Midwest AOAC 2010 Annual Meeting and Exposition

June 7-9, 2010

Minneapolis, Minnesota

AOAC INTERNATIONAL

The Scientific Association Dedicated to Analytical Excellence

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2010 Mid-West Section AOAC Annual Meeting
June 7-9, 2010
Minneapolis, MN

Meeting At-A-Glance

MONDAY June 7, 2010

Exhibitor Set-Up …… Park Ballroom	8:00 AM – 5:00 PM
Casper-Hefle Memorial Golf Tournament …… The Refuge Golf Course, Sponsored and hosted by R-BioPharm	10:00 AM – 5:00 PM
REGISTRATION ……..	3:30 PM – 7:30 PM
Mid-West Section AOAC Board Meeting …… Orchard Suite	5:00 PM – 6:00 PM
Vendor's Exposition and Welcome Reception ……. Lower Atrium	6:00 PM – 9:00 PM

TUESDAY June 8, 2010

REGISTRATION	7:30 AM – 11:30 AM
Vendor's Exposition …….. Park Ballroom	11:00 AM – 2:00 PM
SYMPOSIUM: Fibers in Foods: Analysis and Interpretation …….. Chair: Jonathan DeVries of General Mills/Medallion Laboratories Terrace 1	8:00 AM – 11:30 AM
SYMPOSIUM: The New Official Methods of Analysis Validation Process ….... Chair: John Szpylka of the AOAC Official Methods Board Terrace 2	8:00 AM – 11:30 AM
SYMPOSIUM: Pertinent UPLC Applications in the Real World…….. Chair: Barb Chinnock of Waters Terrace 3	8:00 AM – 11:30 AM

Lunch …….. 12:00 PM – 1:00 PM
Lower Atrium

SYMPOSIUM: Residue Analysis in Foods and Water…….. 1:30 PM – 5:00 PM
Chair: Kelly Dorweiler of General Mills
Terrace 1

SYMPOSIUM: Manure Analysis ……..... 1:30 PM – 5:00 PM
Chair: Jerry Floren of Minnesota Department of Agriculture
Terrace 2

WORKSHOP: Waters Corporation – UPLC Systems …….. 1:00 PM – 5:00 PM
Terrace 3

Evening Social – Gambling With Friends …… 6:00 PM – 9:00 PM
Sponsored by Thermo Scientific
Doubletree Atrium

WEDNESDAY June 9, 2010

REGISTRATION …….. 7:30 AM – 11:30 AM

Vendor's Exposition …….. 11:00 AM – 1:30 PM
Park Ballroom

SYMPOSIUM: New Updates in Feed Analysis…… …….. 8:00 AM – 11:30 AM
Chair: Lawrence Novotny of South Dakota State University
Terrace 1

SYMPOSIUM: Food Safety …….. 8:00 AM – 11:30 AM
Chair: Gerry Broski of Thermo Scientific
Terrace 2

SYMPOSIUM: Vendor Lectures – New Offerings..…….. 8:00 AM – 11:30 AM
Terrace 3

Lunch ……. 12:00 PM – 1:00 PM
Sponsored by Medallion Laboratories
Lower Atrium

SYMPOSIUM: Veterinary Toxicology ……..... 1:30 PM – 5:00 PM
Co-Chair: Paula Imerman of the Iowa State University
Co-Chair: Steve Ensley of the Iowa State University
Terrace 1

WORKSHOP: Thermo Scientific – Mass Spec Systems …….. 1:30 PM – 5:00 PM
Terrace 2

THE MIDWEST AOAC WOULD LIKE TO THANK THE FOLLOWING SPONSORS FOR SUPPORTING THIS YEAR'S ANNUAL MEETING AND FOR THEIR GENEROUS SUPPORT OVER THE YEARS.

THANK YOU!!

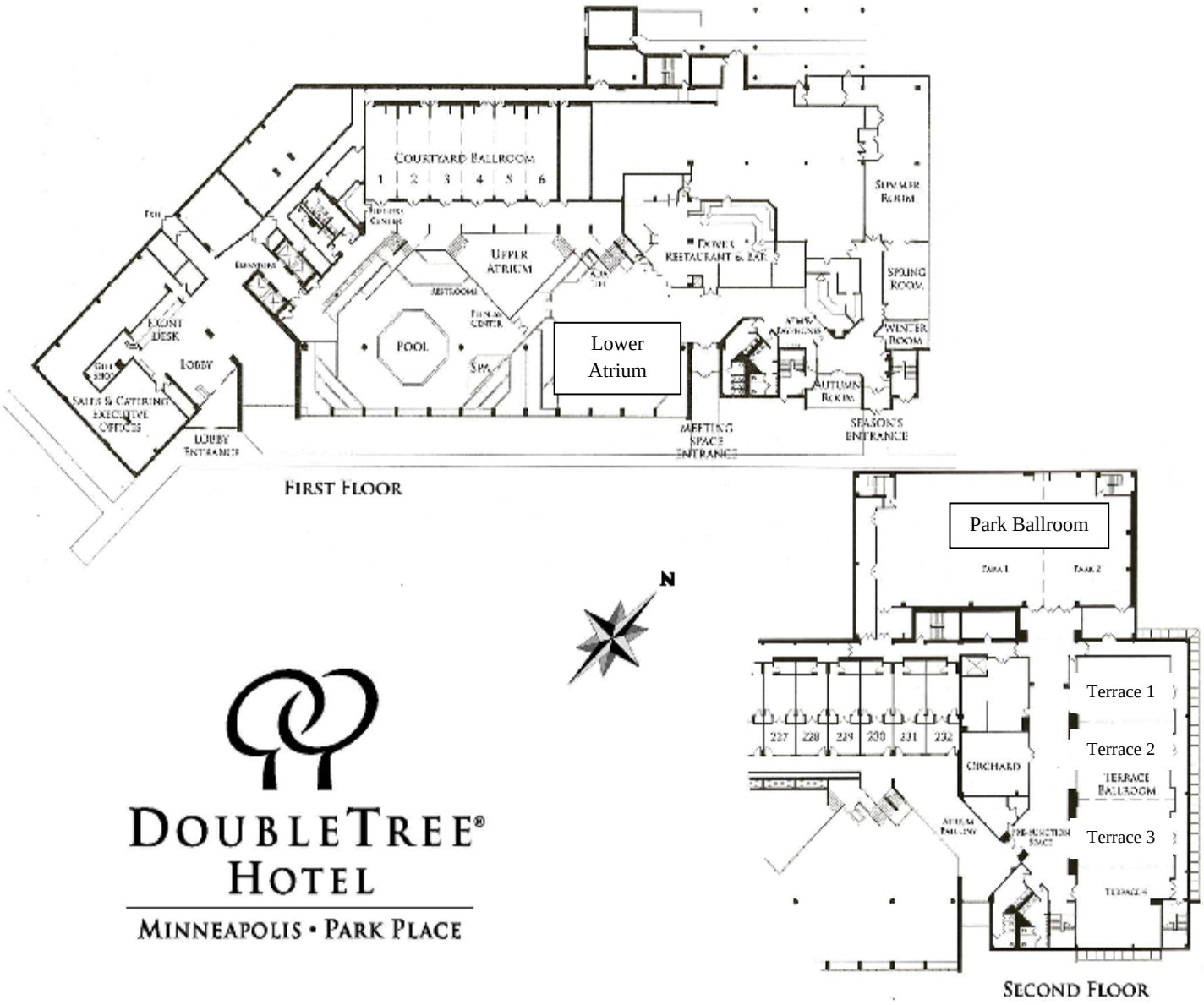
r-biopharm

MEDALLION LABS

Trust The Minds of Medallion.

