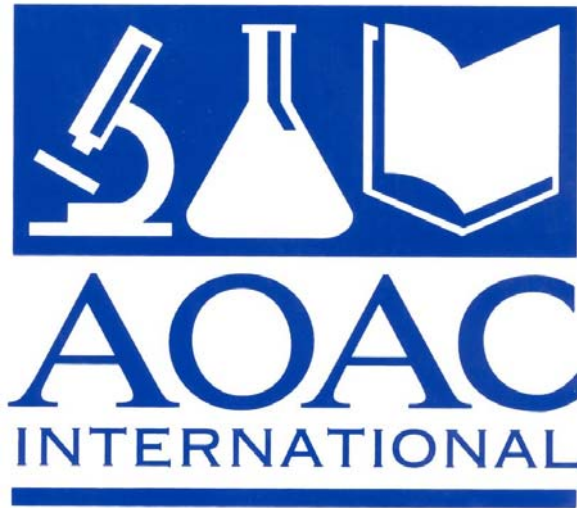


PACIFIC SOUTHWEST SECTION



The Scientific Association Dedicated to Analytical Excellence

2010 Annual Meeting

***Lab Survival, Green Technology, and
a Tough Economy***

May 11, 2010

**California Department of Food and Agriculture
Center for Analytical Chemistry**

Building B

3292 Meadowview Road

Sacramento, CA 95832

<http://www.pswaoac.org>

Morning Session

- Chair: Anna Pfender, Arizona Department of Agriculture
- 8:15 am Check-in
- 9:00 am Welcoming Remarks:
Marsha C. Galicia, Program Chair, PSW-AOACI
Nirmal Saini, Branch Chief, The Center for Analytical Chemistry, California
Department of Food and Agriculture
- 9:10 am Doug Marsh
Laboratory Director, Arizona Department of Agriculture
Keynote Address
- 10:00 am Pacific Southwest Section Informational Meeting/Call for Volunteers
Anna Pfender, President-Elect, PSW-AOACI
- 10:25 am Break
- 10:45 am Arlene Fox
Senior Director of Proficiency Testing, AOAC INTERNATIONAL
"AOAC as a Standard Development Organization"
- 11:15 am Steve Stadlmann
Industrial Sales Manager, Astoria Pacific International
Demonstration: "Astoria Discrete Auto Analyzer"
- 12:00 pm Lunch Provided by Sponsors

Afternoon Session

- Chair: Doug Marsh, Arizona Department of Agriculture
- 1:00 pm Wendy Lauer
Senior Sales Product Manager-Food Science Division, Bio-Rad Laboratories
"Brettanomyces Bruxellensis : A Spoilage Yeast to Eliminate from Wine"
- 1:30 pm Dr. James Chang
Senior Application Specialist, Food Science and Safety Division,
ThermoFisher Scientific
"Emerging Technologies for Food Safety Analysis"
- 2:00 pm Break
- 2:20 pm David Mazawa
Technical Support Chemist, Pickering Laboratories
"Effective Sample Cleanup, Preparation and Guaranteed Chemistry: Keys to an Effective Analytical Method"
- 2:50 pm Cameron George
Account Manager, Life Sciences and Chemical Analysis, Agilent Technologies
"Instrumentation Advances in GC, LC and Mass Spectrometry – Allowing Laboratories to Reduce Analysis Cost and Time"
- 3:20 pm Tessa Burt
Chromatography Sales Specialist, PerkinElmer Inc.
"HPLC to UHPLC from 6,000 to 18,000 psi Providing Flexibility to Meet your Application Needs and Green Laboratory Requirements"
- 3:50 pm Closing Remarks
Marsha C. Galicia, Program Chair, PSW-AOACI

AOAC as a Standard Development Organization

Presented by Arlene Fox, AOAC INTERNATIONAL

AOAC has enhanced its role as a globally recognized association that is a provider of science based analytical solutions. The 16 AOAC sections including countries in Europe, Asia, and Latin America as well as North America have strengthened its international presence.

