E. Guan (1), G. Zhang (2), Y. Zhang (1). (1) Institute of Agro-Food Science & Technology, CAAS, Beijing, People’s Republic of China; (2) College of Agronomy, Northwest A&F University, Shaanxi, People’s Republic of China

**248-P. CFW 57:A44**  
Change in carotenoid content and oxidative stress during grain development of durum wheat. M.

DOBRYDINA (1), S. Dash (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.

**249-P. CFW 57:A50 WITHDRAWN**

**250-P. CFW 57:A77 WITHDRAWN**

**251-P. CFW 57:A64 – PosterTalk**  
Distribution of B-vitamins & enzymes in newly developed spring wheats. I. PASHA (1), F. M. Anjum (1), F. Saeed (2), M. Rohi (1). (1) National Institute of Food Science & Technology, University of Agriculture, Faisalabad, Punjab, Pakistan; (2) Department of Food Science, Government College University, Faisalabad, Punjab, Pakistan

**252-P. CFW 57:A51**  
Vitamin E and  $\beta$ -carotene contents in Korean wheat varieties. B. Jeong (1), I. Choi (2), C. Kang (2), J. Hyun (2), K. Kim (2), J. CHUN (1). (1) Suncheon National University, Suncheon, Korea; (2) National Institute of Crop Science, Iksan, Korea

**253-P. CFW 57:A31**  
Differences in anthocyanin composition of blue and purple wheat lines grown at three sites in Saskatchewan. E. M. ABDELAAL (1), P. Hucl (2), J. Shipp (3), I. Rabalski (1). (1) Agriculture and Agri-Food Canada, Guelph, ON, Canada; (2) University of Saskatchewan, Saskatoon, SK, Canada; (3) Health Canada, Ottawa, ON, Canada

**254-P. CFW 57:A41**  
Influence of allelic variations of glutenin and puroindoline on flour composition, dough rheology and quality of white salted noodles from Korean wheat cultivars. I. CHOI (1), C. Kang (1), Y. Cheong (2), J. Hyun (1), K. Kim (1), C. Park (3). (1) National Institute of Crop Science, RDA, Iksan, Jeonbuk, Korea; (2) International Maize and Wheat Improvement Center (CIMMYT), Texcoco, Mexico; (3) Department of Crop Science and Biotechnology, Chonbuk National University, Jeonju, Korea

**255-P. CFW 57:A66**  
Effect of fungicide treatment on functionality of wheat flour. S. Ragaee (1), G. CHANDI (1), H. Ma (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

**256-P. CFW 57:A60**  
Grain hardness properties of maize hybrids and open pollinated varieties grown under high and low soil nitrogen conditions. K. MASHINGAIDZE (1), C. Chiremba (1). (1) ARC Grain Crops Institute, Potchefstroom, South Africa

**257-P. CFW 57:A65**  
Nonlinear quality modeling of Eastern Canadian winter wheat. L. N. PIETRZAK (1), E. Neves (2), S. Matwin (2), B. Baum (1), I. Parisien (1), J. Gale (1). (1) Agriculture and Agri-Food Canada, Ottawa, ON, Canada; (2) University of Ottawa, Faculty of Science, Ottawa, ON, Canada

**258-P. CFW 57:A42 – PosterTalk**  
Adapting to the new Brazilian wheat quality resolutions. J. L. DE ALMEIDA (1), R. Gerber (2), J. Bressiani (3). (1) Fundacao Agraria de Pesquisa Agropecuaria (FAPA), Guarapuava, Brazil; (2) Moinho Agraria, Guarapuava, Brazil; (3) Cooperativa Agraria Agroindustrial, Guarapuava, Brazil

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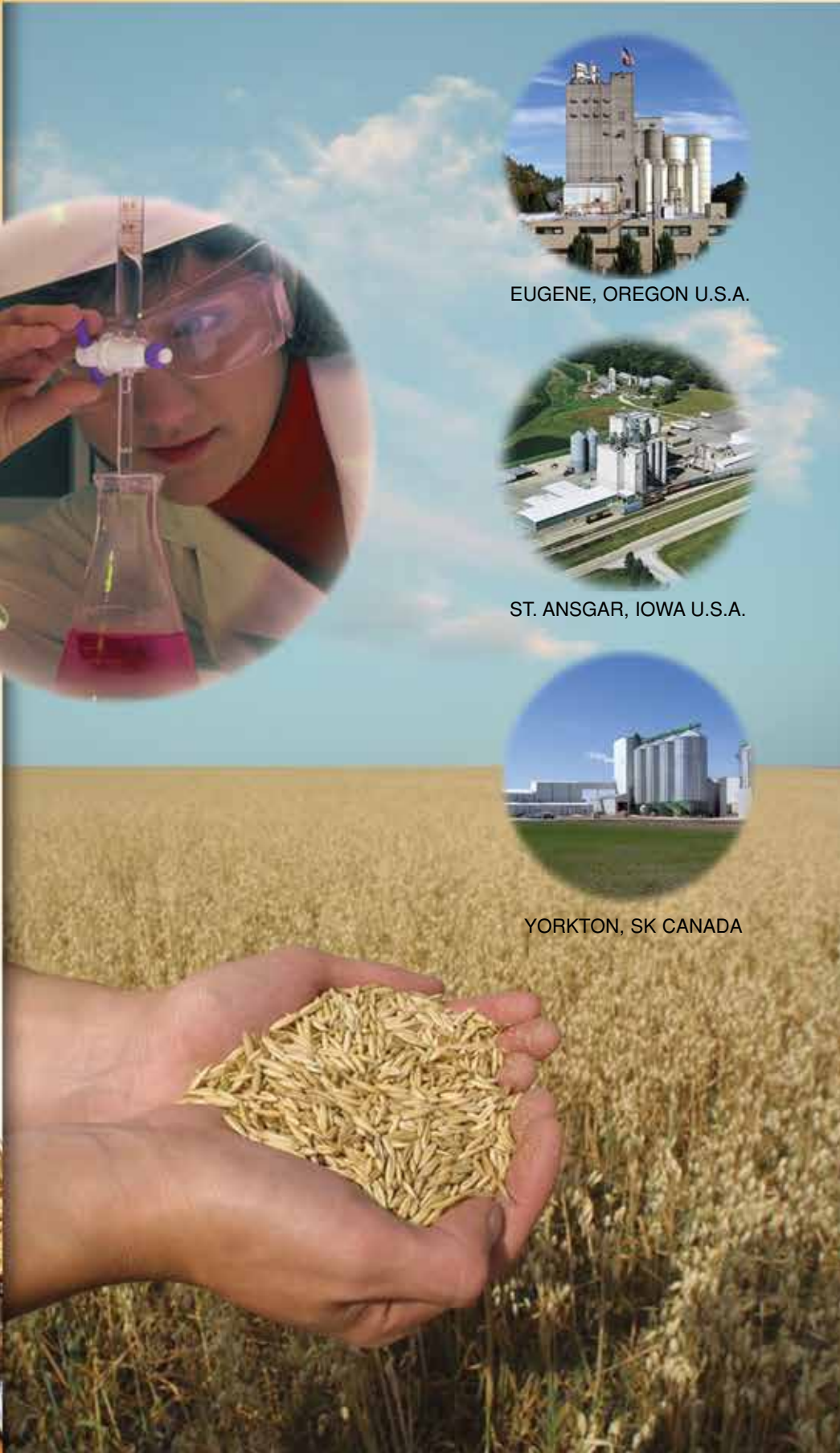
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Butter Buds Food Ingredients  
C.W. Brabender Instruments Inc.  
Calibre Control International Ltd.  
California Natural Products  
California Raisin Marketing Board  
California Wheat Commission  
Camden BRI  
Canadian Grain Commission  
Canadian International Grains Institute  
Canadian Wheat Board  
Caravan Ingredients  
Caremoli USA Inc.  
Cargill Inc.  
Cereal Food Processors Inc.  
Cereal Ingredients Inc.  
Cereal Science and Technology-SA  
Charm Sciences Inc  
Chemitec International  
CHOPIN Technologies  
Church & Dwight Co. Inc.  
ConAgra Foods Inc  
Corpus Christi Grain Exchange  
Cotecna Inspection Inc.  
Covance Laboratories  
CPM Wolverine Proctor  
CreaNutrition  
Dakota Specialty Milling Inc.  
Danisco USA Inc.  
David Michael & Co.  
Deibel Laboratories  
De Wafelbakkers LLC  
Diamond Foods Inc.  
DSM Food Specialties USA, Inc.  
DuPont Nutrition & Health  
ENRECO Inc.  
Enzyme Development Corp.  
Eurofins Scientific Group  
Fazer Bakeries Ltd.  
Five Star Flour Mills Co.  
FONA International Inc.  
Fortitech, Inc.  
Foss Analytical AB  
FOSS North America Inc.  
FSI Centre for Grain Quality Assurance  
General Mills Inc.  
George Weston Technologies  
Glanbia Nutritionals  
Gold Coast Ingredients Inc.  
Grain Growers Limited  
Grain Millers Inc.  
Grain Processing Corp.  
Granotec Grupo  
Great Plains Analytical Laboratory (formerly CII Laboratory)  
Hans-Dieter-Belitz-Institute for Cereal Grain Research  
Haubelt Laborgeräte GmbH  
Hesco Inc.  
Hunter Walton & Co. Inc.  
ICL Performance Products LP  
ILC Micro-Chem  
InfraReady Products Ltd.  
Ingredion Inc. (formerly Corn Products International)  
Innophos, Inc.  
Innovative Controls Corporation  
Intertek Agri Services  
J. Rettenmaier USA LP  
Kaytee Products Inc.  
Kellogg Co.  
Krueger Food Laboratories Inc.  
Lallemand Baking Solutions  
Malt Products Corp.  
Malt-O-Meal  
Marron Foods  
McCormick & Co. Inc.  
Megazyme International Ireland Ltd.  
Merlin Development Inc.  
MGP  
Mid-America Food Sales Ltd  
Minot Milling  
Monsanto Co.  
Morton Salt Inc.  
National Manufacturing Co.  
Navas Instruments LLC  
Nestle R&D  
Nisshin Seifun Group Inc.  
NP Analytical Laboratories  
Oat Ingredients LLC  
Oatly AB  
OMIC USA Inc.  
Ottens Flavors  
P&H Milling Group Limited  
Palsgaard Inc.  
Panzani-Creerpal  
Penford Food Ingredients Co.  
Perten Instruments AB  
Perten Instruments Inc.  
PGP International Inc.  
Pinnacle Foods Group LLC  
Polypro International, Inc.  
Productos Ramo SA  
PT Lumbung Nasional Flour Mill  
Quali Tech, Inc.  
Qualibet Testing Services Corporation  
QualySense AG  
R-Biopharm Inc.  
Red Star Yeast Co. LLC  
Research Products Co.  
RIBUS Inc.  
Riceland Foods, Inc.  
Riviana Foods Inc.  
Romer Labs Inc.  
Seaboard Overseas Trading Group  
Sensient Colors LLC  
Sensus America Inc.  
Shur-Gain Nutreco Canada  
Silliker, Inc.  
Southern African Grain Laboratory  
Stable Micro Systems Ltd.  
SunOpta Grain & Foods Group  
SunOpta Ingredients Group  
Suzanne's Specialties Inc.  
Symrise Inc.  
SYRAL S.A.S.  
Takenouchi Barley Processing Inc.  
Tate & Lyle  
Texture Technologies Corp.  
The Hershey Co.  
The Mennel Milling Co.  
The Wright Group  
The XIM Group LLC  
Thymly Products  
TIC Gums Inc.  
TraceGains Inc.  
Tyson Foods  
United Flour Mill Co. Ltd.  
US Energy Partners LLC  
USA Rice Federation  
USDA FGIS, Technology & Science  
Viterra Inc./21st Century Grain Processing  
Wenger Manufacturing Inc.

## 2012 AACC International Awardees

Congratulations to the following members selected to receive AACCI awards in honor of their significant contributions to the field of grain science. You are invited to the Opening General Session and Awards Ceremony September 30, 2012, to celebrate their accomplishments. Lecture times for the individual awards are noted below.

### AACC International Fellows

*The AACC International Board of Directors established a Fellows Program in 1985 to honor association members who have made distinguished contributions to the field of cereal science and technology in research, industrial achievement, leadership, education, administration, communication, or regulatory affairs. Anyone who has been a member for at least 10 years and made such a contribution is eligible.*



**Barbara Bufe Heidolph** has research experience with bakery, beverage, dairy, and meat. She is principal for ICL Performance Products LP, providing technical support, conducting applications research, and identifying growth opportunities. She is an AACC International member and served as president and chair. Heidolph authors many journal and

encyclopedia articles and reference books and has been granted six patents. She frequently speaks at and organizes seminars and symposia. Six patents have been granted and others are pending. Heidolph is a recognized expert in leavening and phosphate technology.