Thermo SCIENTIFIC

MAP OF THE VENUE



DOUBLETREE® HOTEL
MINNEAPOLIS • PARK PLACE

A LETTER FROM THE PRESIDENT

Welcome Colleagues and Friends,

Welcome to the 2010 Annual Meeting of Midwest Section of AOAC. The annual meetings of this section continue to be one of the best section meetings of AOAC and this tradition will continue this year given the quality of the topics to be presented, the list of expected attendees & presenters, and the dedication and support of the exhibitors.

I was introduced to the Midwest Section in 1997 and have always been impressed by the members of this section. The people I have met are all exceptional professionals who are extremely dedicated to improving the quality of science. Over the years I have developed a deep respect for those I have worked alongside and many of those relationships have also become lasting friendships. Knowing these people has made me a better scientist and a better person. I encourage each of you to get to know at least a few others at this meeting so you can experience the same emotions.

The quality of the scientific work we do has always been important to the safety of the planet, the safety of the food supply, and the quality of everyone's lives. The ever-changing world we live in relies on our contributions to properly measure what is occurring and how to best use that information. AOAC International is a leader in this effort and the Midwest Section allows us to focus on the areas central to us. I ask each of you to actively contribute to the activities of this group so we can continue to be a positive force.

I hope all of you enjoy and benefit from this meeting.

Best Regards,
John Szpylka
Section President Midwest AOAC

REGISTRATION AND DESK HOURS

Registration is located outside the conference rooms. It will be open during the following hours:

Monday. June 7, 2010 …… 3:30 pm – 7:30 pm
Tuesday. June 8, 2010 …… 7:30 am – 11:30 pm
Wednesday, June 8, 2010 …… …… 7:30 am – 11:30 pm

TUESDAY EVENING SOCIAL

Sponsored by Thermo Scientific

On Tuesday, June 8, you are invited to a dinner followed by a night of Gambling for Prizes in the hotel Atrium. Each attendee will be given a stack of chips to try their luck at Black Jack, Three-Way Action Poker, Hazard Dice, and Texas Hold'em Poker. For every hundred chips you have at the end of the evening you will be given a raffle ticket to try for one of the exciting door prizes.

I hope you can come down for a night of fun with friends and to see how lucky you can be.
Also, a big thank you to Thermo Scientific for their sponsorship of this event.

Dinner ……6:00 pm – 7:00 pm
Gambling ….…….7:00 pm –8:45 pm
Prize Awards ……..……9:00 pm

AOAC INTERNATIONAL MEMBERSHIP INFORMATION

AOAC Member benefits include:

- Online Access to the Official Methods of Analysis
  - Search by keyword, category, method number.
  - View the full text of methods and references J. AOAC articles (for newer methods).
- Online Membership Directory
  - Search for colleagues individually or by committee.
  - Review profiles and demographic Information.
  - Update your profile.
- Online Community Forums
  - Participate in discussions relating to current topics or create a new discussion topic.
  - Discuss and evaluate methods posted by a community.
  - View announcements and agendas of upcoming meetings.
  - Read news of interest to the communities.
- Networking
- Subscription to ***Inside Laboratory Management***, the official publication of AOAC.
- Get **Preferred Member Pricing** on AOAC products and services including publications, conference and training registrations.

Membership Eligibility

Individuals with a degree in science (or equivalent if approved by the Board of Directors) are eligible for membership in AOAC International. Individuals should be engaged directly or indirectly in analysis or analytical science ib fields relevant to the mission of the Association.

How to Join

To join AOAC ONTERNATIONAL now, to renew a membership, or for more information, visit the AOAC INTERNATIONAL web site at ***www.aoac.org***, or contact us at *members@aoac.org*.

EXHIBITORS

I would like to personally thank all the exhibitors who are supporting this year's Midwest Section Annual Meeting.

Please stop by our exhibitors' booths to learn how their businesses can work with yours.

Exhibitor	Representatives
Agilent	Vicki Lanyon, John Sausen
CEM	Dan Alvarez, Cindy Condreay
Elementar Americas, Inc	Ken Slight
Foss North America	Marcy Russell, Michael Busch
Hitachi	Wade Swartz
Lab Synergy	Jason Romberg
LECO	Rod Neely
Medallion Labs	Sarah Klaus Ryan, Vicki Dunn, Melissa Burckhardt
Midland Scientific	Jack Gondring, Katy Gondring
Minnesota Valley Testing Labs (MVTL)	John Delahanty, Joel Sieh
Pace Analytical Services, Inc.-LabOps Division	Marti Joyer, Luke Kramer
Pickering Laboratories	Wendy Rasmussen, David Mazawa
R-Biopharm	Sean Tinkey, Kurt Johnson
Retsch	Kyle James, Jacqui Town
Romer	Michael Prinster, Audra Prinster
Thermo Scientific	Gerry Broski, James Kalbron
Waters	Barbara Chinnock, Cari Randles

DAILY PLANNER

Monday
June 7, 2010

Exhibitor Set-Up …… 8:00 AM – 5:00 PM
Park Ballroom

Casper-Hefle Memorial Golf Tournament …… 10:00 AM – 5:00 PM
The Refuge Golf Course, Sponsored and hosted by R-BioPharm

REGISTRATION …….. 3:30 PM – 7:30 PM

Mid-West Section AOAC Board Meeting …… 5:00 PM – 6:00 PM
Orchard Suite

Vendor's Exposition and Welcome Reception ……. 6:00 PM – 9:00 PM

Tuesday
June 8, 2010

Exhibitor Hours …… 11:00 AM – 2:00 PM
Park Ballroom

REGISTRATION …….. 7:30 AM – 11:30 AM

SYMPOSIUM: Fibers in Foods: Analysis and Interpretation
Chair: Jonathan DeVries of General Mills/Medallion Laboratories
Room: Terrace 1

Welcome and Introductions ……. 8:30 AM – 8:35 AM

Variation of Dietary Fiber Methods of Analysis ……. 8:35 AM – 9:05 AM
Paul Wehling of General Mills

Validating AOAC Official and AACC Approved ……. 9:05 AM – 9:35 AM
Methodology Commensurate with Dietary Fiber
Research and Definitions
Jonathan DeVries of Medallion Laboratories