AOAC is both a standards development organization and a conformity assessment body. AOAC develops consensus standard method performance requirements that meet the needs of both the regulators and the regulated. The technology developers use these method performance standards to develop fit for purpose methods. AOAC serves as a conformity assessment body to evaluate these methods against the performance standards through method validation. AOAC partners with multinational instrument developers, contract research organizations, and food/ beverage companies during this process. All decisions made, standard performance requirements, and validated methods are published.

Methods are needed for many different reasons. Sometimes a quick screening method is required in an emergency while at other times a confirmatory method is essential. Methods need to improve as the technology improves. The infant formula community has seen the need to improve methodology so work has begun with AOAC to develop 20 sets of standard method performance requirements. In addition, AOAC has worked with DHS to bring together key stakeholders in the biological threat agent community to discuss and reach consensus on standard method performance requirements. AOAC has looked to the future by partnering with United Fresh Produce and UC Davis and NC State University to submit a grant proposal on sample collection and pathogen testing of leafy greens.

AOAC now has in place systems to establish performance criteria and provide independent evaluation of methods. Perhaps most importantly, AOAC has proven experience in bringing together key stakeholders to reach consensus on method performance requirements.

Arlene Fox, Senior Director of Proficiency Testing, AOAC INTERNATIONAL, 481 N. Frederick Ave., Suite 500, Gaithersburg, MD, 20877, tel: 301-924-7077 x 143, fax: 301-924-7089, e-mail: afox@aoac.org

Astoria Discrete Auto Analyzer

Presented by Steve Stadlmann, Astoria Pacific International

Adaptation of clinical analyzer technology (discrete analyzer) to reduce costs in water, soil, beverage and food testing laboratories.

Astoria Pacific history with Clinical analyzers.

Founded in 1990, and located in Oregon, Astoria Pacific started the SPOTCHECK clinical flow analyzer designed for testing newborn babies for blood abnormalities. Still in use today, Astoria Pacific's technology has adapted to many other industries including the wine, beverage and water testing industries since 1994. In 2007 they expanded their analyzer offerings, by adapting Discrete clinical analyzer technology to encompass various testing needs.

With a continued effort to further reduce reagent consumption, Astoria Pacific has been dedicated at pursuing yet lower reagent consumption while achieving the maximum benefit to the laboratory.

***Brettanomyces Bruxellensis* : A Spoilage Yeast to Eliminate from Wine**

Presented by Wendy Lauer, Bio-Rad Laboratories

Microbial flora play a major role in the wine-making process. They are responsible for the proper progression of the fermentation stages. *Brettanomyces bruxellensis* is yeast responsible for the presence of 4-ethylphenol and 4-ethylguaiacol in wine. It causes serious financial losses and can cause spoilage of the wine during the elaboration process. This spoilage is increasingly common. Its presence in wines is hard to detect using the conventional culture methods, which are long and non-specific.

Compared with the traditional microbiological method and non-specific methods, molecular biology (PCR) provides solutions for detection with high speeds, sensitivity and specificity. Fast, specific and early detection of the yeast during the wine elaboration process enables the oenologist and producer to take preventive measures and to eliminate it before the phenolated aspect appears that is characteristic of spoilage due to this yeast. Diagnosis of this yeast's presence will make it possible to determine the wine's risk level and how the risk will evolve over time. This risk varies with the level of contamination. Regular monitoring is recommended in all cases. It is important to follow the evolution of *Brettanomyces bruxellensis* in the wine.

VINEO™ *Brettanomytest* is a quantitative test for the specific detection of *Brettanomyces bruxellensis* in wines and fermenting musts using a specific and adapted DNA extraction step and real-time polymerase chain reaction technique (RT-PCR) detection/quantitation. The wine can then be categorized according to its "*Brettanomyces* risk level". An adapted management for winemakers and oenologist is then possible.