**Jay-lin Jane** is a Charles F. Curtiss Distinguished Professor in the Department of Food Science and Human Nutrition, Iowa State University. Dr. Jane received her B.S. degree from National Chung-Hsing University, M.S. from Texas Woman's University, Ph.D. from Iowa State University, and postdoctoral training at Kansas State University. Dr. Jane received numerous awards, including the Alsberg-French-Schoch Award from AACCI. She served as chair of the Carbohydrate Division and the Alsberg-French-Schoch Award Committee, among others.

### Edith Christensen Award for Outstanding Contributions in Analytical Methods

*Established in 2005, this award and \$1,500 honorarium recognizes scientific and technical contributions that have advanced the grain science field. Recipients of the award have demonstrated excellence through their contributions to the development of new analytical technologies, the application of new analytical technologies to cereal grain products, and/or the application of existing analytical technologies to solving detection and measurement problems in the field of grain science. They have also demonstrated leadership in methods activity within AACC International.*



**Terry Nelsen** has served as statistical consultant to the Approved Methods Committee for 25+ years. He was the first chair of the Statistics Committee, is a long-time member of the Check Sample Committee, and has served on several technical committees. He has organized and presented many stats symposia at AACCI meetings. Retired from USDA-ARS, he stays

active with AACCI, does a bit of stats consulting, and enjoys life on a small farm in northwestern Illinois.

**This year's award lecture, *Statistics and the cereal chemist*, will take place at 8:30 a.m. on Tuesday, October 2 during the Modeling Quality Session in Atlantic Ballroom 3.**

### Excellence in Teaching Award

*The AACC International Excellence in Teaching Award is presented to a member and teacher who has made significant contributions through teaching in the broad field of cereal science and technology. The award consists of a \$1,500 honorarium and plaque.*



**Andrew Ross** is an associate professor of Crop and Food Sciences at Oregon State University. Over his career, he has taught or cotaught 10 college-level food or cereal science related courses. He was an associate editor of *Cereal Chemistry* and currently holds that position for the *Journal of the Science of Food and Agriculture*. He was the 2011 recipient of the Oregon

State University College of Agricultural Sciences R. M. Wade Award for Excellence in Teaching.

## Texture Technologies Quality Research Awards

Established in 2012, this award is presented to an author who either writes or presents high-quality research that broadly involves instrumental texture analysis. The paper award will be awarded to an author from either Cereal Chemistry or CFW that was published over the past year. The paper award will be presented for the first time in 2013. The presentation award will be awarded to an author who has presented a poster/paper at this year's AACCI Annual Meeting. Submitted papers and posters are judged by the Texture Technologies Quality Research Award Committee.

**2012 Presentation Award recipient:** To be named

## William F. Geddes Memorial Award

The William F. Geddes Memorial Award was created in 1961 to honor the zeal and unselfish industry of an individual member and emphasize the importance of his or her contributions to the work of the association. Geddes served the association long and unselfishly as president (1938–1939), vice president (1937–1938), editor-in-chief of *Cereal Chemistry* (1943–1961), active member, and committee member. Over the long span of his association with AACCI International, Geddes influenced the organization in many ways, contributing to its work and progress, increasing its usefulness to its members, and boosting its reputation in the fields of fundamental and applied cereal science.

**2011 Recipient:** James Dexter

**2012 Recipient:** The name of the recipient is kept secret until unveiled during the Awards Ceremony.

## Young Scientist Research Award

Established in 2006, the AACCI International Young Scientist Research Award is presented to an individual for outstanding contributions in basic and applied research to cereal science with the expectation that contributions will continue. This award recognizes research relevant to the broad aims and interests of AACCI International. Awardees must not be older than 40 years by June 1 of the year the award is given. The recipient will receive a \$1,000 honorarium and a plaque and will be encouraged to present a lecture at the AACCI International meeting of the year in which the award is given.



**Girish Ganjyal** is a principal scientist at PepsiCo. He has been working in the areas of extrusion, food processing, and food ingredients research for the past 9 years in the food industry. Girish has delivered numerous invited lectures on extrusion processing at various universities and workshops. He serves as an adjunct faculty member at KSU and UNL. He is a

very active AACCI member and is currently an associate editor for *Cereal Chemistry*.

**This year's award lecture, *Hybrid proteins with enhanced functional properties*, will take place at 8:30 a.m. on Wednesday, October 3 during the Ingredient Modifications and Interactions Session in Atlantic Ballroom 3.**

## Division Awards

### Engineering & Processing

#### Stanley Watson Award

Established in 2001, the Stanley Watson Award is named in honor of an early corn wet-milling pioneer who started his research at the USDA during the early 1940s. Watson made substantial contributions in the improvement of the wet-milling process. The award recognizes outstanding AACCI members who, through the application of engineering principles, have made significant contributions in the area of cereal/grain processing.

**2012 recipient:** Syed Rizvi, Cornell University, U.S.A.

The award will be presented during the Engineering & Processing Division luncheon on Monday, October 1.

### Protein Division

#### Walter Bushuk Graduate Research Award in Cereal Protein Chemistry

Recognizes Ph.D. students who have made outstanding contributions in basic and/or applied research in cereal protein chemistry. This award recognizes research in relevant to the broad aims of AACCI International. The research can be either fundamental/basic or applied.

**2012 recipient:** Mehtap Fevzioglu, Purdue University, U.S.A.

**This year's award lecture, *Manipulation of zein structure with co-protein addition for application in dough systems: A new approach to functionalize non-gluten cereal proteins*, will take place at 8:30 a.m. on Wednesday, October 3 during the Structure–Function Relationships: Protein Session in Regency Ballroom 1.**



## Rheology Division

The Rheology Division awards will be presented during the Rheology Division Meeting and Lunch on Wednesday, October 3, 12:30 – 1:30 p.m., in room 201.

### George W. Scott Blair Award for Outstanding Research in Rheology and Texture

This award is presented to a scientist who has shown exceptional ability in research areas involving rheology and texture as related to cereal based products.

**2012 recipient:** Martin Scanlon, University of Manitoba, Canada

This year's award lecture, *What has low intensity ultra- sound informed us about wheat flour dough rheology?* will take place at 10:40 a.m. on Monday, October 1 during the Rheological Assessment of Products Session in Regency Ballroom 1.

### Isydore Hlynka Best Student Paper Award

This award recognizes students that show a talent for rheological research. Orals, PosterTalks, and Posters (if defended well) are eligible for receiving the award.

**2012 recipient:** Sandra Mandato, INRA, France

## Nominate Your Colleague

### 2013 AACCI Awards

The call is now being made for 2013 AACCI award nominations to be presented in Albuquerque, New Mexico, at the 2013 AACCI Annual Meeting. Nominations must be submitted on or before January 1, 2013, using the online nomination form at [www.aaccnet.org/membership/awards/\\_layouts/AACCforms/AwardNomination.aspx](http://www.aaccnet.org/membership/awards/_layouts/AACCforms/AwardNomination.aspx).

A full list of award descriptions and criteria are found online at [www.aaccnet.org/membership/awards](http://www.aaccnet.org/membership/awards), along with lists of previous award winners. Contact Linda Schmitt at [lschmitt@scisoc.org](mailto:lschmitt@scisoc.org) with questions.



Thank You

## A Legacy of Service



**AACCI** salutes Carl Hosney, distinguished member and editor of *Cereal Chemistry*, for his dedication and commitment to the association and cereal grain science. After eleven years as editor, Carl is retiring from the position. Carl, you have built a legacy of contributions to our science for which we are enormously grateful. We look forward to your continued input and involvement in AACCI and the cereal grain science community.



JANUARY-FEBRUARY 2012 - VOLUME 88 NUMBER 1  
CEREAL CHEMISTRY

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## Making a Difference

Volunteering to serve on an AACC International committee provides opportunities to gain skills and experience as well as the chance to give something back to the grains community. If you are interested in serving on a committee, please contact Linda Schmitt at lschmitt@scisoc.org or at +1.651.994.3828 or visit [www.aaccnet.org](http://www.aaccnet.org). AACCI thanks the following volunteers who served committees; your dedication is deeply appreciated!

### Administrative Committees

**2012 Annual Meeting Technical Program Planning: Chair:** Art Bettge. **Vice Chair:** Koushik Seetharaman. **Scientific Initiative Chairs:** Rangan Chinnaswamy, Clyde Don, Sean Finnie, Michael Giroux, Andrew McPherson, Rajen Mehta, S. Shea Miller. **Scientific Initiative Vice Chairs:** Brian Anderson, Trust Beta, Andrea Bianchini, Baljit Ghotra, Sathya Kalambur, Elaine Sopiwnyk, Mike Tilley.

**Alsberg-French-Schoch Memorial Award: Co-chairs:** Mike Gidley, Jay-lin Jane. **Member:** Yasuhito Takeda.

**Awards: Chair:** Peter Weegels. **Members:** Filip Arnaut, Anne Bridges, Bob Cracknell, Jon Faubion, Mike Gidley, Jay-lin Jane, Deirdre Ortiz, Randy Wehling.

**Cecil F. Pinney Travel Award: Chair:** Barbara Heidolph. **Members:** Jose Berrios, Cliff Hall, Sandra Hill, Debra Patterson.

**Edith A. Christensen Award: Chair:** Anne Bridges. **Members:** Jonathan DeVries, Janette Gelroth, John MacDonald, Rebecca Miller.

**Excellence in Teaching Award: Chair:** Randy Wehling. **Members:** Cliff Hall, Finlay MacRitchie, Chris Miller, Curtis Weller.

**Fellow Award: Chair:** Bob Cracknell. **Members:** Ravi Chibbar, Perry Ng, Peter Shewry, John R. N. Taylor.

**Finance: Chair:** Laura Hansen. **Members:** Art Bettge, Rod Booth, David Hahn, Debi E. Rogers.

**Food Safety Systems Task Force: Chair:** Barbara B. Heidolph. **Members:** Tim Aschbrenner, Steve Bell, Bill Besson, Bernie Bruinsma, Gina Clapper, Jane DeMarchi, Joel Dick, Maureen Downey, Janet Funke, Donna Garren.

**Foundation Board: Chair:** Barbara B. Heidolph. **Members:** Dave Braun, Cliff Hall, Debra Patterson, Patricia Rayas-Duarte. **Ex-officio:** Laura Hansen, Mike Tilley.

**Foundation Scholarship: Chair:** Mike Tilley. **Members:** Elke Arendt, Trust Beta, Osvaldo Campanella, Brinda Govindarjan, Gary Hou, Ramakanth Jonnala, Teresa Paeschke, Baninder Sloan, Uraiwan Tangprasertchai.

**Geddes Memorial Award: Chair:** Filip Arnaut. **Members:** Jan Delcour, Elizabeth Knight, Steve Nelson.

**Nomination: Chair:** Jim Dexter. **Members:** Cindy Alosco, Mary Ellen Camire, Hamed Faridi, Bruce Hamaker, Jody Mattsen, David Mauro, Donald Thompson, Lydia Tooker-Midness, Peter Weegels.

**Phil Williams Applied Research Award: Chair:** Jon Faubion. **Members:** Peter Koehler, Paul Seib, Louise Slade, Jan Willem van der Kamp.

**Professional Development Panel: Chair:** Pierre Faa. **Members:** Stanley Cauvain, Angela Dodd, Sean Finnie, Mark Ingelin, Maryke Labuschagne, Vani Vemulapalli.

**Publications Panel: Chair:** S. Shea Miller. **Members:** Girish Ganjyal, Rajen Mehta. **Board Liaison:** Marta Izydorczyk.

**Publications Panel Book Acquisitions: Chair:** Rajen Mehta. **Members:** Michelle Beaver, James Glueck, Rebecca Miller, Lukasz Pietrzak, Martin Scanlon, Jasbir Singh, Michael Sissons, Baninder Sloan, Mehmet Caglar Tulbek, Delilah Wood.

**Publication Panel Journal: Members:** Jan Delcour, Jon Faubion, Marta Izydorczyk, Steven Mulvaney.

**Publication Panel Online Products: Chair:** Girish Ganjyal. **Members:** Christophe Courtin, Jodi Engleson, Senay Simsek, Vicky Sloah, Kyung-Soo Woo.

**Scientific Advisory Panel: Co-chairs:** Bill Atwell, Christophe Courtin. **Members:** Mirko Bunzel, Theresa Cogswell, Brian Fatula, Laurie Gorton, Tatsuya Ikeda, Sathya Kalambur, Matthew Morrell, Monika Okoniewska, Joe Panozzo, Joshua Reid, Celetta Lee Sanders, Koushik Seetharaman, Peter Shewry. **Board Liaison:** Art Bettge.

**Thomas Burr Osborne Award: Chair:** Jon Faubion. **Members:** Peter Koehler, Paul Seib, Louise Slade, Jan Willem van der Kamp.