Streamlining the Deionization Process for LMWSDF ..……. 9:35 AM – 10:05 AM
Measurement: Online Deionization
Brett Post of General Mills; Michael Marshak of General Mills

Coffee Break …….. 10:05 AM – 10:30 AM

The Incorporation of Dietary Fiber Into Foods ..…… 10:30 AM – 11:00 AM
(Sample Foods Will Be Provided For Testing)
Michelle Kozora of Tate & Lyle; Annette Evans of Tate & Lyle

Understanding Food Applications Using Insoluble Fiber ……. 11:00 AM – 11:30 AM
(Sample Foods Will Be Provided For Testing)
Dan Inman of J. Rettenmaier USA LP

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SYMPOSIUM: The New Official Methods of Analysis Validation Process ….. 8:30 AM – 11:30 AM
Chair: John Szpylka of the AOAC Official Methods Board
Room: Terrace 2

Welcome and Introductions ……. 8:30 AM – 8:35 AM

Responsibilities of the Official Methods Board ……. 8:35 AM – 9:05 AM
Norma Hill of Alcohol and Tobacco Tax and Trace Bureau

Single laboratory Validation, A Key Step Along the Path to OMAs ……. 9:05 AM – 9:35 AM
John Szpylka of General Mills/Medallion Laboratories
William Hall of Mosaic Fertilizer LLC

Roles and responsibilities of the General Referee and ……..…. 9:35 AM – 10:05 AM
Topic Advisor in Method-Centric Validation
Norma Hill of Alcohol and Tobacco Tax and Trace Bureau

Coffee Break …….. 10:05 AM – 10:30 AM

The Methods' Committees …… ……. 10:30 AM – 11:00 AM
John Szpylka of General Mills/Medallion Laboratories

Open Panel Discussion …….. 11:00 AM – 11:30 AM

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SYMPOSIUM: Pertinent UPLC Applications in the Real World ……. 8:30 AM – 11:30 AM
Chair: Barb Chinnock of Waters Corporation
Room: Terrace 3

NOTE: This session will be followed in the afternoon by a Hands-On Workshop applying the techniques described this morning. The workshop will be held in the same room.

Welcome and Introductions ……. 8:30 AM – 8:35 AM

Melamine Analysis ……..……. 8:35 AM – 9:05 AM
Eric Grumbach of Waters Corporation

One Lab's Experience with Amino Acids by……. 9:05 AM – 9:35 AM
Pre-Column Derivatization with AccQ-Tag Using UPLC
Nancy Thiex from South Dakota State University

Vitamin Analysis by UPLC ……...……. 9:35 AM – 10:05 AM
Don Trinite of Waters Corporation

Coffee Break …….. 10:05 AM – 10:30 AM

Automated Software Solutions for Targeted and Non-Targeted …..… 10:30 AM – 11:00 AM
Screening of Compounds Using Exact Mass MS Technology
Ken Rosnac of Waters Coporation

Open Panel Discussion …….. 11:00 AM – 11:30 AM

Lunch …….. 12:00 PM – 1:00 PM

SYMPOSIUM: Residue Analysis in Foods and Water…… 1:30 PM – 5:00 PM
Chair: Kelly Dorweiler of General Mills
Room: Terrace 1

Welcome and Introductions ……..…….…. 1:30 PM – 1:35 PM

Proof of Concept Method for the Extraction and ..……..……. 1:35 PM – 2:05 PM
Analysis of Trace Level Pesticide Residues in Oils
Employing a Modified QuEChERS Technique
Kelli Dorweiler of General Mills/Medallion Laboratories

Pesticides in Drinking Water and Wastewater: .. ..……..……. 2:05 PM – 2:35 PM
Analytical Methods for Emerging Pollutants
Of Interest
Dr. Edward F. Askew of Askew Scientific Consulting LLC

Latest Innovations in LC-MS/MS Analysis of Pesticide……..… 2:35 PM – 3:05 PM
Residues in Foods
Jack Cappozzo of National Center for Food Safety and Technology

Coffee Break ……. 3:05 AM – 3:35 AM

Analyzing Food and Food Packaging Materials for …..……..……. 3:35 PM – 4:05 PM
Bisphenol A Using Gas Chromatography-Mass Spectrometry
Pamela Noack of Covance Laboratories, Inc., Madison, WI , USA

Open Forum Discussion ……. 4:05 PM – 5:00 PM

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SYMPOSIUM: Manure Analysis ……..... 1:30 PM – 5:00 PM
Chair: Jerry Floren of Minnesota Department of Agriculture
Room: Terrace 2

Welcome and Introductions ……..…….…. 1:30 PM – 1:35 PM

Is There a Statistically Significant Difference in Results for ……. 1:35 PM – 2:05 PM
Total Nitrogen in Manure When Using Total Kjeldahl Nitrogen or
Nitrogen by Combustion Methods?
Jerry Floren of Minnesota Department of Agriculture;

Certification of Soil and Manure Testing Laboratories ….……..……. 2:05 PM – 2:35 PM
By the Minnesota Department of Agriculture
Jerry Floren of Minnesota Department of Agriculture

Evaluation of Soil pH, Nitrate, and Phosphorous Method
Performance Utilizing Laboratory Proficiency Data …….……..… 2:35 PM – 3:05 PM
Robert O. Miller of Soil and Crop Science Department Colorado State University

Coffee Break ……. 3:05 AM – 3:35 AM

Pulverizing Soils for Laboratory Analysis ……..……..… 3:35 PM – 4:05 PM
Robert O. Miller of Soil and Crop Science Department Colorado State University

Open Forum Discussion ……. 4:05 PM – 5:00 PM

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WORKSHOP: How to go to UPLC from HPLC (the nuts and bolts) …….. 1:00 PM – 5:00 PM
Host: Waters Corporation
Room: Terrace 3

1:00 – 2:00 : A Practical Approach to Method Transfer from HPLC to UPLC
Tom Wheat
2:00 - 2:30 Column chemistries for UPLC and HPLC
Eric Grumbach
2:30 Break
3:00 – 5:00 Live demonstration of UPLC and hands on with UPLC tools

The Live demo portion will be 4 stations
1 UPLC-H running live demo of an HPLC method transferred to UPLC Don Trinite Waters
2 Column Selection Tool Eric Grumbach Waters
3 UPLC calculator Tom Wheat Waters
4 Sample Prep Tammy Argentine Waters

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Evening Social – Gambling With Friends …… 6:00 PM – 9:00 PM
Sponsored by Thermo Scientific
Doubletree Atrium

Wednesday
June 9, 2010

Exhibitor Hours …… 11:00 AM – 1:30 PM
Park Ballroom

REGISTRATION …….. 8:00 AM – 12:00 PM

SYMPOSIUM: New Updates in Feed Analysis
Chair: Lawrence Novotny of South Dakota State University
Room: Terrace 1