Emerging Technologies for Food Safety Analysis

Presented by Dr. James Chang, ThermoFisher Scientific

Application of simple sample preparation procedures and detection with ultrahigh performance liquid chromatography-Orbitrap high resolution mass spectrometry (UHPLC-Orbitrap MS) for comprehensive pesticide residue screening. Pesticides are extracted using current extraction procedures (QuEChERS, dilute-and-shoot) and the performance is evaluated based on recovery, repeatability, sensitivity, mass accuracy and resolution of the pesticides in the presence of the agricultural matrices. Most of the pesticides studied could be detected in the 1 – 5 µg/kg range. Accurate mass measurements were determined in three different matrices (orange, carrot, spinach) at various concentrations with accuracy errors < 1 ppm, well within the acceptable limits for confirmation. At low concentration levels in complex plant-based matrices, a resolution of 50,000 was required to resolve pesticide analytes from interfering co-extractives. Collision experiments were performed to separate two isomers, desmedipham and phenmedipham based on the uniqueness of their product ions. The results from this work demonstrate the applicability of this method and instrumentation for routine non-targeted (data acquisition) screening of pesticides in complex agricultural commodities.

Effective Sample Cleanup, Preparation and Guaranteed Chemistry: Keys to an Effective Analytical Method

Presented by David Mazawa, Pickering Laboratories

Efficient and Reproducible Sample Preparation is key to an effective analytical method. Gel Permeation Chromatography and Immunoaffinity clean-up are two techniques which are very effective for a wide range of matrices and analytes. We present our new product line of GPC Clean-up systems and Mycotoxin analysis products.

Using the GPC sample cleanup, a laboratory can efficiently and reproducibly clean up Environmental, food, and beverage samples for the analysis of pesticides, PCBs, PAHs, Phthalates, and more. The GPC Cleanup systems are designed to eliminate carry-over and cross-contamination of samples. We have a range of instrumentation from full automation and concentration, to the GPC Quattro high-throughput manual injection system.

Our Mycotoxin analysis products include Immunoaffinity clean-up columns and high-performance Elisa kits for Aflatoxin and Ochratoxin A. These can be used with a variety of matrices including corn, wheat, barley, coffee, spices, dried distillers grain, and feeds. Recoveries and matrix interference are discussed. The AcceCLEAN Automated Handling instrument will clean-up a batch of 30 samples at a time and can be used for IAC as well as a wide range of SPE applications.

Instrumentation Advances in GC, LC and Mass Spectrometry – Allowing Laboratories to Reduce Analysis Cost and Time

Presented by Cameron George, Agilent Technologies

The fields of gas chromatography, liquid chromatography and mass spectrometry are well established and well understood. Methods developed on these instrument platforms have been locked in place for years, and in some cases decades. Often these older methodologies are slower and more costly than what is possible today with newer technology.

Newer technology may mean a complete revamp of hardware/software but it also may mean small modifications to existing hardware at minimal cost to the laboratory and only minor changes in workflow.

This talk will touch briefly upon some of the interesting new technologies from Agilent that help to address both big changes and small changes that a laboratory should consider when working through the puzzle of doing more work in less time at lower cost.

HPLC to UHPLC from 6,000 to 18,000 psi Providing Flexibility to Meet your Application Needs and Green Laboratory Requirements

Presented by Tessa Burt, PerkinElmer Inc.

Environmental considerations challenge chromatography community to reduce consumption of organic solvents and therefore amounts of toxic waste produced. UHPLC has been introduced in recent years to address this issue. Using UHPLC columns packed with sub-2 micron silica gel particles allows for 8-fold reduction in usage of organic modifier. PerkinElmer has developed a new UHPLC system, FX-15, that can run UHPLC methods with very high precision. This talk will highlight the UHPLC theory and PerkinElmer FX-15 instrumentation as well as a few applications.

Notes

Notes

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