**Whole Grains Working Group: Chair:** Julie M. Jones. **Members:** Judi Adams, Per Aman, Brian Anderson, Elizabeth Arndt, Alison Baldwin, Anne Banville, Richard Braem, Michelle Broom, Steve Buckholdt, Jeff Dahlberg, Richard D'Aloisio, Katie Gibson, Brinda Govindarajan, Cynthia Hariman, Beth Mansfield, Chris Miller, Jorge Morales, Robin Murray, Kris Nelson, Mark Nelson, Mike Orlando, Deirdre Ortiz, Kaisa Poutanen, Elizabeth Roark, Lee Sanders, Kent Symns, Rao Vadlamani, Jan Willem van der Kamp, Kathy Wiemer, Barbara Winters, Patti Wunsch. **Ex-officio:** Steve Brooks, Jody Grider, Joan Lyon.

**Young Scientist Research Award: Co-chairs:** Chunjian Lin, Deirdre Ortiz. **Members:** Sajid Alavi, Jinsong Bao, Mirko Bunzel, Kim Koch, Sam Millar.

## Journals

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**Cereal Chemistry Editorial Board: Editor-in-Chief:** R. Carl Hoseney. **Senior Editors:** Jan Delcour, Jon Faubion, Marta Izydorczyk. **Associate Editors:** Byung-Kee Baik, Ian Batey, Brian Beecher, Elaine Thompson Champagne, F. William Collins, Christophe Courtin, Stephen R. Delwiche, Nancy Edwards, Sean Finnie, Girish Ganjyal, Weining Huang, Peter Koehler, Meera Kweon, Rebecca Miller, Jae-Bom Ohm, Kaisa Poutanen, Kent Rausch, Martin Scanlon, Sergio Serna Saldivar, Yong-Cheng Shi, Michael Sissons, Jeff Wilson.

**Cereal Foods World: Executive Editor:** Jody Grider. **Managing Editor:** Jordana Anker.

## Technical Committees

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**Approved Methods Technical Leadership: Chair:** Anne Bridges. **Members:** Elsayed Abdelaal, Helen Allen, Mark Bason, Larisa Lara Cato, Stuart Craig, Stephen Delwiche, Jonathan DeVries, Clyde Don, Melissa Fitzgerald, Diane Gannon, Kelly Henderson, Gary Hou, J. Michael Hudson, G. Ronald Jenkins, Elizabeth Knight, Padmanaban G. Krishnan, Meera Kweon, John L. MacDonald, Rebecca Miller, Wayne Moore, Terry Nelsen, Boris Nemzer, Maureen Olewnik, Kathryn Phillips, Polamreddy V. Reddy, E. B. (Elizabeth) L. Russell, Tandace Scholdberg, Michael Sissons, Elaine Sopiwnyk, Michael Tilley, Ning Wang, Paul Wehling.

**Asian Products: Cochairs:** Larisa Lara Cato, Gary Hou. **Members:** Helen Allen, Esey Assefaw, Richard Chen, Graham Crosbie, Bin X. Fu, David Hatcher, Marc Johnson, Hiroyuki Kawakami, Craig Morris, Hideki Okusu, Derrick J. Pauwels, Andrew Ross, Linda Schlichting, Vicky Solah, Yuya Tomiishi, Xiyang Zhong, Yibin Zhou.

**Bioactive Compounds Methods: Chair:** Elsayed Abdelaal. **Members:** Nancy Ames, Esey Assefaw, Trust Beta, Mirko Bunzel, F. William Collins, Gyebe Duodu, Bin X. Fu, Lynn Haynes, Talwinder Kahlon, Padmanaban Krishnan, Qin Liu, Rui Hai Liu, Ronald Madl, Len Marquart, John Michaelides, Boris Nemzer, Perry K. W. Ng, Vamshidhar Puppala, Sanaa Ragae, Linda Schlichting, Susanne Siebenhandl-Ehn, Michael Sissons, Supriya Varma.

**Biotechnology Methods: Cochairs:** G. Ronald Jenkins, Tandace Scholdberg. **Members:** Ann Blechl, Anne Bridges, Jingwen Chen, Ravindra Chibbar, Gina Clapper, Tigst Demeke, Satoshi Futo, Michael Grosz, David Grothaus, Marcia Holden, Kazumi Kita, Bert Popping, Sanaa Ragae, Raymond Shillito, Frank Spiegelhalter, Deepak Srivastava, Michael Sussman, Pamela Teran, Simon Varney.

**Bread Baking Methods: Cochairs:** Helen Allen, Rebecca Miller. **Members:** Connie Briggs, Margo Caley, Larisa Lara Cato, Wookyung Chung, Mark Ingelin, Bon Lee, Nicole Rees, Andrew Ross, Yvonne Supeene, Yohei Ushio, Vani Vemulapalli, Mingwei Wang.

**Check Sample: Chair:** John L. MacDonald. **Members:** Deann Akins-Lewenthal, Andrea Bianchini, Rangan Chinnaswamy, Janette Gelroth, Stephanie Kochan, Tom McKamey, Wayne

Moore, Terry Nelsen, Terry Selleck. **Ex-officio:** Rod Booth, Anne Bridges, Gina Clapper.

**Chemical Leavening Agents: Chair:** E. B. (Elizabeth) Russell. **Members:** Cindy Alosco, Craig Baumer, Robert Berube, John Brodie, Leonard Ciani, Jr., N'Jeree English, Robert Finn, Rosemary Gibbons, Janet Harrell, Barbara B. Heidolph, Dinnie Jordan, Meera Kweon, Joyce Yue Liao, W. D. Alfred Lin, Nita Livvix, Harry Muller-Thym, Trey Muller-Thym, Zory Quinde-Axtell, Laurie Scheffers, Deepa Sethi, Stephanie Skellern, Jesse Stinson, Supriya Varma, Ronald H. Zelch.

**Dietary Fiber and Other Carbohydrates: Cochairs:** Stuart Craig, Jonathan W. DeVries. **Members:** Kevin Benensohn, Anne Birkett, Rolfe Bryant, Mary Ellen Camire, Jeff Casper, Ester Cejudo, Cathy Dorko, Doris Dougherty, Annette Evans, Janette Gelroth, Brinda Govindarajan, Leslie Grant-Smith, Lynn Haynes, Yulai Jin, Sumiko Kanahori, Chris Kelley, Meera Kweon, Grace Lai, Qiang Liu, Thomas Luallen, John MacDonald, Robert Magaletta, Clodualdo Maningat, Barry McCleary, Tom McKamey, Rajen Mehta, Lizette (A.A.C.M.) Oudhuis, Teresa Paeschke, Katherine Phillips, Mervin Poole, Daniel Ramseyer, Louise Slade, Elizabeth Sloan, Kris Spence, Nicholas Tedesche, Tam Tran, Jan Willem van der Kamp, Guo-Hua Zheng, Garrett Zielinski, Jeanny Zimeri.

**Experimental Milling: Chair:** Polamreddy V. Reddy. **Members:** Scott Baker, Nelly Boinot, Richard Chen, Marina Dobrydina, Hulya Dogan, Arnaud Dubat, James Elkins, Jr., Diane Gannon, Bon Lee, Chunjian Lin, Ron Lindgren, Mariano Loza, Yufeng Mao, Gavin O'Reilly, Gerhard Pickelmann, Sally Ramirez, Michael Reimer, James Schuh, Thorne Seese, Edmund Tanhehco, Shuping Yan, Bin Zhao.

**Food Safety and Microbiology: Cochairs:** Elizabeth Knight, Maureen Olewnik. **Members:** Nancy Ames, Nancy Eggink, Ellen Gay, Mary O'Meara Gillespie, Hassan Gourama, Brandon Headlee, Adam Heishman, Laurie Hutton, Salam Ibrahim, Chunjian Lin, Dongmin Mu, Dojin Ryu, Robert Schrader, Terry Selleck, Robert Stackow, Brenda Stahl, Uraivan Tangprasertchai, Tam Tran, Charlene Wolf-Hall.

**Methods for Grain and Flour Testing: Chair:** John M. McCammon. **Members:** Arthur Bettge, M. Hikmet Boyacioglu, Clyde Don, Nancy Edwards, Janette Gelroth, Adam Heishman, Mark Host, Teresa Johns, Grace Lai, Robert Magaletta, Twylla K. P. McKendry, Wayne Moore, Terry Nelsen, Simon Penson, Sally Ramirez, Polamreddy V. Reddy, Debbie Sobering, Elaine Sopiwnyk, Philip C. Williams.

**Near Infrared Analysis: Chair:** Stephen Delwiche. **Members:** Jeff Boedigheimer, Nelly Boinot, Robert Cocciardi, Floyd Dowell, Arnaud Dubat, Gang Guo, Charles Hurburgh, Jr., Yueshu Li, Chunjian Lin, John McCammon, Twylla K. P. McKendry, Samuel Millar, Lindsay O'Brien, Gavin O'Reilly, Marvin Paulsen, Kamaranga Peiris, Lukasz Pietrzak, Wes Shadow, Debbie Sobering, Mehmet Caglar Tulbek, Martin Whitworth, Philip C. Williams, I-Chang Yang, Shyh-Jaung J. Yen.

**Oat and Barley Products: Chair:** Kelly Henderson. **Members:** Elsayed Abdelaal, Nancy Ames, William Bonner, F. William Collins, Jonathan DeVries, Douglas Doehlert, D. Scott Dumler, Sr., Ruedi Duss, Christine Fastnaught, Alan Koechner, Padman-



aban Krishnan, William Liska, Barry McCleary, Kristin Nelson, Clarence Newman, Andrew Ross, Hannu Salovaara, Susan Tosh, Francis Webster, Lori Wilson, Shyh-Jaung J. Yen.

**Pasta Products Analysis: Chair:** Michael Sissons. **Members:** Clara Fares, Bin X. Fu, Ann Heider, Hamit Koksel, Frank Manthey, Hideki Okusu, Linda Schlichting, Elaine Sopiwnyk.

**Physical Testing Methods: Chair:** Elaine Sopiwnyk. **Members:** Scott Baker, Mark Bason, Johan Bjurenvall, Stanley Cauvain, Rangan Chinnaswamy, Paul Cliffe, Clyde Don, Arnaud Dubat, Salvatore Iaquez, Mark Ingelin, Wayne Moore, Michael Pate, Paolo Santangelo.

**Protein and Enzyme Methods: Chair:** Clyde Don. **Vice Chair:** Michael Tilley. **Members:** Susan Altenbach, Nancy Ames, Rolfe Bryant, Ana-Maria De la Barca, Bin X. Fu, Girish Ganjyal, Janette Gelroth, Sigrid Haas-Lauterbach, Robert Hamer, Sarah Harmer, Thomas Herald, Navam Hettiarachchy, Monjur Hossen, Peter Koehler, Maryke Labuschagne, Jussi Lopenen, Barry McCleary, Perry K. W. Ng, Polamreddy Reddy, Tilman Schober, Patrick Selmair, Baninder Sroan, Jeppe Tams, Sean Tinkey, Jim Vecchio.

**Pulse and Legume: Chair:** Ning Wang. **Members:** Helbert Almeida, Byung-Kee Baik, Jose Berrios, Peter Frohlich, Gordon Gregory, Clifford Hall, Jeeyup (Jay) Han, Shannon Hood-Niefer, Linda Malcolmson, Heather Maskus, Glenn O'Hara, Maria Omary, Joe Panozzo, Mehmet Caglar Tulbek, Robert Tyler, Albert Vandenberg, Vani Vemulapalli, Jennifer Wood.

**Rice Milling and Quality: Chair:** Mark Bason. **Members:** Priscila Zaczuk Bassinello, Elaine Thompson Champagne, Cheryl Earp, Melissa Fitzgerald, Molly Johnson, Talwinder Kahlon, Anna McClung, Terry Siebenmorgen, Rachele Ward.

**Soft Wheat and Flour Products: Cochairs:** Diane Gannon, Meera Kweon. **Members:** Alice Andlovec, Byung-Kee Baik, Brian Beecher, Arthur Bettge, Wookyoung Chung, Dean Creighton, Patricia Dailey, Tim Edwards, Robert Fesler, Sean Finnie, Gang Guo, Lynn Haynes, Barbara B. Heidolph, Gary Hou, James Janson, Yulai Jin, Grace Lai, Steven Larsen, Bon Lee, Janice Levenhagen, Chunjian Lin, Scott McCormick, Terry Nelsen, Polamreddy Reddy, Michael Reimer, Andrew Ross, Lori Wilson.

**Statistical Advisory: Chair:** Michelle Mrozik Manderfeld. **Members:** Arthur Bettge, Stephen Delwiche, Sean Finnie, Michelle Mrozik Manderfeld, Terry Nelsen, Linda Schlichting, Paul Wehling, Philip C. Williams.

**Vitamin, Minerals and Lipids: Cochairs:** Padmanaban Krishnan, Kathryn S. Phillips. **Members:** Mary Ellen Camire, Gina Clapper, Jonathan DeVries, Barbara B. Heidolph, John MacDonald, Peter Ranum, Robert Lee Wright.

**Yeast Evaluation: Chair:** J. Michael Hudson. **Members:** Barbara B. Heidolph, Christian Lupp, Ombretta Polenghi, Scott Wise.