Welcome and Introductions ……. 8:30 AM – 8:35 AM

Methods Under Study by AAFCO's Laboratory Methods & …… 8:35 AM – 9:05 AM
Services Committee and AOAC's AMC Feed Nutritives,
Additives and Contaminants Group
Nancy Thiex of Olson Biochemistry Labs
South Dakota State University, Brookings SD

The New AAFCO Feed Check Sample Program …… 9:05 AM – 9:35 AM

Victoria Siegel of Office of Indiana State Chemist
Purdue University, West Lafayette IN

Analysis of Starch and Non-Structural Carbohydrates …… 9:35 AM – 10:05 AM
Mary Beth Hall, US Dairy Forage Research Center, Madison WI

Coffee Break ……. 10:05 AM – 10:35 AM

Comparison of Various Amino Acid Methods ……. 10:35 AM – 11:05 AM
John Simpson of National Corn-to-Ethanol Research Center, Edwardsville IL

Open Forum Discussion ……. 11:05 AM – 11:35 AM

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SYMPOSIUM: Vendor Presentations
Chair: Joann Nelson of General Mills
Room: Terrace 2

Welcome and Introductions ……. 8:30 AM – 8:35 AM

Semi - Open Focussed Microwave …… 8:35 AM – 9:05 AM
Methodology for Fast Sequential Sample Preparation
Joe Weitzel of CEM

New Food Safety Solutions from Agilent Technologies …… 9:05 AM – 9:35 AM
Agilent

Achieving Rapid Nitrogen/Protein Analysis for …… 9:35 AM – 10:05 AM
Macro Samples Using the TruMac N Determinator
LECO

Coffee Break ……. 10:05 AM – 10:30 AM

Post-column methods of analysis ……. …….. 10:30 AM – 11:00 AM
Laszlo Torma of Pickering Labs

Using Pace Analytical's Laboratory Experience to……. 11:00 AM – 11:30 AM
All Aspects of Your laboratory
Luke Kramer and Lisa Rettinger of Pace Analytical Services

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SYMPOSIUM: Food Safety …….. 8:30 AM – 11:30 AM
Chair: Gerry Broski of Thermo Scientific
Room: Terrace 3
NOTE: This session will be followed in the afternoon by a Hands-On Workshop applying the techniques described this morning. The workshop will be held in the same room.

Welcome and Introductions ……. 8:30 AM – 8:35 AM

High Resolution Mass Spectrometry and Its Application …..……. 8:35 AM – 9:15 AM
James Chang of Thermo Scientific

How Does GC-MS/MS Increase Sample Throughput and ……. 9:15 AM – 10:00 AM
Productivity for Trace Analysis
Eric Phillips of Thermo Scientific

Coffee Break ……. 10:00 AM – 10:35 AM

LC- MS/MS Analysis of Environmental and Food Residues …… 10:35 AM – 11:30 AM
Using TraceFinder and EQuan Max
Jia Chang; Charles Wang; Jonathan Beck; Dipankar Ghosh of Thermo Scientific

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LUNCH…….. 12:00 PM – 1:00 PM
Sponsored by Medallion Laboratories

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SYMPOSIUM: Veterinary Toxicology……..…….. 1:30 PM – 5:00 PM
Chair: Paula Imerman of the Iowa State University
Chair: Steve Ensley of the Iowa State University
Room: Terrace 2

Welcome and Introductions ……. 1:30 PM – 1:35 PM

Conjugated (Masked) Deoxynivalenol in Feedstuffs and the …… 1:35 PM – 2:05 PM
Feeding of Naturally Contaminated Grain to Pigs
Prof. Trevor K. Smith, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada

Mycotoxin contamination of hail-damaged corn in Iowa …… 2:05 PM – 2:35 PM
Gary Munkvold, Professor of Seed Science Endowed Chair of Iowa State University, Ames, IA 50011

G.I. Content Microscopy: Technique and ……..… 2:35 PM – 3:05 PM
Application to Veterinary Toxicology
Travis Mays, Toxicology Lab Supervisor, Texas Veterinary Medical Diagnostic Laboratory (TVMDL), College Station, TX, 77843

Coffee Break ……. 3:05 AM – 3:30 AM

Mycotoxins in the Midwest in the 2009 Corn Harvest……..… 3:30 PM – 4:00 PM
Steve Ensley, Clinical Toxicologist, Veterinary Diagnostic Lab, Iowa State University, Ames, IA 50011

Preliminary Work on Development of an LC-MS/MS Screen ……..… 3:30 PM – 4:00 PM
For Mycotoxins in Corn
Paula M. Imerman, Clinician/Chief Chemist, Veterinary Diagnostic Lab, Iowa State University, Ames, IA 50011

WORKSHOP: High Resolution Mass Spec Applications …….. 1:30 PM – 5:00 PM
Host: Thermo Scientific
Room: Terrace 3

1:30 – 2:00 : High Resolution Mass Spec and it's Applications summary
James Chang
2:00 - 5:00 Live demonstrations

James Chang Exactive Workshop Workstation

Eric Phillips GC Workshop Workstation

Jia Wang TraceFinder Workshop Workstation

PRESENTATION ABSTRACTS

FIBERS IN FOODS: ANALYSIS AND INTERPRETATION SYMPOSIUM

Wednesday June 8, 2010 8:30-11:30
Terrace 1

Validating AOAC Official and AACC Approved Methodology Commensurate with Dietary Fiber Research and Definitions

Jonathan W. DeVries, Medallion Laboratories/General Mills Inc., Minneapolis, MN, USA

Nutritionally, dietary fiber is unique in that its nutrition benefits relate to its resistance to digestion. Consequently, dietary fiber consists of a digestion resistant complex mixture (mostly carbohydrate) of components that vary by source, preparation, and processing. Serious research on dietary fiber in the 1950's and 60's resulted in a definition by Trowell et al in 1976[i]. Beginning in 1980, AOAC and AACC International validated Official Methods[ii] 985.29, 991.42, 992.16, 993.19, 993.21, and 994.13 to match that definition. As researchers have discovered and elucidated additional dietary fiber sources, there not only has been a perceived need to update the definition of dietary fiber, but to update the supporting methodologies. Scientific advances in the subsequent two decades resulted in the physiologically based conclusion that additional components e.g. resistant starch and non-digestible oligosaccharides are validly included in the Trowell et al definition, therefore AOAC Official Methods 992.28, 995.16, 997.08, 999.03, 2000.11, 2001.02, 2001.03, and 2002.02 for these components have been validated. Recently, the CODEX Alimentarius Commission adopted a clarifying definition of dietary fiber (ALINORM 09/32/REP) recommended by the Committee on Nutrition and Foods for Special Dietary Uses (see ALINORM 09/32/26) that reflects the scientific findings of the past 5 plus decades in a single, concise definition. AOAC International scientists validated an all inclusive method (Official Method of Analysis 2009.01) commensurate with this definition and are currently validating methodology for the insoluble and soluble fractions of dietary fiber.