## AACC International Past Presidents

1915–1917: H. E. Weaver*	1967: K. L. Harris*
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1919–1921: R. W. Mitchell*	1969: B. S. Miller
1921–1923: S. J. Lawellin*	1970: E. J. Bass
1923–1925: M. J. Blish*	1971: K. A. Gilles
1925–1927: R. J. Clark*	1972: R. L. Whistler*
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1931: R. K. Durham*	1977: D. G. McPherson*
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1933: R. C. Sherwood*	1979: R. A. Morck*
1934: M. M. Brooke*	1980: W. J. Hoover*
1935: W. Platt*	1981: J. J. Watson*
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1937: C. H. Bailey*	1983: D. R. Lineback
1938: W. F. Geddes*	1984: B. L. D'Appolonia
1939: G. F. Garnatz*	1985: W. M. Schwewe
1940: C. F. Davis*	1986: J. Vetter
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1942: J. M. Doty*	1988: R. R. Hahn
1943: B. Sullivan*	1989: R. C. Hosenev
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1947: R. M. Sandstedt*	1992: A. A. Betschart
1948: W. L. Haley*	1993: W. A. Atwell
1949: F. C. Hilderbrand*	1994: D. G. Medcalf
1950: J. A. Shellenberger*	1995: H. Faridi
1951: H. K. Parker*	1996: W. Hurley*
1952: J. A. Anderson*	1997: O. K. Chung
1953: R. A. Barackman*	1998: F. Hegele
1954: F. R. Schwain*	1999: J. M. Jones
1955: W. H. Cathcart*	2000: J. BeMiller
1956: L. Zeleny*	2001: B. B. Heidolph
1957: W. B. Bradley*	2002: B. J. Donnelly
1958: C. L. Brooke*	2003: J. Dexter
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1961: J. W. Evans*	2006: R. Hamer
1962: M. M. MacMasters*	2007: B. Bruinsma
1963: J. W. Pence*	2008: M. Camire
1964: P. E. Ramstad*	2009: K. Khan
1965: R. H. Cotton	2010: B. McCleary
1966: W. S. Claus*	2011: D. E. Rogers

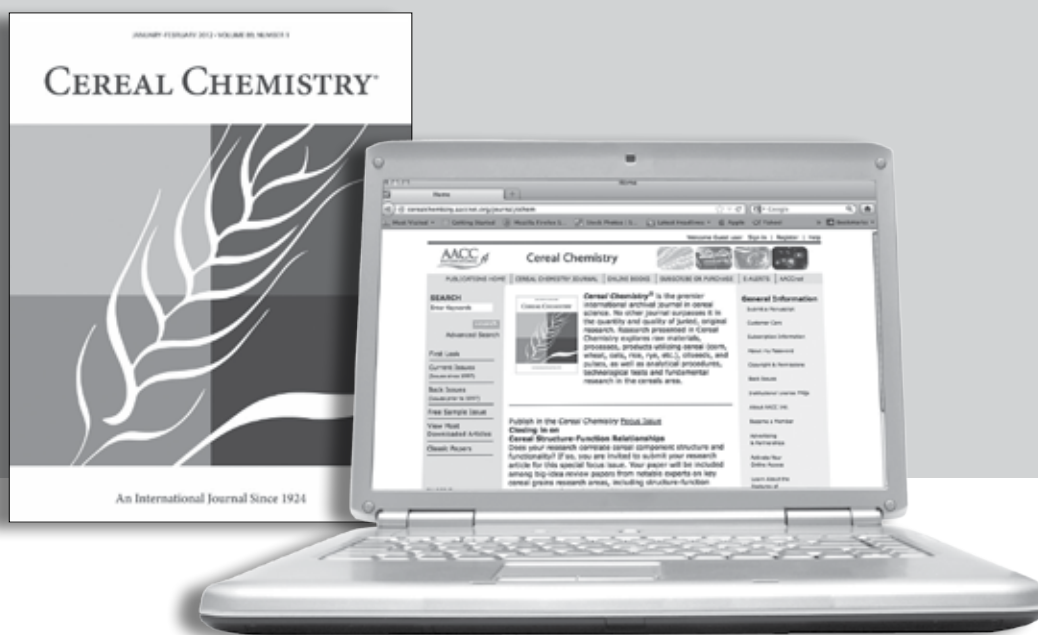
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*Note: Presidential terms run from annual meeting to annual meeting. Year listed is year term began.*

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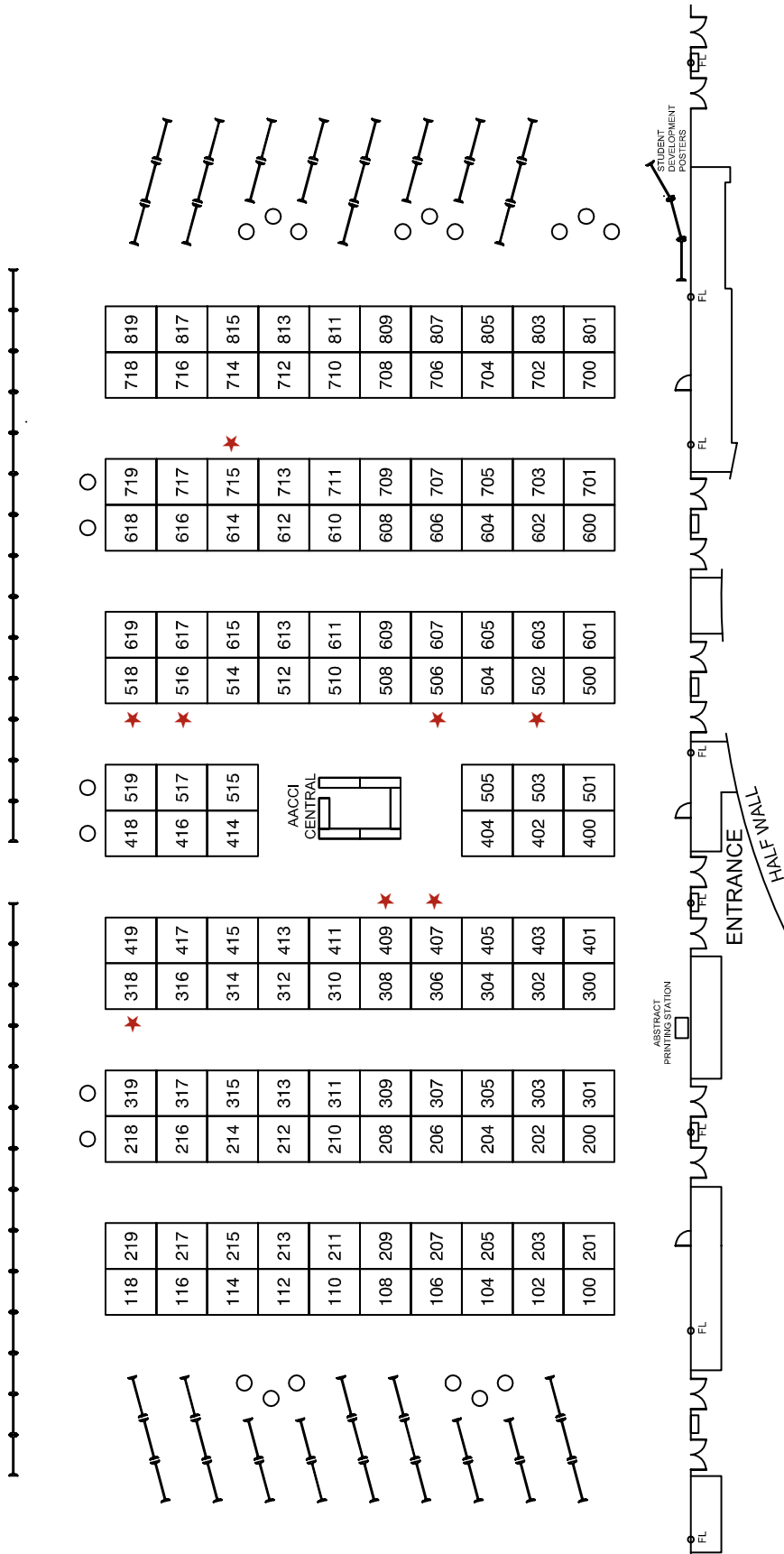
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**Stop by these booths for exhibit-sponsored prize drawings on Monday and Tuesday!**

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★ Prize drawing booth

- 715 Arla Foods Ingredients, Inc.
- 407 Bunge
- 409 Cablevey Conveyors
- 506 Charm Sciences
- 318 FONA International
- 518 Medallion Laboratories
- 502 MGP
- 516 Palsgaard Inc.

## 2012 AACC International Annual Meeting Exhibition

Visit the 2012 Annual Meeting Exhibition to discover the latest products and services that advance the work of the industry.

To help plan your time with the exhibitors and find your desired products and services, please use the following descriptions supplied directly from the exhibiting company. Exhibitors reserving space after this section had gone to press are listed in your Program Addendum.

### Exhibition Hall—Exhibits and Poster Hours

Great Hall, Westin Diplomat Hotel

Sunday, September 30	5:30 – 7:30 p.m.	Grand Opening Exhibition
Monday, October 1	4:00 – 7:00 p.m.	Exhibits with Beer and Poster Viewing with Authors Present
Tuesday, October 2	12:00 – 2:15 p.m.	Lunch with the Exhibitors

\* AACC International Corporate Member

† Participant in Supplier Innovation Session

### Alphabetical Listing of Exhibitors

- 218 AB Mauri Food Inc.**, 1350 Timberlake Manor Pkwy., Chesterfield, MO, 63017 U.S.A.; Telephone: +1.314.392.0800; Fax: +1.314.392.0865; Web: www.abmna.com. AB Mauri is a global leader in yeast and bakery ingredient products including dough improvers, leaveners, tablets, mold inhibitors, vinegars and acidulants, syrups and malts, and specialty products.
- 416\* ADM/Matsutani LLC**, 500 Park Blvd., Suite 1240, Itasca, IL, 60143 U.S.A.; Telephone: +1.630.250.8720; Fax: +1.630.250.8725; Web: www.fibersol.com. Fibersol, the premier supplier of soluble dietary fiber, offers a full line of fiber ingredients that can be used to improve the nutritional profile and increase the fiber content of any food application without compromising taste, quality, and enjoyment for the consumer.
- 414\* ADM Milling**, 4666 E. Faries Pkwy., Decatur, IL, 62526 U.S.A.; Telephone: +1.217.424.5200; Web: www.adm.com/food. ADM connects the harvest to home and provides the food industry with high-quality ingredients—made from corn, oilseeds, wheat, and cocoa—and unparalleled technical assistance. Our lecithins, flours, specialty milled products, specialty baking products, dry sweeteners, wheat glutes, isolates, and starches are ideal for a variety of food applications.
- 102\* AIB International**, P.O. Box 3999, 1213 Bakers Way, Manhattan, KS, 66505-3999 U.S.A.; Telephone: +1.785.537.4750 or 1.800.633.5137; Fax: +1.785.537.1493; Web: www.aibonline.org. AIB International baking research and technical services include ongoing and contracted research, product evaluation, laboratory testing, ingredient testing, bakery processing audits, and consulting. Food labeling services provide FDA-compliant labels for manufacturers in the United States and Canada. The School of Baking provides education and training through public seminars and consultations.
- 310\* ANKOM Technology**, 2052 O'Neil Rd., Macedon, NY, 14502 U.S.A.; Telephone: +1.315.986.8090; Fax: +1.315.986.8091; Web: www.ankom.com. ANKOM Technology is best known for development of "filter bag technology." By enclosing samples in filter media, batch processing can be accomplished. This greatly increases productivity and reduces cost. During the spring of 2012, ANKOM Technology released its latest instrument. The ANKOM TDF automated dietary fiber system.
- 715\* Arla Foods Ingredients, Inc.**, 645 Martinsville Rd., Basking Ridge, NJ, 07920 U.S.A.; Telephone: +1.908.604.8551; Fax: +1.908.604.9310; Web: www.arlafoodsingredients.com. Arla Food Ingredients, Inc., offers several key benefits in baked goods objectives. These include cost reduction, maintaining structure throughout processing and shelf life, and improving tenderness and bite quality. By utilizing functional milk proteins, Arla makes it possible to replace eggs and maintain quality in baked goods.
- 402\* Baker Perkins**, 3223 Kraft Ave. S.E., Grand Rapids, MI, 49512-2027 U.S.A.; Telephone: +1.616.784.3111; Fax: +1.616.784.0973; Web: www.bakerperkinsgroup.com. Baker Perkins supplies unit machines and complete systems for virtually every kind of breakfast cereal as well as the snack, cookie, cracker and other grain-based food industries. Proven process technology is fully supported by an Innovation Center for new product development and a full range of aftermarket services.
- 606\* Bay State Milling Co.**, 100 Congress St., 2nd Floor, Quincy, MA, 02169-0948 U.S.A.; Telephone: +1.800.55FLOUR; Web: www.baystatemilling.com. Through grains with superior flavors and textures, improved functionality and health benefits, formation of a Nutrition Science Advisory Council guiding us in the development of healthful products, and The Rothwell GrainEssentials Center where customers can work alongside our food scientists, Bay State Milling Company is flour from farm to fork.