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THE NEW OFFICIAL METHODS OF ANALYSIS VALIDATION PROCESS SYMPOSIUM

Wednesday June 8, 2010 8:30-11:30
Terrace 2

Responsibilities of the Official Methods Board

Norma Hill of Alcohol and Tobacco Tax and Trace Bureau

Under the new operating culture, the OMB is at the core, coordinating the scientific activities of AOAC. The standing Methods Committees are transitioning into small, method-centric committees that are assembled from the pool of AOAC experts to shepherd the methods brought to the OMB for validation. These method-centric committees review the validation protocols and collaborative study reports, once a method is developed and tested.

The OMB interacts with sources of methods—communities, contracts, individual organizations, etc.--and approves the appointments of voting members of the communities, task forces, and Expert Review Panels (ERPs). Task forces and stakeholders decide and agree upon method performance characteristics, and ERPs sift through methods and select those that meet the requirements (candidate methods).

This presentation focuses on some new responsibilities of the OMB. In addition to the core traditional responsibilities (such as recommending polices to the Board of Directors and appointing Methods Committees), the OMB is now responsible for approval of chairs and voting members of ERPs and stakeholder bodies. OMB approval of these appointments is valuable for many reasons. As Hill outlined, a successful review is evidence that an independent committee of technical experts has determined that these are the right individuals to accomplish the goal. It also gives the group access to AOAC process experts (OMB) from the very outset of the project. The OMB has been working to implement policies and procedures on this framework, as well as other elements of the new operating culture.

Single Laboratory Validation, A Key Step Along the Path to OMAs
John Szpylka of General Mills/Medallion Laboratories;
William Hall of Mosaic Fertilizer LLC

As presented by William Hall of Mosaic Fertilizer LLC and an OMB alumni, an SLV is a key step toward a method's journey to *Official Method*^{SM} status. In his presentation, Hall provided key elements about method validation (specific to quantitative chemical methods), the overall validation process, efforts to harmonize the process, method optimization, and full collaborative studies, while answering questions such as "Why perform an SLV?" (for one, to ensure viability of a method before doing a collaborative study) and "What to do next?"

So why the need for a harmonized process? Hall outlined several issues under the previous process, in which harmonization would be beneficial. These issues include (*1*) many routes leading to method validation, which could be confusing for those new to the AOAC process, (*2*) methods not being fully developed (or optimized) prior to collaboration, (*3*) methods not being broad enough (matrixes, range/detection limit, ruggedness, use) or fit for a broad purpose (not necessarily just community supported), (*4*) establishing uncertainty and reproducibility in advance of the collaborative study, and (*5*) methods not building upon previous work or otherwise supporting future collaborative studies. Having a well-developed and optimized method increases the chances for successful validation and method utilization. And clearly, AOAC has had much success under the proven business model based on stakeholders coming together to prioritize and agree on fit-for-purpose methodology.

What next? OMB has re-invented itself. Hall urges members to learn how to use the new process and make it work for them in their validation efforts. Work is underway to continue harmonizing the validation process and making it seamless.

Roles and Responsibilities of the General Referee and Topic Advisor in Method Centric Validation
Norma Hill of Alcohol and Tobacco Tax and Trace Bureau

Examining the new roles of General Referees and Topic Advisors was Chris Maragos of the U.S. Department of Agriculture and chair of the AOAC Methods Committee on Natural Toxins. In the new method-centric validation process, a General Referee serves as a facilitator between Study Directors and

the Methods Committee or OMB and as a key technical and *validation process expert* in the peer-review process. Topic Advisors inform the Methods Committee or OMB on technical matters pertaining to a method. That is, as a *subject matter expert.*

In general, if it is determined by the OMB, Methods Committee, AOAC Research Institute, or community/stakeholder group that a General Referee is needed, the associated analytical community, OMB, and general membership can nominate qualified candidates from a pool of experts for consideration. The chair of the Methods Committee or other requesting body then reviews the slate and recommends a candidate to the OMB chair for approval, with input from two members of the OMB (recommendation of a candidate is also based on accompanying resume and other supporting documents). This same open and transparent process for approving the appointment of General Referees applies to Topic Advisors and Study Directors.

New responsibilities of the General Referee include working with Study Directors to provide guidance in the validation process; responding to questions from the Methods Committees, AOAC Research Institute, community, stakeholders, and the OMB; reviewing Study Directors' reports; and recommending appropriate action to the Methods Committees. General Referees are no longer responsible for writing the annual General Referee report. Under the new process, the Methods Committee chair is responsible for progress reports on the method. However, for existing committees, the General Referees will continue to write the reports until the committees are retired. In addition, General Referees no longer identify the method type. New, modified, matrix extension, etc. will now be identified by the OMB.

As for Topic Advisors, they will work with Study Directors and General Referees, giving guidance in designing and conducting collaborative studies and assisting in finding collaborators; serve as an expert in a specific topic area; answer inquiries from the OMB, Methods Committee, community, or stakeholders group; review and recommend changes in OMA; and collect and review feedback for methods brought to First Action (after 2 years of a method's adoption as First Action, the Topic Advisor is responsible for preparing a report to the OMB on the recommendation of whether the method should proceed to Final Action or Repeal status). Topic Advisors are no longer responsible for providing reports as part of the yearly General Referee report.

The Methods Committees

John Szpylka of General Mills/Medallion Laboratories

AOAC's validation process now includes smaller method-centric committees, made up of 5-8 members. In his presentation, John Szpylka, Medallion Laboratories/General Mills and vice chair of the OMB, helped members understand the role and function of Methods Committees.

Previously, standing Methods Committees were organized by interest groups (for example, food nutrition, natural toxins, extraneous material, microbiological, etc.). Each method submitted to AOAC for evaluation was assigned to a Methods Committee that was the closest match to the general topic, analyte or property, and matrix. This was sometimes not an easy fit.

Under the new operating culture, for each submitted method, the OMB creates a dedicated Methods Committee that is focused on that specific method. The formed Methods Committee is populated from a recognized pool of experts with demonstrated knowledge and experience relating to the submitted method. The Methods Committee reviews the submitted information (intended method use, supporting documentation such as the SLV, proposed collaborative protocol, etc.) and then works with the Study Director to move the method evaluation through the program. The Methods Committee then reviews the

results of the collaborative study and, if warranted, recommends the method for First Action or for further work needed. After the process is completed, the Methods Committee submits a final report to the OMB and the committee is retired.

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RESISUE ANALYSIS IN FOOD AND WATER SYMPOSIUM

Wednesday June 8, 2010 1:30-5:00

Terrace 1

Proof of Concept Method for the Extraction and Analysis of Trace Level Pesticide Residues in Oils Employing a Modified QuEChERS Technique

Kelly Dorweiler, General Mills /Medallion Laboratories

Traditionally, cleanup of oil sample extracts have employed gel permeation chromatography (GPC) to separate the lipid fraction from the extracted residues. These methods required high volumes of hazardous solvents and excessive time to separate fractions and concentrate extracts. In addition, late eluting pyrethroid and macro-cyclic pesticides cannot be recovered on this platform. The QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) technique is an alternative GPC. Corn, canola, soybean oils and palm oil shortening were extracted in triplicate at three levels using a modified QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) technique. Oil samples were fortified at 50, 200, and 400 ng/g and extracted using ethanol with magnesium sulfate and sodium chloride. Samples were frozen to promote additional separation of the oil from the ethanol layer. An aliquot of the extract was cleaned using dispersive solid phase extraction by magnesium sulfate, primary secondary amine, and C18 stationary phases (3:3:1). The final aliquot was injected and analyzed using a programmable thermal vaporization large volume injection autosampling system designed for difficult matrix introduction. Acquisition and analysis was performed on a capillary gas chromatograph coupled with a time-of-flight mass spectrometer. Recoveries and detection limits will be presented.

Pesticides in Drinking Water and Wastewater: Analytical Methods for Emerging Pollutants of Interest

Dr. Edward F. Askew of Askew Scientific Consulting LLC

The currently approved methods for the analyses of pesticides and ancillary formulation ingredients under the Clean Water Act and Safe Drinking Water Act analyzes for the classical pesticides such as the chlorinated hydrocarbons, nitrogen/phosphorous pesticides or the formulation carriers such as PCB/simple surfactant but, the more recent methods for emerging pesticides of concern are focused on previously supposed inert formulation chemicals, low level pesticides with high efficacy, and nano-materials. These newer chemical agents are not easily detected with simple GC or GC-MSD methods but, instead require more sophisticated analytical techniques. The presentation will focus on a review of the classical analytical pesticide techniques compared to the more recently promulgated EPA methods . Key points will be matrix problems encountered with the more recent methods and QA/QC variability.

Analyzing food and food packaging materials for bisphenol A using gas chromatography-mass spectrometry

Pamela Noack, Covance Laboratories, Inc., Madison, WI , USA

Bisphenol A (BPA) is a basic element of polycarbonate plastics and epoxy resins used for bottling and packaging food and drink. Concerns have grown about BPA migrating from these containers and linings into the commodities they hold. Herein describes a method adapted from Health Canada[1], used to measure BPA concentrations in a variety of food and drink packaging materials. The method includes a solid phase extraction, derivatization with acetic anhydride, organic extraction and gas chromatography-mass spectrometry. Food samples are usually tested as consumed. Packaging materials are treated with food simulants, which are then analyzed. BPA-*d16* is used as an internal standard and BPA concentration is measured in single-ion-monitoring mode using one target ion and three qualifying ions. The limit of quantitation is usually 0.5ppb, but can vary by sample matrix. To account for environmental BPA throughout analysis, three water blanks are run with each sample set. The average blank is subtracted from each sample result.

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MANURE ANALYSIS SYMPOSIUM
Wednesday June 8, 2010 1:30-5:00
Terrace 2

Title: Is there a statistically significant difference in results obtained for total nitrogen in manure when using Total Kjeldahl Nitrogen or Nitrogen by Combustion methods?

Jerry Floren, Minnesota Department of Agriculture, St. Paul, MN, USA; Robert O. Miller, PhD, Soil and Crop Sciences Department, Colorado State University, Fort Collins, CO, USA

Laboratories analyze total nitrogen in manure using either Total Kjeldahl Nitrogen (TKN) or Nitrogen by Combustion (N-C). *Recommended Methods of Manure Analysis*, the first manure methods manual published in 2003, states there has not been much experience using N-C in material such as manure with high liquid content. In 2003, the Minnesota Department of Agriculture (MDA) received a grant from the Environmental Protection Agency (EPA) to develop a manure proficiency program. Since then, approximately 65 labs provided analytical results to MDA for 54 different manure samples with triple replicates. Now that the Manure Analysis Proficiency (MAP) Program has results obtained from TKN and N-C, it is apparent there is a statistically significant difference in total nitrogen results obtained from nitrogen by combustion compared to the results obtained by Total Kjeldahl Nitrogen (TKN) on replicated liquid manure samples.

Jerry Floren, Soil Scientist, Minnesota Department of Agriculture, 625 N. Robert St., St. Paul, MN 55155, USA, Phone: 651-201-6642, Email: jerry.floren@state.mn.us

Title: Certification of Soil and Manure Testing Laboratories by the Minnesota Department of Agriculture

Jerry Floren, Minnesota Department of Agriculture, St. Paul, MN 55155, USA

The Minnesota Department of Agriculture (MDA) certifies laboratories for soil testing and manure testing. These programs are slightly different, with the soil testing and certification having a longer history then manure testing and certification. What are the MDA requirements for laboratories to become certified? How are laboratories evaluated for certification? What are the advantages of certification?

Jerry Floren, Soil Scientist, Minnesota Department of Agriculture, 625 Robert St. N., St. Paul, MN 55155, USA, Phone: 651-201-6642, Email: jerry.floren@state.mn.us

Title: Evaluation of soil pH, nitrate and phosphorus method performance utilizing laboratory proficiency data

Robert O. Miller, PhD, Colorado State University, Fort Collins, CO, USA; Jerry Floren, Minnesota Department of Agriculture, St. Paul, MN, USA;

Laboratories analyze soil pH, nitrate-nitrogen (NO_3-N) and phosphorus for developing nutrient recommendations. The Agricultural Laboratory Proficiency (ALP) Program was initiated in 2006 to evaluate laboratory method performance based on 126 standardized soil analysis methods. Since its establishment 64 laboratories have provided analytical results for 55 different soil samples collected across North America each on triplicate. A review of proficiency data indicates that inter-laboratory variance for pH ranges from 0.06 to 012 pH units, for nitrate ranges from 0.9 to 2.1 NO_3-N mg kg^{-1} and Bray P1 phosphorus ranges from 0.8 to 4.1 PO_4-P mg kg^{-1} . Intra laboratory RSD values range from 0.5 to 1.5% for pH, 4.5 to 36% NO_3-N, and 5.5 to 27% for Bray P1. Across soils, within laboratory NO_3-N method uncertainty is best predicted as a function of NO_3-N concentration by a power equation similar to that described by Horwitz. Development of consensus standards of method performance based on proficiency data will be discussed.