- 707\*** **BENEO Inc.**, 201 Littleton Rd., 1st Floor, Morris Plains, NJ, 07950 U.S.A.; Telephone: +1.973.867.2140; Fax: +1.973.867.2141; Web: [www.beneo.com](http://www.beneo.com). BENEEO offers functional ingredients from natural sources. It helps improve a product's nutritional and technological characteristics. Consulting in application technology and providing insights into nutrition science and legislation, the company actively supports customers in the development of more balanced and healthy food products. BENEEO is a division of Südzucker Group.
- 602\*†** **Bepex International, LLC**, 333 Taft St. NE, Minneapolis, MN, 55413 U.S.A.; Telephone: +1.612.331.4370; Fax: +1.612.624.1444; Web: [www.bepex.com](http://www.bepex.com). For over 100 years, Bepex has provided custom designed systems, industrial process equipment, and process development services. With unique expertise in thermal processing, fine milling, agglomeration, and fine particle coating technologies, we support the whole grains, fiber inclusion, and natural product functionality requirements demanded by today's cereal industry.
- 702\*†** **Best Cooking Pulses, Inc.**, 124 10th St. NE, Portage la Prairie, MB, R1N 1B5 Canada; Telephone: +1.204.857.4451 or +1.204.475.5283; Fax: +1.204.239.6885; Web: [www.bestcookingpulses.com](http://www.bestcookingpulses.com). Canadian agri-foods company active in international pulse trade since 1936. "Best" pulse flours (pea, chickpea, lentil, and bean), pea fiber, whole/split peas, and lentils. Available conventional/natural or certified organic, kosher, and halal. CGC HACCP, and Women Business Enterprise certified. New "Clever Cookie" research portal. "Healthy foods for healthy diets and a sustainable world."
- 415\*** **Best Vantage Inc.**, Ste. 211, 3175 Commercial Ave., Northbrook, IL, 60062 U.S.A.; Telephone: +1.847.714.9527; Fax: +1.847.714.9527; Web: [www.bestvantageinc.com](http://www.bestvantageinc.com). Best Vantage Inc. (est. 1995) offers a global network of food professionals to help food and nutritional products and ingredient companies to identify, develop, and optimize new business opportunities through technology. Key areas of focus include business development, market research, product and technology development, and B2B technical and marketing communications.
- 207** **BI Nutraceuticals**, 2550 El Presidio St., Long Beach, CA, 90810 U.S.A.; Telephone: +1.310.669.2162; Fax: +1.310.637.3644; Web: [www.botanicals.com](http://www.botanicals.com). BI is the largest supplier of botanical ingredients in the United States. We supply and manufacture hundreds of products including botanical powders, teas, extracts, nutritional blends, vitamins, minerals, and more. BI offers 200+ GRAS ingredients. BI is cGMP compliant as well as SQF, organic, kosher, halal, and gluten-free certified.
- 603** **Blue Diamond Growers (Almond Board)**, 1802 C St., Sacramento, CA, 95811 U.S.A.; Telephone: +1.916.446.8500; Web: [www.bdingredients.com](http://www.bdingredients.com). Blue Diamond Growers, established in 1910, is the world's largest processor and marketer of almonds. With a focus on quality and service, we can deliver in-shell, brown, and manufactured almonds as well as retail products to meet your almond needs. Blue Diamond also processes and markets Oregon hazelnuts.
- 404\*** **Brabender GmbH & Co. KG**, Kulturst 51-55, Duisburg 47055, Germany; Telephone: +49.203.7788.0; Fax: +49.203.7788.101; Web: [www.brabender.com](http://www.brabender.com). Brabender GmbH is the worldwide leading manufacturer of the highest quality instrumentation for testing physical properties and quality of various materials utilized in the food industry. Introducing the GlutoPeak, a fast, simple way to measure gluten aggregation in minutes. Brabender GmbH & Co. KG is... where quality is measured.
- 817\*** **Briess Malt & Ingredients Co.**, 625 S. Irish Rd., P.O. Box 229, Chilton, WI, 53014 U.S.A.; Telephone: +1.920.849.7711; Fax: +1.920.849.4227; Web: [www.Briess.com](http://www.Briess.com). "Put a better label on the table" with minimally processed, all natural ingredients from Briess. Ingredient categories include natural sweeteners (syrups and malt extracts); malted barley flours and grits; roasted barley, corn, and wheat ingredients; reduced cook-time flours, flakes, and particles; organic tapioca maltodextrins; and sprouted-roasted wheat flours.
- 100\*** **Brolite Products, Inc.**, 1900 S. Park Ave., Streamwood, IL, 60107 U.S.A.; Telephone: +1.630.830.0340; Web: [www.bakewithbrolite.com](http://www.bakewithbrolite.com). Brolite Products is an ingredient manufacturer that has been blending quality products for the baking industry for over 80 years. Brolite's line of products includes natural and acid-based sourdough conditioners, bases, grain blends, organic blends, and specialty items. We will also custom blend products to fit your needs.
- 515\*** **Brookfield Engineering Laboratories, Inc.**, 11 Commerce Blvd., Middleboro, MA, 02346 U.S.A.; Telephone: +1.508.946.6200; Web: [www.brookfieldengineering.com](http://www.brookfieldengineering.com). Brookfield is the world's leading manufacturer of viscometers and rheometers for both laboratory and inline measurement and control. Brookfield also offers solutions for texture analysis as well as powder flow applications in the form of our low-cost CT3 Texture Analyzer and PFT Powder Flow Tester.
- 418** **Bruker Corporation**, 40 Manning Rd., Billerica, MA, 01821 U.S.A.; Telephone: +1.978.663.3660; Fax: +1.978.667.5993; Web: [www.bruker.com](http://www.bruker.com). Bruker's TD-NMR analyzers and near infrared (NIR) spectrometers can be used for the research and development and quality and process control of grains. Determine multiple parameters using our nondestructive and rapid spectroscopy techniques, without using any consumables. [www.bruker.com/foodquality](http://www.bruker.com/foodquality).
- 512\*†** **Bühler Inc.**, 13105 12th Ave N., Plymouth, MN, 55441 U.S.A.; Telephone: +1.763.847.9900; Fax: +1.763.847.9911; Web: [www.buhlergroup.com](http://www.buhlergroup.com). Bühler is your global technology partner for the food industry. We are a market leader in processing equipment for various industries including grain milling and extrusion systems. Bühler recently introduced the Food Innovation Center, a new food-grade facility located in Plymouth, Minnesota, designed for research, education, and consumer ready testing.

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- 407\*** **Bunge**, 725 N. Kinzie Ave., Bradley, IL, 60915 U.S.A.; Telephone: +1.815.523.8083; Fax: +1.815.523.8114; Web: [www.bunge.com/agribusiness](http://www.bunge.com/agribusiness). Bunge, a leading agribusiness company, transforms commodities including grains and oilseeds into value-added food ingredients. We offer access to resources including logistics, commodity markets, and risk management tools, but it is our commitment to innovation and our collaborative partnerships with our customers that are the hallmarks of our success.
- 213\*** **Butter Buds Food Ingredients**, 2330 Chicory Rd., Racine, WI, 53403 U.S.A.; Telephone: +1.262.598.9900 or 1.800.426.1119; Fax: +1.262.598.9999; Web: [www.bbuds.com](http://www.bbuds.com). We use proprietary enzyme modification technology to “unlock” the potent flavor elements in butter, cream, and cheese, delivering highly concentrated natural flavor in convenient powder, paste, and liquid form. These natural dairy concentrates allow the production of better-tasting, more economical, healthier foods with very clean label statements.
- 505\*** **C. W. Brabender Instruments, Inc.**, 50 E. Wesley St., South Hackensack, NJ, 07606 U.S.A.; Telephone: +1.201.343.8425; Fax: +1.201.343.0608; Web: [www.cw-brabender.com](http://www.cw-brabender.com). C. W. Brabender Instruments, Inc., is a forerunner in manufacturing the highest quality instrumentation for testing physical properties and quality of various materials utilized in the food industry. Introducing the GlutoPeak, a fast, simple way to measure gluten aggregation in minutes. C. W. Brabender Instruments, Inc. is... where quality is measured.
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- 409** **Cablevey Conveyors**, P.O. Box 148, 2397 Hwy 23, Osaloosa, IA, 52577 U.S.A.; Telephone: +1.641.673.8451; Fax: +1.641.673.7419; Web: [www.cablevey.com](http://www.cablevey.com). Conveying breakfast cereal for top processors in the world requires gentle handling of valuable materials. Cablevey Conveyors specializes in conveying friable materials at various points in your process line. The highly efficient system drags materials within enclosed tubes safely to the next destination. Urethane wiper discs eliminate any residual fines.
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- 809** **Cain Food Industries, Inc.**, 8401 Sovereign Row, Dallas, TX 75247, U.S.A.; Telephone: +1.214.630.4511; Fax: +1.214.630.4510; Web: [www.cainfood.com](http://www.cainfood.com). Cain Food Industries is a leading supplier of functional ingredients to the grain-based food industry. So, if you are looking for sodium reduction, clean label dough conditioners, enzyme systems or other functional ingredients please stop by for a visit with the team that makes the art of baking a little simpler.
- 301\*†** **Calibre Control International Ltd./C-Cell**, 5–6 Asher Court, Lyncastle Way, Warrington, WA4 4ST United Kingdom; Telephone: +44(0)1925.860401; Web: [www.calibrecontrol.com](http://www.calibrecontrol.com). Calibre (U.K.) will exhibit the C-Cell analyzer, globally trusted by research and manufacturing facilities to provide reliable and revealing information on the quality of bakery and extruded products. C-Cell captures and manipulates images of finished products, reporting up to 48 different measurements, enabling industry to provide rapid bakery quality checks.
- 605\*** **California Natural Products**, 1250 E. Lathrop Rd., P.O. Box 1219, Lathrop, CA, 95330 U.S.A.; Telephone: +1.209.858.2525 ext. 224; Fax: +1.209.858.4076; Web: [www.cnp.com](http://www.cnp.com). CNP rice syrups, rice syrup solids; RiCevia glycemic control rice syrups; Dextri-Plus rice oligodextrins; Bake Trim, the rice syrup solid that provides dough conditioning, trans/saturated fat replacement, and emulsification benefits for baked goods, nutrition bars; organic tapioca syrups; rice milk powder; GFSI SQF level 3, GFCO gluten free.
- 319\*** **Campden BRI**, Station Rd., Chipping Campden, GL55 6LD United Kingdom; Telephone: +01386.842000; Fax: +01386.842100; Web: [www.campden.co.uk](http://www.campden.co.uk). Campden BRI provides scientific and technical services to the food and beverage sectors internationally. We offer consultancy and training in food safety and compliance (including food hygiene, HACCP analysis, and allergen management), process and product development and innovation, analysis and testing, consumer and sensory science, and knowledge management.
- 202\*** **Canadian International Grains Institute**, 1000-303 Main St., Winnipeg, MB, R3C3G7 Canada; Telephone: +1.204.983.5344; Fax: +1.204.983.5344; Web: [www.cigi.ca](http://www.cigi.ca). Cigi combines practical knowledge of Canadian field crops with extensive laboratory and pilot processing facilities to deliver technical expertise, support, customized training, and applied research to customers worldwide. Visit the Cigi booth to learn more about our work on pulse flour milling and the use of pulse ingredients in foods.
- 217\*** **Caremoli USA**, Caremoli USA, Inc., 23959 580th Avenue, Ames, IA 50010, U.S.A.; Telephone: +1.515.233.1255; Fax: +1.515.233.2933; Web: [www.caremoligroup.com](http://www.caremoligroup.com). Manufacturer of cooked and stabilized grains and legumes, in whole kernel, grits, and flour formats. Manufacturer of applications-specific ingredient blends designed for your product's functional, nutritional, and sensory goals. Manufacturer of top-quality guar gum and psyllium. Supplier of tara and locust bean gums and various fibers.
- 315** **Carl Zeiss Microscopy, LLC**, One Zeiss Dr., Thornwood, NY, 10594 U.S.A.; Telephone: 1.800.233.2343; Web: [www.zeiss.com/microscopy](http://www.zeiss.com/microscopy). Carl Zeiss offers a comprehensive line of spectral sensors, spectrometer components, and dedicated solutions for process analysis covering a wide spectral range (UV-VIS-NIR). Carl Zeiss offers on-line, at-line, and in-line systems for color measurement, concentration and layer thickness, analytical and process monitoring software packages specifically tailored to your requirements.



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- 611 CE Elantech, Inc.**, 170 Oberlin Ave. N., Suite 5, Lakewood, NJ, 08701 U.S.A.; Telephone: 1.888.232.4676 or +1.732.370.5559; Fax: +1.732.370.3888; Web: [www.ceelantech.com](http://www.ceelantech.com). CE Elantech is the exclusive U.S. distributor for Thermo Scientific (formerly Carlo Erba) combustion elemental analyzers and Next Instruments near-infrared spectrometers and CornCount/SeedCount image analyzers. NEW Thermo Scientific Flash 4000 N/Protein Analyzer. This innovative instrument combines true large sample capability (1-3 grams) with permanent "TwinTraps" for CO<sub>2</sub> and moisture removal.
- 506\* Charm Sciences, Inc.**, 659 Andover St., Lawrence, MA, 01843 U.S.A.; Telephone: +1.978.687.9200; Fax: +1.978.687.9216; Web: [www.charm.com](http://www.charm.com). Charm Sciences is a world leader in food safety diagnostics. Tests include mycotoxins, allergen control, and ATP. Aflatoxin, DON, fumonisin, ochratoxin, T2/HT2, and zearalenone in 3, 5, or 10 min quantitative format. Over twenty commodities GIPSA approved. Rely on Charm for excellence in quality, innovation, and sensitivity to protect your brand!
- 601\*† CHOPIN Technologies**, 20 Ave. Marcellin Berthelot, Villeneuve La Garenne, 92390 France; Telephone: +33.1.41.47.50.38, Web: [www.chopin.fr](http://www.chopin.fr). CHOPIN Technologies is specialized in quality-control methods and equipment. Our range includes analyses of moisture content and proteins (Infraneo). For laboratories, we offer tools for test milling (CD1), analyzing starch damage (SDmatic), as well as dough behavior during mixing (Alveograph), fermentation (Rhéofermentomètre), baking (Mixolab), and many other process control solutions.
- 607\* Church & Dwight Co. Inc.**, 469 N. Harrison St., Princeton, NJ, 08543 U.S.A.; Telephone: 1.800.221.0453; Web: [www.ahperformance.com](http://www.ahperformance.com). Church & Dwight is the leading North American producer of sodium bicarbonate, well recognized as Arm & Hammer.
- 313 Clextral Inc.**, 14450 Carlson Cir., Tampa, FL, 33626 U.S.A.; Telephone: +1.813.854.4434; Fax: +1.813.855.2269; Web: [www.clextral.com](http://www.clextral.com). Clextral's twin-screw extruders transform cereal grains from fixed-price commodities into value-added products, and Clextral's product development experts help processors meet this challenge. New applications include functional ingredients, grain-based meat replacements, modified starch, biomass conversion, high fiber breakfast cereals and snack foods, coextruded products, couscous, and pet and animal foods.
- 205\* CPM Wolverine Proctor**, 251 Gibraltar Rd., Horsham, PA, 19044 U.S.A.; Telephone: +1.215.443.5200; Fax: +1.215.443.5206; Web: [www.wolverineproctor.com](http://www.wolverineproctor.com). Ultra sanitary design SCF III dryer. Our complete line of energy efficient equipment includes dryers, coolers, impingement ovens (jet tube or parajet nozzle), Jetzone fluid bed dryers/puffers/toasters, shredding mills, flaking mills, and batch cookers. Our Tech Center offers continuous and batch testing for a wide range of products.
- 613\* Dakota Specialty Milling**, 4014 15th Ave NW, Fargo, ND, 58102 U.S.A.; Telephone: 1.877.282.9743 or +1.701.282.9656; Fax: +1.701.282.9743; Web: [www.dakotaspecialtymilling.com](http://www.dakotaspecialtymilling.com). Dakota Specialty Milling is the trusted global supplier of custom milled whole-grain, multigrain, and ancient grain blends for bakers and processors of variety breads, hot and RTE cereals, crackers, granolas, nutrition bars, snacks, and donuts. We focus on creating and delivering the highest levels of quality, consistency, performance, and value.
- 405\* David Michael & Co.**, 10801 Decatur Rd., Philadelphia, PA, 19154 U.S.A.; Telephone: +1.215.632.3100 or 1.800-DM-FLAVORS; Fax: +1.215.637.3920; Web: [www.dmfavors.com](http://www.dmfavors.com). David Michael & Co. is a global provider of flavors, stabilizers, and natural colors. In addition, we also assist our clients with total product development, from ideation to finished product. Let us put our innovation and experience to work for you!
- 708 Domino Specialty Ingredients**, One N. Clematis St., Suite 400, West Palm Beach, FL, 33401 U.S.A.; Telephone: 1.800.446.9763 or +1.561.248.1852; Web: [www.dominospecialtyingredients.com](http://www.dominospecialtyingredients.com). Domino Specialty Ingredients is a leading manufacturer producing high-quality ingredients including organic agave nectar, stevia and sugar & stevia blends, certified organic and natural sugar, malt, molasses, honey granules, rice, rice syrup, rice bran, rice flour, rice maltodextrins, sweetener solutions, fondants, icing sugars, and pharmaceutical grade products.
- 411\* DSM Food Specialties USA, Inc.**, 3502 N. Olive Rd., South Bend, IN, 46628 U.S.A.; Telephone: +1.574.232.5000; Web: [www.dsm.com](http://www.dsm.com). DSM—Bright Science. Brighter Living. DSM is a global science-based company active in health, nutrition, and materials. DSM provides a broad portfolio of baking enzymes, including brand names such as BakeZyme, Panamore, CakeZyme, and PreventAse. Its products contribute to the success of the world's favorite baking, dairy, processed food, fruit juice, alcoholic beverage, and functional food brands. More information can be found at [www.dsm.com](http://www.dsm.com).
- 805\* DuPont Nutrition & Health**, 4 New Century Parkway, New Century, KS 66031, U.S.A.; Telephone: 1.800.255.6837 or +1.913.764.8100; Fax: +1.913.764.5407; Web: [www.food.dupont.com](http://www.food.dupont.com). DuPont Nutrition & Health addresses the world's challenges in food by offering a wide range of sustainable, bio-based ingredients and advanced microbial diagnostic solutions to provide safer, healthier and more nutritious food. DuPont combines knowledge and experience with a passion for innovation to deliver unparalleled customer value to the marketplace.

- 316 Elementar Americas**, 520 Fellowship Rd., Suite D-408, Mount Laurel, NJ, 08054 U.S.A.; Telephone: +1.856.787.0022; Fax: +1.856.787.0055; Web: [www.chnos.com](http://www.chnos.com). Elementar Americas offers the rapid-N-cube and vario-MAX-cube for accurate automated protein determination via Dumas combustion method: safer, faster, and less expensive than Kjeldahl. Key rapid-N features: small footprint, large sample size, stable calibration, 4-minute analysis time, low-maintenance design, inexpensive CO<sub>2</sub> carrier gas, no-stacking 60-position carousel, 10-year furnace warranty, and excellent service.
- 617 EnviroLogix Inc.**, 500 Riverside Industrial Pkwy., Portland, ME, 04103-1486 U.S.A.; Telephone: +1.207.797.0300 or 1.866.408.4597; Fax: +1.207.797.7533; Web: [www.envirologix.com](http://www.envirologix.com).
- 510\* Enzyme Development Corp.**, 505 8th Ave., Suite 1500, New York, NY, 10018 U.S.A.; Telephone: +1.212.736.1580; Web: [www.enzymedevelopment.com](http://www.enzymedevelopment.com). Manufacturer of a wide range of baking enzymes to enhance your final product or optimize production. HQ in New York City and production and labs in Scranton, Pennsylvania. On-site assistance available. Please call or email us.
- 306 Eurofins GeneScan**, 2315 N. Causeway Blvd., Suite 200, Metairie, LA, 70001 U.S.A.; Telephone: +1.504.297.4330; Web: [www.eurofinsus.com](http://www.eurofinsus.com). Eurofins is an independent, international, multi-disciplined laboratory testing group staffed by world-recognized scientists, technicians, and support staff. With over 160 laboratories worldwide, Eurofins forms a bioanalytical company with an unrivaled range of analytical capabilities for clients in the food, feed, pet food, animal health, plant health, nutraceutical, grain, and seed industries.
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- See our ad on page 17.**
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- 819 Farmer Direct Foods**, 511 Commercial, P.O. Box 326, Atchison, KS, 66002 U.S.A.; Telephone: 1.800.372.4422 or +1.913.367.4422; Fax: +1.913.367.4443; Web: [www.farmerdirectfoods.com](http://www.farmerdirectfoods.com). Farmer Direct Foods specializes in milling premium whole grain wheat flours made from member-grown "Identity Assured" hard white and hard red winter wheats. Our stoneground flours come in three grinds giving wide versatility (regular, fine, and mega-fine) and provide superior baking characteristics!
- 803† Firmenich Inc.**, P.O. Box 5880, Princeton, NJ, 08543 U.S.A.; Telephone: +1.609.580.4317; Fax: +1.609.452.6077; Web: [www.firmenich.com](http://www.firmenich.com). As a leading flavor supplier, Firmenich's expertise goes beyond taste: it is the sum of our passion, inspiration, and knowledge that allows us to create the best flavors and most innovative technologies for the bakery and cereal market.
- 615 FMC BioPolymer**, 1735 Market St., Philadelphia, PA, 19103 U.S.A.; Telephone: 1.800.526.3649 or +1.215.299.5908; Fax: +1.215.299.5809; Web: [www.fmbiopolymer.com](http://www.fmbiopolymer.com). FMC is the world's leading producer of alginate, carrageenan, and cellulose gel. Built upon more than 65 years of experience and know-how, FMC's portfolio of ingredients delivers precise texture, structure, and stability. We now offer natural colors. Looking for solutions to bakery projects? Look to FMC for know-how that works.
- 318\* FONA International**, 1900 Averill Rd., Geneva, IL, 60134 U.S.A.; Telephone: +1.630.578.8600; Web: [www.fona.com](http://www.fona.com). FONA International Inc. is the leading independent flavor company focused on serving an ever-expanding group of market-leading customers in the sweet, confection, culinary, and beverage segments. FONA combines world-class expertise, technology, innovation, and quality programs with the focus, speed, and flexibility of a service-oriented, values-based organization. FONA is recognized for its unique culture of energetic professionals and relentless pursuit of excellence.
- 208\* Fortitech, Inc.**, 2105 Technology Dr., Schenectady, NY, 12308 U.S.A.; Telephone: +1.518.372.5155; Fax: +1.518.372.5599; Web: [www.fortitech.com](http://www.fortitech.com). Fortitech is the one-stop source for food, beverage, and pharmaceutical manufacturers looking to fortification as a way to differentiate their products from their competition, as well as helping meet the nutritional needs of consumers around the world. Fortitech is FS 22000 certified globally. For more information, visit [www.fortitech.com](http://www.fortitech.com).
- 305/ FOSS North America**, 8091 Wallace Rd., Eden Prairie, MN, 55344 U.S.A.; Telephone: +1.952.974.9892 or 1.800.547.6275; Fax: +1.952.974.9823; Web: [www.foss.us](http://www.foss.us). FOSS offers highly accurate, easy to use solutions for all stages of grain analysis—on-farm, grain receipt, in the lab, and at the production line. By using FOSS solutions, you can be confident in correct grading, payment, and product profitability.
- 317 Givaudan Flavors Corp.**, 1199 Edison Dr., Cincinnati, OH, 45216 U.S.A.; Telephone: +1.513.948.5616; Fax: +1.513.948.4978; Web: [www.givaudan.com](http://www.givaudan.com). As the leading company in the flavors and fragrances industry, Givaudan creates and manufactures unique and innovative taste and smell solutions. They are developed for global, regional, and local food and beverage manufacturers as well as household, personal care, and fine fragrance companies.
- 807\* Glanbia Nutritionals**, 5951 McKee Rd., Suite 201, Fitchburg, WI, 53719 U.S.A.; Telephone: +1.608.316.8500 or 1.800.336.2183; Fax: +1.608.316.8504; Web: [www.glanbianutritionals.com](http://www.glanbianutritionals.com). Glanbia Nutritionals offers a portfolio of flaxseed products with industry-leading stability process, MeadowPure, which ensures shelf life of up to two years in milled form. Our portfolio also includes OptiSol functional flaxseed products for replacing gum systems, increasing shelf life, and improving nutrition in baked goods and cereal products.
- 801 GNT USA, Inc.**, 660 White Plains Rd., Tarrytown, NY, 10591 U.S.A.; Telephone: +1.914.524.0600; Fax: +1.914.524.0681; Web: [www.gntusa.com](http://www.gntusa.com). GNT is the leading global producer of cutting edge food and beverage ingredients made exclusively from fruits, vegetables, and edible plants. With a focus on natural coloring

solutions, GNT stands alone as the industry authority, providing innovative color solutions to many of the world's favorite food and beverage brands.

**600\*** **Gold Coast Ingredients**, 2429 Yates Ave., Commerce, CA, 90040 U.S.A.; Telephone: 1.800.352.8673; Fax: +1.323.724.9354; Web: www.goldcoastinc.com. Gold Coast Ingredients is committed to bringing you the finest flavors and food products at a fair value, delivered with service that is unsurpassed in promptness, courtesy, and consistency.