Robert O. Miller, PhD, Soil and Crop Sciences Department, Colorado State University, Fort Collins, CO, USA, Phone: 970-686-5702, Email: rmiller@lamar.colostate.edu

Title: Pulverizing Soils for Laboratory Analysis

Robert O. Miller, PhD, Colorado State University, Fort Collins, CO, USA

Soil-testing laboratories utilize a range of grinder types to pulverize soils for laboratory analysis. This study was conducted to evaluate the effects of soil particle diameter and laboratory sub sample size on analysis variability on nitrate, Bray 1 extractable phosphorus (P), extractable potassium (K) and Soil Organic Matter (SOM). Four soils collected for the Agricultural Laboratory Proficiency Program were pulverized to pass sieves of 2.0. 1.4, 1.0, 0.70, 0.50 and 0.25 mm and sub sampled for lab analysis using mass sizes of 0.5, 1.0, and 2.0 in triplicate. In a second study soils were also pulverized using four types of commercial grinders, and analyzed for particle size distribution, P and K. Results indicate that the coarsest sieve size 2.0 mm resulted in the largest variability for all four soil analysis evaluated. Analyte variability decreased with decreasing sieve size and increasing sub sample size. Mean Bray P 1 and K

concentrations were not significantly different across the sieve sizes evaluated. Results of the commercial grinders indicate a range in mean particle diameters from 0.15 to 0.60 mm, with the lowest for the grinder utilizing hammermill design. Results will be presented showing the interaction between soil particle diameter and Bray P 1 and K lab analyses.

Robert O. Miller, PhD, Soil and Crop Sciences Department, Colorado State University, Fort Collins, CO, USA, Phone: 970-686-5702, Email: rmiller@lamar.colostate.edu

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NEW UPDATES IN FEED ANALYSIS SYMPOSIUM
Wednesday June 8, 2010 8:30-12:00
Terrace 1

Methods Under Study by AAFCO's Laboratory Methods & Services Committee and AOAC's AMC Feed Nutritives, Additives and Contaminants Group
NANCY THIEX, South Dakota State University, Olson Biochemistry Laboratories, Brookings, SD, USA:

The AAFCO Laboratory Methods and Services Committee and the AOAC Agricultural Materials Community, Feed Nutritives, Additives and Contaminants Group work in tandem to prioritize analytical method needs related to feed nutritives, additives and contaminants, and then develop and validate analytical methodology for the identified areas of need. The two groups will be defined, members identified and progress on joint activities will be reported. Following formal prioritization of methods needed by stakeholders, method performance criteria for needed methods are published in AOAC's *Inside Laboratory Management (IL*M) with a call for methods. LC methods for lasalocid, oxytetracycline and decoquinate in animal feed have been successfully collaborated. Numerous other studies are now underway.

The New AAFCO Feed Check Sample Program
Victoria Siegel, Office of Indiana State Chemist, Purdue University, W. Lafayette IN

The AAFCO Collaborative Check Sample Program has been in operation since 1930. The original purpose of the Program was to evaluate the performance of analytical methods, and for this reason the Program was designed to mimic an AOAC collaborative study. However, in recent years participant laboratories are using the data primarily to evaluate laboratory performance, but are still very interested in method performance and comparison of analytical methods. International laboratories currently comprise around 30% of our annual subscription, and make a major contribution to Program growth. We have recently made significant changes to the Program, launching a new way of reporting data and a revised set of AAFCO method codes that include references to AOAC, AOCS and ISO methods. The revised program, including statistical analysis and reporting outputs will be described.

Analysis of starch and non-structural carbohydrates

Mary Beth Hall, Research Dairy Scientist, USDA - Agricultural Research Service, 1925 Linden Drive, Madison, WI 53560, USA, Phone: 608-890-0078, Email: MaryBeth.Hall@ARS.USDA.GOV

Dietary starch, sugars, and fructans are carbohydrates that differ in digestion characteristics and potential nutritional and physiological impacts on the animal. None presently has an official assay for use on animal feeds. A prospective enzymatic assay analyzes for dietary starch as glucose released from hydrolysis of alpha (1-4) and alpha (1-6) linkages in poly- and oligosaccharides. Analysis for "sugars" as comprised of monosaccharides, sucrose, lactose, and maltose has focused on chromatographic methods, however, separation of galactose and glucose has been problematic. Fructans defined as poly- and oligosaccharides in which fructose is the major constituent and glucose is the minor constituent (33% or less), have been analyzed using enzymatic or acid hydrolysis to release the monosaccharides for analysis. Inulinase has given variable recoveries of fructans; sugars inflate recoveries and must be accounted for to eliminate that interference. Progress has been made towards setting analyses of these nutritional fractions in animal feeds.

Comparison of Various Amino Acid Methods

John Simpson, Yanhong Zhang, National Corn-to-Ethanol Research Center, Edwardsville, IL, USA; Amy Johnson, AOCS, Soybean Quality Traits Program (SQT), Urbana, IL

The National Corn to Ethanol Research Center (NCERC) has launched a collaborative study with the American Oil Chemists' Society (AOCS) to compare the various testing methods of amino acid content in animal feed. The performance of each method was evaluated based on both precision and accuracy. Accuracy was evaluated in the presence of five different sample matrices representative of feed samples. The reproducibility of each participating lab was determined through the use of triplicates of each matrix, and the reproducibility of each lab was determined by allowing each lab to test a set of samples over a period of six weeks. Initially it appears that differences in the accuracy, repeatability, and reproducibility of each method may be masked by error introduced by each lab. A detailed survey of the study participants will yield insight into the major differences in each participant's method allowing the sources of error to be determined.

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Thermo Fisher Scientific Midwest AOAC Presentations:

Presentation #1

James Chang " **High Resolution Mass Spec and its Applications"**

Presentation #2

"**How does GC-MS/MS Increase Sample Throughput and Productivity for Trace Analysis?**

The Next Evolution in GC Triple Quad MS“. The workshop will be a product line overview with a focus on the new products ISQ, XLS, QuanLab Forms.
Presented by Eric Phillips
CV Eric Phillips
Eric worked in an environmental laboratory for several years. During this time he managed the extraction lab and became the senior GC/MS operator. At the beginning of his 13 years at Thermo Fisher Scientific he provided technical support and training on GC and GC/MS products. Eric later became the product manager for the DSQ and DSQ II GC/MS single quadrupole systems. For the last four years he was the Market Manager for all GC and GC/MS product lines into the Food and Environmental Markets. Eric recently took the position of Methods and Application Development Manager. In this role Eric and his team provide method development and application support for customers using GC and GC/MS products.

Presentation #3

LC-MS/MS Analysis of Environmental and Food Residues using

TraceFinder and EQuan Max

Presented by Jia Wang

Jia Wang, Charles Yang, Jonathan Beck, and Dipankar Ghosh

With increasing global concerns regarding water and food safety, the number of regulated contaminants has grown considerably. As a result, accurate and fast methods are required for qualitative and quantitative analysis of multiple contaminants. The specificity and sensitivity offered by tandem mass spectrometry has led to substantial growth in use of the liquid chromatography mass spectrometry (LC-MS/MS) technique in water and food safety. TraceFinder and EQuan Max are part of Thermo Scientific integrated LC-MS solutions. TraceFinder software is ideally suited for routine analysis in environmental and food safety labs. It increases efficiency with faster method development, faster reporting, and faster everyday use. EQuan Max system is an automated and unique on-line sample enrichment technique that significantly enhances productivity by reducing analysis time (from days to minutes). In addition, its high injection volume (1-20mL) improves detection limits (to ppt levels) over conventional LC-MS/MS analysis. This presentation will show residue applications in food and water matrices and discuss the capability of both TraceFinder and EQuan MAX in streamlining workflows in residue laboratories.