**400\*** **Grain Millers, Inc.**, 10400 Viking Dr., Suite 301, Eden Prairie, MN, 55344 U.S.A.; Telephone: +1.952.829.8821 or 1.800.232.6287; Fax: +1.952.829.8819; Web: www.grainmillers.com. Specialty grain processors of conventional, organic, and non-GMO oats, wheat, barley, rye, corn, triticale, oat fiber, soybeans, flax seeds, legumes, ancient grains, and more. The company operates seven facilities in North America and is fully certified kosher, organic, SQF level 3, and BRC.

**See our ad on the back of the Recognitions tab.**

**108\*** **Grain Processing Corp.**, 1600 Oregon St., Muscatine, IA, 52761 U.S.A.; Telephone: +1.563.264.4265; Fax: +1.563.264.4289; Web: www.grainprocessing.com. Quality ingredients for the food industry from GPC: MALTRIN maltodextrins and corn syrup solids, MALTRIN QD (quick dispersing) maltodextrins and corn syrup solids, PURE-COTE binding/coating starches, INSCOSITY cold water swelling starches, PURE-DENT PFP and specialty starches, PURE-SET thin-boiling starches, PURE-GEL stabilized starches, and TruBran corn bran.

**501\*** **Great Plains Analytical Laboratory (formerly CII Laboratory)**, 9503 N. Congress Ave., Kansas City, MO, 64153 U.S.A.; Web: www.gpalab.com. The leading cereal chemistry laboratory in the United States is an ISO 17025 certified laboratory providing extensive services dedicated to the grain, milling, and baking industries. As a full-service laboratory, GPAL also provides other extensive analytical capabilities that include microbiology, chromatography, mycotoxin and vitamin analyses, foreign material, and nutritional testing.

**See our ad on the inside back cover.**

**114\*** **Hesco, Inc./Dakota Organic Products**, 500 19th St. SW, Watertown, SD, 57201 U.S.A.; Telephone: +1.605.884.1100; Web: www.hesco-inc.com. Hesco Inc. is a privately held, certified Women's Business Enterprise with multiple production facilities and custom grower networks. Hesco specializes in cleaning, milling, cracking, blending, and packaging of whole and processed grains. Hesco's facilities are BRC and AIB certified, FDA-registered, USDA and QAI certified organic, and OU certified kosher.

**705** **ICC/MoniQA/Healthgrain**, Marxergasse 2, Vienna 1030, Austria; Telephone: +43.1.707.72020 or +43.1.707.72040; Web: www.icc.or.at. ICC is the pre-eminent international association in the field of cereal science and technology,

committed to international cooperation through the dissemination of knowledge, conducting research, and developing standard methods that contribute to improved food quality, food safety, and food security for the health and well-being of all people.

**308\*†** **ICL Performance Products LP**, 622 Emerson Rd., Suite 500, St. Louis, MO, 63141 U.S.A.; Telephone: +1.314.983.7500 or +1.314.983.7940; Fax: +1.314.918.0617; Web: www.icl-pp.com. Technologies for healthy baked goods including Licresse natural antioxidant, sodium reduction tools: Salona low sodium sea salt and calcium-rich, zero sodium family of Levona leavening agents, Allegro, Brio, Mezzo, and Opus. Nutritional benefits with Cal-Sistent calcium, Magnificent magnesium source and potassium ingredients. Plus phosphates for leavening, shelf-life, dough conditioning.

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**811\*** **InfraReady Products Ltd.**, 1438 Fletcher Rd., Saskatoon, SK, S7M5T2 Canada; Telephone: +1.306.242.4950; Fax: +1.306.242.4213; Web: www.infrareadyproducts.com. Since its inception in 1994, InfraReady Products has provided its customers with value-added food ingredients derived from whole grains. If wholesome and healthy food is to be the best medicine, then how do food manufacturers, regardless of sector, capture "the good we get from grain"? Welcome to InfraReady Products.

**403\*** **Ingredient Inc. (formerly Corn Products International)**, 5 Westbrook Corporate Center, Westchester, IL, 60154 U.S.A.; Telephone: +1.708.551.2600; Web: www.ingredient.com.

**419\*** **Innophos, Inc.**, 259 Prospect Plains Rd., Building A, Cranbury, NJ, 08512 U.S.A.; Telephone: +1.605.495.2495; Web: www.innophos.com. Reduce the Sodium—Keep the Taste. Our challenge is to reduce sodium content without changing product characteristics such as flavor, texture, and appearance. Innophos provides solutions with a broad range of phosphates for applications in baking. Discover CAL-RISE, a unique non-sodium calcium-based slow acting leavening agent for healthy baking.

**608** **International Fiber Corp.**, 50 Bridge St., North Tonawanda, NY, 14120 U.S.A.; Telephone: +1.716.693.4040; Web: www.ifcfiber.com. IFC gives you many ways to improve your products using Solka-Floc and JustFiber functional fibers. We can assist you whether you want to make a fiber claim or need the functionality that fiber can offer. We have the fiber solutions to improve your product success and help manage your costs.

**201** **International Flavors & Fragrances Inc.**, 150 Docks Corner Rd., Dayton, NJ, 08810 U.S.A.; Telephone: +1.732.329.4600; Web: www.iff.com. IFF is a leading creator of flavors and fragrances used in a wide variety of consumer products and packaged goods. The company leverages its competitive advantages of brand and consumer understanding combined with its focus on R&D and innovation to provide customers with differentiated product offerings. Visit us at www.iff.com.



- 312\*** **J. Rettenmaier USA LP**, 16369 U.S. 131 Hwy., Schoolcraft, MI, 49087 U.S.A.; Telephone: +1.269.679.2340; Fax: +1.269.679.2364; Web: www.jrsusa.com. J. Rettenmaier VITACEL functional, label-friendly, dietary fibers contribute nutritional benefits, e.g., increased satiety and calorie reduction, to a variety of fiber-enriched food and beverage applications and technologically advanced food products. Products: VITACEL powdered cellulose, oat, wheat, potato, pea, sugarcane, apple, and orange fibers, and microcrystalline cellulose.
- 713** **Kansas State University (Department of Grain Science & Industry)**, Shellenberger Hall, Kansas State University, Manhattan, KS, 66506 U.S.A.; Telephone: +1.785.532.6161; Fax: +1.785.532.7010; Web: www.grains.k-state.edu. The department is the only institution in the United States offering college degrees in bakery science, milling science, and feel science—granting not only B.S. degrees in these areas but also graduate degrees and minors programs. A variety of technical short courses are offered through its International Grains Program.
- 303** **Kudos Blends Ltd.**, Old Station Business Park, Cleobury Mortimer, Kidderminster, DY14 8SY United Kingdom; Telephone: +44.129.927.1333 or +44.129.927.1333; Fax: +44.129.927.1999; Web: www.kudosblends.com. Kudos Blends is the leading manufacturer of raising agents for the baking industry. KUDOS potassium bicarbonate HP grade has been developed for sodium reduction in baked goods; its hydrophobic nature maintains the free-flowing quality of the powder and has a very fine particle size distribution for maximum functionality.
- 500** **Lab Synergy**, 374 Pulaski Hwy., P.O. Box 708, Goshen, NY, 10924 U.S.A.; Telephone: 1.866.435.7897 or +1.845.258.1200; Fax: +1.845.258.1208; Web: www.labsynergy.com. Lab Synergy is a provider of instrumentation specializing in assisting cereal grain manufacturers with their qualitative/quantitative measurements. We can quantify/characterize multiple constituents present in cereal grains “near” line. Protein, fat/oil content, salt and acidity, starch damage, and more. Please drop by our booth and ask for an on-site presentation!
- 703\*** **Lallemand Baking Solutions**, 1620 Prefontaine, Montreal, Quebec, H1W 2N8 Canada; Telephone: +1.514.251.3620; Fax: +1.514.255.6861; Web: www.lallemand.com. Lallemand Baking Solutions is the specialty baking ingredients business of Lallemand Inc., the Canadian yeast and bacteria company supplying Essential enzyme-based dough conditioners, Fermaid yeast-based dough relaxers, and Florapan cultures to the global baking industry. Also offering Bocker ready-to-use cultured flours in North America. Ready to design a baking solution for you.
- 719\*** **Malt Products Corp.**, 88 Market St., Saddle Brook, NJ, 07663 U.S.A.; Telephone: 1.800.526.0180; Fax: +1.201.845.0028; Web: www.maltproducts.com. Worldwide supplier of sweeteners including liquid and dry malts, sugar cane molasses grades, and rice, tapioca, agave, wheat, oat, and rye syrups. Most grades of corn sweeteners also available. Products are kosher and GRAS. Pails, drums, totes, and tank truck packaging. Distribution points allow for efficient delivery.
- 118** **Mane Inc.**, 2501 Henkle Drive, Lebanon, OH 45036, U.S.A.; Telephone: +1.513.248.9876; Fax: +1.513.248.8808; Web: www.mane.com. Mane is a fifth generation, privately held flavor and fragrance company with operations spanning 21 manufacturing sites globally. Mane delivers cutting-edge flavors, seasoning blends and a unique expertise for designing sweet and savory products, combined with an unrivalled knowledge of natural raw materials.
- 314\*** **McCormick & Co., Inc.**, 18 Loveton Circle, Sparks, MD, 21152 U.S.A.; Telephone: +1.410.771.7301; Web: www.mccormickcorporation.com. McCormick will be demonstrating new flavors and seasonings on cereal based bars and new snack bites. These are based on the latest global food trends.
- 518** **Medallion Laboratories**, 9000 Plymouth Ave. N., Golden Valley, MN, 55427 U.S.A.; Telephone: 1.800.245.5615; Fax: +1.763.764.4010; Web: www.medallionlabs.com. Since 1974, Medallion Labs, a division of General Mills, has been a technical leader in the food industry. Through Medallion, a great resource is available to help you learn more about your products, ingredients, or packaging. Areas of expertise include: specialty fiber, food safety, nutritional labeling, chemistry, shelf-life, and microbiology.
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- See our ad on the front of the Exhibition tab.**
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- 401\*** **Megazyme International Ireland Ltd.**, Bray Business Park, Southern Cross Rd., Bray, Co. Wicklow, Ireland; Telephone: +353.1.2861220; Fax: +353.1.2861264; Web: www.megazyme.com. A leading manufacturer of test kits and reagents. The total dietary fiber, total starch, fructan, and beta-glucan assay kits developed are world standard methods. The recently developed integrated total dietary fiber method has been successfully evaluated by AACCI, AOAC International, and accepted as a CODEX Alimentarius type 1 method.
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- See our ad on the back of the Index tab.**
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- 200\*** **The Mennel Milling Co.**, 128 W. Crocker St., P.O. Box 806, Fostoria, OH, 44830 U.S.A.; +1.419.435.8151 or 1.800.688.8151; Fax: +1.419.436.5150; Web: www.mennel.com. The Mennel Milling Company is one of the leading soft wheat millers in the country and specializes in custom milling. In addition, Mennel produces hard and spring wheat flours and heat treated flours. Mills are located in Fostoria and Bucyrus, OH; Dowagiac, MI; Roanoke, VA; and Mt. Olive, IL.
- 610\*** **Merlin Development, Inc.**, 181 Cheshire Lane, Suite 500, Plymouth, MN, 55441 U.S.A.; Telephone: +1.763.475.0224; Web: www.merlindevelopment.com. Merlin Development provides contract R&D services to the food and beverage industry. Merlin provides creative and science-based solutions to deliver new or improved products to meet and exceed consumer’s expectations. Our extensive experience in product development can resolve your unique challenges from prototype development through production start-ups.



- 502\*** **MGP**, 100 Commercial St., Atchison, KS, 66002 U.S.A.; Telephone: 1.866.547.2122 or +1.913.360.5217; Fax: +1.913.360.5717; Web: www.mgpingredients.com. In business since 1941, MGP provides a host of specialty wheat proteins and starches, including dietary fiber, for use in bakery and prepared foods, as well as protein isolates for protein enrichment, an extensive line of starches that aid in the formulation of low sodium foods, and textured proteins for vegetarian applications.
- 704\*** **Mid-America Food Sales, Ltd.**, P.O. Box 904, Northbrook, IL, 60065 U.S.A.; Telephone: +1.847.945.0104; Fax: +1.847.945.0424; Web: www.midamfoods.com. Mid America Food Sales, Ltd., is an international food ingredient, marketing, and consulting company. We provide solutions to the food and nutritional industry. Our focus is fiber, specialty grains, prebiotics, probiotics, organic grains, ancient grains, custom blending, packaging, nut butters, dairy proteins, pea & rice proteins, cocoa, cereal, and cookie inclusions.
- 604** **Mother Murphy's Laboratories**, 2826 S. Elm St., Greensboro, NC, 27406 U.S.A.; Telephone: +1.336.273.1737 or 1.800.849.1277; Fax: +1.336.273.0858; Web: www.mothermurphys.com. Mother Murphy's produces flavorings and extracts for many industries including cereal and grain. Our goal is to help you produce the highest quality product every time. From granola and whole-grain breads to the latest fruit and spice combinations in today's cereals, we're here to put the flavor in.
- 701\*** **Navas Instruments LLC**, 200 Earnhardt St., Conway, SC, 29526 U.S.A.; Telephone: +1.843.347.1379; Fax: +1.843.347.2527; Web: www.navas-instruments.com. As the leader in macro thermogravimetric analysis technology, we bring the analysis of moisture and ash to a new standard of automation, efficiency, and reduced analysis time. High capacity, high throughput instruments for 76 samples per batch, allowing hundreds of samples per day.
- 618†** **Nexira**, 15 Somerset St., Somerville, NJ, 08876 U.S.A.; Telephone: +1.908.707.9400 or 1.800.872.1850; Fax: +1.908.707.9405; Web: www.nexira.com. Nexira is the world leader in acacia gum and a premier supplier of active natural ingredients for the food, nutrition, and health and wellness industries. Nexira's portfolio of products includes emulsifiers, stabilizers, texturizing and coating agents, antioxidants and actives for weight-management, anti-stress, along with a large number of botanical extracts.
- 212\*** **NP Analytical Laboratories**, Checkerboard Sq., St. Louis, MO, 63164 U.S.A.; Telephone: 1.800.423.6832 or +1.314.982.1310; Fax: +1.314.982.1078; Web: www.npal.com. NP Analytical Laboratories provides comprehensive testing of foods and ingredients for nutrients, contaminants, microbial pathogens, and quality indicators. Services include measurement of vitamins, minerals, dietary fiber, fatty acids, sugars, amino acids, preservatives, fat quality and stability, pesticides, mycotoxins, and complete nutrition labeling services. Microbial shelf-life and challenge studies also offered.
- 711\*** **Oat Ingredients LLC**, 4368 Park Ct., Boulder, CO, 80301 U.S.A.; Telephone: +1.303.818.1117; Fax: +1.413.385.9391; Web: www.oatingredients.com. OatWell oat bran and oat based ingredients. Importer and distributor of OatWell high beta-glucan oat bran ingredients from Swedish oat fiber—CreaNutrition, oat flour and oat oil ingredients, for food and personal care applications. Soluble fiber (beta-glucan) from 14% to 28% and TDF to 50%+.
- 516\*** **Palsgaard Inc.**, 101 Gibraltar Dr., Suite 2B, Morris Plains, NJ, 07950 U.S.A.; Telephone: +1.973.998.7951; Fax: +1.973.998.7953; Web: www.palsgaard.com. Palsgaard is a specialist in manufacturing emulsifiers, stabilizers, and other specialized ingredients for application in the bakery, dairy, chocolate, ice cream, margarine, and fine food sectors. With pilot plants within these areas, Palsgaard offers comprehensive customer support, making the step between initial ideas and production as small as possible.
- 304\*** **Penford Food Ingredients**, 7094 S. Revere Pkwy., Centennial, CO, 80112 U.S.A.; Telephone: +1.303.643.1900; Fax: +1.303.643.1700; Web: www.penford.com. Penford Food Ingredients is a premier carbohydrate company providing the food market with unmodified/modified potato, corn, tapioca, waxy maize, and rice specialty starches, dextrin, resistant starch, and pet treats. It is the leader in ingredient system technology for coatings, meats, dairy, confectionery, bakery, soups/sauces/gravies, and health and wellness applications.
- 300/** **Perten Instruments AB**, Instrumentvägen 31,  
**302\*** Hägersten, SE-126 53 Sweden; Telephone: +46.8.505.80.900; Fax: +46.8.505.80.990; Web: www.perten.com. Spanning breeding to packaging, we provide the right NIR instrument for your situation. Our diode-array NIR analyzers are leaders in the cereals industry and include single-seed, whole-grain, at-line, in-line, and on-line options. Our AM5200-A grain moisture meter—NTEP approved/USDA certified. Rheological/physical testers—doughLAB, RVA, TVT-Texture, BVM-Volume, Glutomatic.
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- See our ad on page 1.**
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- 300/** **Perten Instruments Inc.**, 6444 S. 6th St. Rd.,  
**302\*** Springfield, IL, 62712 U.S.A.; Telephone: +1.217.585.9440; Fax: +1.217.585.9441; Web: www.perten.com. Analyzers for functional and compositional characterization of grains, ingredients, in-process, and finished products. Measure what's in your materials and how they will perform. Test for moisture, protein, ash, fat/oil, fiber, sugars, texture, falling number, gluten content and quality, dough rheology, starch pasting characteristics, viscosity, volume, and so much more.

- 211 Prayon Inc.**, 1610 Marvin Griffin Rd., Augusta, GA, 30906 U.S.A.; Telephone: 1.800.4PRAYON, Fax: +1.706.771.3469; Web: [www.prayon.com](http://www.prayon.com). Prayon offers a complete range of leavening agents and mineral enrichment phosphates including MCP, DCP, TCP, SAPP-28, SAPP-40, and SAPP-43 for baking and cereal applications. Our food applications laboratory enables us to offer innovative products aligned with the latest industry trends. Explore the Praylev and Prayphos line of innovative phosphates.
- 709\* QualiTech, Inc.**, 318 Lake Hazeltine Dr., Chaska, MN, 55318 U.S.A.; Telephone: +1.952.448.5151; Fax: +1.952.448.3603; Web: [www.qualitechco.com/food](http://www.qualitechco.com/food). QualiTech is passionate about developing creative solutions in bakery goods, snacks, cereals, and more. Our inclusions and particulates offer great flavor, texture, function, and visual appeal to your proprietary products. They also serve as delivery systems for unique ingredients such as omega3s, fiber, fruit content, nutraceuticals, and proteins.
- 503\*† QualySense AG**, Uberlandstrasse 129, Dübendorf, CH-8600 Switzerland; Telephone: +41(0)44.824.35.80; Web: [www.qualysense.com](http://www.qualysense.com). QualySense is the worldwide industry leader focused on delivering innovative high-end sorting solutions to achieve optimal processing, quality, and safety of agricultural products. QualySense devices analyze and sort individually and at high speed grains, seeds, and beans according to biochemical and morphological traits.
- 517\* R-Biopharm Inc.**, 870 Vossbrink Dr., Washington, MO, 63090 U.S.A.; Telephone: 1.877.789.3033; Fax: 1.866.922.5856; Web: [www.r-biopharm.com](http://www.r-biopharm.com). R-Biopharm develops, manufactures, and markets rapid enzyme immunoassays for the detection of residues in food and feed. They include test kits for mycotoxins, hormones and anabolics, antibiotics, vitamins, food allergens, microbiology, and hygiene. R-Biopharm has a complete portfolio of allergen testing formats ranging from lateral flow, ELISA, and real-time PCR. The RIDASCREEN Gliadin recently received AOAC official first action status. The RIDASCREEN Gliadin uses the Codex Alimentarius recommended “R5” gliadin antibody, which is generally accepted as the standard method for the detection of gluten in foods. The method uses the unique, patented Cocktail Solution according to Mendez, ensuring a correct quantification of gliadin.
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- 311 Sensient Flavors LLC**, 5600 W. Raymond St., Indianapolis, IN, 46241 U.S.A.; Telephone: 1.800.445.0073; Web: [www.sensientflavors.com](http://www.sensientflavors.com). Sensient Flavors offers value-added flavor systems that bring life to products! With industry-leading expertise in the savory, beverage, and sweet markets, we provide comprehensive solutions that meet requirements. Thanks to our wide-ranging product library, development teams, and cutting-edge facilities, we’re able to implement technical solutions for your most complex challenges.
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- 508 Siemer Specialty Ingredients**, 111 W. Main St., Teutopolis, IL, 62467 U.S.A.; Telephone: +1.217.857.2231 or 1.800.826.1065; Fax: +1.217.857.3092; Web: [www.siemersi.com](http://www.siemersi.com). Siemer Specialty is a division of Siemer Milling Company that focuses on adding value to traditional soft wheat flour. We utilize a state-of-the-art facility to apply a controlled heat-treatment in order to stabilize, improve/change functionality, and dramatically lower the microbiological activity. We have HT flour that can naturally replace modified food starch and chlorinated cake

flour. We also have flour that improves coating systems. Stabilized wheat bran, germ, and whole wheat flour are great additions to any formula where adding nutrition is key. Call Rob Ferguson at 217.857.2231 or email at rferguson@siermilling.com for more information.

- 614 SPEX SamplePrep**, 15 Liberty St., Metuchen, NJ, 08840 U.S.A.; Telephone: +1.732.623.0465; Fax: +1.732.906.2492; Web: www.spexsampleprep.com. SPEX SamplePrep will be at booth 614. Our 2010 Geno/Grinder is a high-throughput plant tissue homogenizer, and our freezer/mills are powerful cryogenic mills that grind tough samples while maintaining them in liquid nitrogen. Our equipment is specifically designed for extracting DNA/RNA from plant tissues while preserving the sample's integrity.
- 619\* SunOpta Ingredients Group**, 100 Apollo Dr., Chelmsford, MA, 01824 U.S.A.; Telephone: +1.781.276.5141 or 1.800.353.6782; Web: www.sunopta.com/ingredients. SunOpta Ingredients offers a family of quality fibers and the experience to help you select the right fiber for your product and consumer. SunOpta offers oat fiber, soy fiber, pea fiber, stabilized bran (oat/wheat/corn), stabilized wheat germ, insoluble and soluble fiber blends, and new to the portfolio is rice fiber.
- 609\* Symrise Inc. – Flavor & Nutrition Division**, 300 North St., Teterboro, NJ, 07608 U.S.A.; Telephone: +1.201.288.3200; Web: www.symrise.com. Symrise is a global supplier of flavors and fragrances while also manufacturing raw materials and active ingredients for the food, perfume, and cosmetics industries. Its sales of €1.58 billion in 2011 place the company among the top four in the international flavors and fragrances market. Taste is the heart of our business.
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- 204\* Thymly Products Inc.**, P.O. Box 65, 1332 Colora Rd., Colora, MD, 21917 U.S.A.; Telephone: +1.410.658.4820 or 1.877.710.2340; Fax: +1.410.658.4824; Web: www.thymlyproducts.com. Thymly Products Inc. is a family owned manufacturer of quality food ingredients since 1967. We serve all aspects of the food industry and can formulate ingredients to your needs. Thymly is known for baking powder, yeast foods, dough conditioner, food grade chemicals, grain blends, shelf-life systems, and dry milks.
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- 504 TNO Nutrition & Food Research Institute**, Utrechtseweg 48, Zeist, Utrecht, 3704 HE The Netherlands; Telephone: +31.888.66.16.93 or +31.888.66.18.34; Fax: +31.888.66.69.69; Web: www.tno.nl/food. TNO, your research partner in food and nutrition. The world needs healthy, safe, and sustainably produced food products more than ever. Within the framework of national and international legislation, the agrifood sector launches over 15,000 product innovations a year. TNO develops methods and produces research insights that enable innovation.
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- 417\* Wenger Manufacturing, Inc.**, 714 Main St., Sabetha, KS, 66534 U.S.A.; Telephone: +1.785.284.2133; Fax: +1.785.284.3861; Web: www.wenger.com. Wenger manufactures state-of-the-art commercial extrusion cooking systems ranging in size from small laboratory and research applications to large production applications. In addition to 15 sizes of twin screw and single screw extruders, such systems typically include continuous drying and toasting ovens, mixers, blenders, automated control systems, and enrobing equipment.

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- 514\* The Wright Group**, 6428 Airport Rd., Crowley, LA, 70526 U.S.A.; Telephone: 1.800.201.3096; Fax: +1.337.783.3802; Web: www.thewrightgroup.net. The Wright Group is an industry leader in the development of custom nutrient premixes, the enrichment of rice and grains, the microencapsulation of vitamins, minerals, and omega-3, as well as a complete line of bakery applications.

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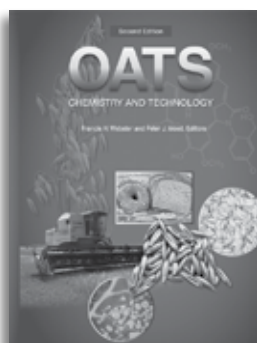
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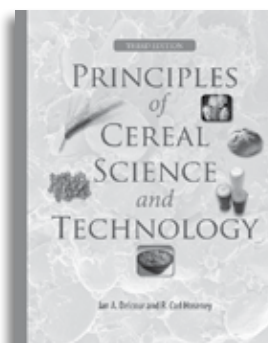
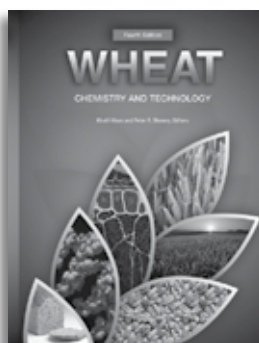
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**AACC International**  
3340 Pilot Knob Road  
St. Paul, MN 55121 U.S.A.

**Phone:** +1.651.454.7250

**E-mail:** aacc@scisoc.org

**Website:** www.aaccnet.org

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