CV Jia Wang
Jia Wang received her Ph. D from Kunming Institute of Botany, Chinese Academ y of Sciences. She started working at Thermo Fisher Scientific in 2010 as Strategic Marketing Specialist for Environmental and Food Safety market. She joined Lancaster Laboratories in 2003 as a principal chemist. She has worked on developing and validating LC/MS methods for environmental assays, including a number of EPA centric LC/MS methods. Prior to joining Lancaster Laboratories, she had worked at the University of Kentucky and Philip Morris USA.

POSTERS

Analyzing food and food packaging materials for bisphenol A using gas chromatography-mass spectrometry

Bisphenol a (BPA) is a basic element of polycarbonate plastics and epoxy resins used for bottling and packaging food and drink. Concerns have grown about BPA migrating from these containers and linings into the commodities they hold. Herein describes a method adapted from Health Canada[1], used to measure BPA concentrations in a variety of food and drink packaging materials. The method includes a solid phase extraction, derivatization with acetic anhydride, organic extraction and gas chromatography-mass spectrometry. Food samples are usually tested as consumed. Packaging materials are treated with food simulants, which are then analyzed. BPA-*d16* is used as an internal standard and BPA concentration is measured in single-ion-monitoring mode using one target ion and three qualifying ions. The limit of quantitation is usually 0.5ppb, but can vary by sample matrix. To account for environmental BPA throughout analysis, three water blanks are run with each sample set. The average blank is subtracted from each sample result.

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Comparison of ELISA and HPLC results of B1 in Corn and Peanut Samples.

Authors: Frederik Wuppermann[1], PhD, Thomas Fiedler, PhD[1], Wendy Rasmussen[2]
Companies: 1) LCTech GmbH 2) Pickering Laboratories, Inc.

Aflatoxins are naturally occurring toxins produced by fungi, e.g. Aspergillus and Penicillium species. Aflatoxins can be found in a wide range of matrices including peanuts, cottonseed, corn, dried chili pepper, as well as mixed or processed products, such as animal feed. ELISA analysis tests are a specific and easy way to test for the presence of Aflatoxin in the sample. The LCTech AflaREAD ELISA Kit will quantitatively detect Aflatoxin B1. We spiked peanuts and corn samples with Aflatoxin, and then analyzed them using both ELISA and HPLC-Post column photochemical derivatization. We were able to achieve quantitative results comparable to those obtained using the HPLC. The preparation of the sample for ELISA is very easy- just extract, dilute, and filter. This ELISA technique provides a quick and easy screening method, but can also be used for quantitation.

Comparison of Sample Preparation Methods for Liquid Matrices for Metals Analysis by ICP-MS

In many instances, microwave assisted digestion is a relatively quick and efficient technique to prepare food samples for metals analysis. However, for liquid matrices, the loss of volatile elements, cross contamination, and analyst's time are a concern. Three sample preparation methods were utilized to determine if a simple dilution of the sample could be used for liquid matrices of soft drinks and orange juices without pulp. The methods used for comparison were: 50 fold 2% HNO_3 dilution, microwave assisted digestion, and open vessel digestion. Aliquots fortified with multiple elements were prepared in triplicate using each preparation method and analyzed by ICP-MS with collision/reaction cell technology. Results: Acceptable recoveries were observed for most of the targeted elements using the three different preparation methods. All methods achieved satisfactory precision and accuracy for most of elements observed. Conclusion: Sample preparation using a simple dilution produces comparable results in homogonous water based liquid matrices.

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Optimization of PCB Aroclor Analysis in Fish Using GC Triple Quadruploe MS and High Throughput Extractor

YOKO S. JOHNSON, EDWARD BALCER, ERIN SLOAN, Minnesota Department of Agriculture, 601 Robert Street North, St. Paul, MN, USA

An analysis of PCB Aroclor 1254/1260 mixture in fish was optimized by using high-throughput extractor and GC triple quadrupole MS (GCMSMS). The conventional method employs acetonitrile extraction followed by back-extraction to petroleum ether by sep-funnel. In the method presented, homogenized fish sample is directly shaken with petroleum ether. The extract is then applied on pre-packed Florisil column cleanup without solvent exchange. For MSMS analysis nine peaks that represent the Aroclor multipeak pattern are chosen from major congeners that constitute the Aroclor mixture. Secondary column confirmation and manual peak integration normally required for ECD analysis are eliminated. Comparison of ECD and MSMS results of fish samples containing PCBs show good correlation (RPD<20%). Method reporting limit is 25 ppb. For a batch of 20 samples extraction time is reduced from one day to a few hours. Data analysis/reporting time is reduced from a few hours to less than 30 minutes.

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MICHAEL PRINSTER, DONNA HOUCHINS, CHRISTINA BREWE,
Romer Labs, Inc., Union, MO, USA

Testing for Mycotoxins using LC/MS/MS

Mycotoxins have traditionally been detected by a variety of methods, including rapid methods (test kits) and reference methods, such as HPLC and GC. Of the reference methods, GC can be limited due to the necessity of derivatizing the compounds of interest. This may also be required for some HPLC methods. However, liquid chromatography may be used in conjunction with a variety of detectors, including fluorescence, UV-VIS, and others, including mass spectrometers. The coupling of liquid chromatography with a mass spectrometer (or tandem mass spectrometers, LC/MS/MS) allows for methods which are applicable to a wide variety of analytes, with no limitations by molecular mass, a straightforward sample preparation, and no chemical derivatization required. These methods also have the benefit of providing structural information on the target compound and the possibility of testing for many analytes in one run. Matrix effects and the effects of variations in sample preparation may be eliminated by the use of stable isotope-labeled internal standards. These features make LC/MS/MS methods useful and versatile in the detection of mycotoxins.

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ELISABETH HALBMAYR, ALEXANDRA MOLINELLI, Romer Labs Division Holding GmbH, Tulln, Austria
MICHAEL ZHENG, Romer Labs Singapore Pte Ltd, Singapore

Validation of Test Kits for Food Allergens – AgraQuant® Allergen ELISA Test Kits

Food Allergy, an immune response to a protein present in food that the body mistakenly believes is harmful, is an important health problem in modern society. Cross-contamination during production processes may occur so that residues of food allergens may be present in a variety of products. Allergens continue to be the largest single cause of global product recalls.
The AgraQuant® Allergen Test Kits are sandwich enzyme-linked immunosorbent assays (ELISA) which can detect food allergens in a wide range of food matrices. Food allergen proteins, extracted from food products with an extraction buffer, bind to specific polyclonal antibodies pre-coated on the surface of microwells. After washing, an enzyme-conjugated antibody binds to the captured food allergen proteins. Using a microwell reader the color intensity of the enzyme substrate is determined and is directly proportional to the concentration of the food allergen in the sample. Extensive validation studies indicated low detection limits, good accuracy, precision and recovery on these test kits.

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