IFT 2012 Annual Meeting & Food Expo®

June 25–28, Las Vegas Convention Center, Las Vegas, NV

Web link to education sessions at IFT Annual Meeting: Online Session Scheduler

Title	**Research Tools to Meet Product Development Needs for Phenolics and Other Bioactive Compounds**
Session No.	**263**
Date	**Thursday, June 28, 2012**
Time	**1:15 -2:45 PM PT**
Location	**Rm N109**
Track	Product Development & Ingredient Innovations
Collaborating Divisions	Food Chemistry, Nutraceuticals & Functional Foods, Nutrition
Moderator	***Leila G Saldanha*****,** Scientific Consultant, Office of Dietary Supplements, NIH, Bethesda, MD.
Description	The quality of raw materials is of particular concern in formulating dietary supplements and foods with bioactive ingredients. Finding and using reliable tools to correctly identify, characterize, and quantify novel naturally-occurring constituents in raw materials and finished products is critical to product developers. Such tools are necessary to ensure that the claims made in labeling and advertising are supported by scientifically-valid methods. This session begins with accomplishments from the NIH-funded research programs over the last 10 years to develop analytical methods and reference materials for ingredients used in formulating dietary supplements and "functional" foods. It describes how product developers can access this information. It reviews research from USDA's Food Composition and Methods Development Laboratory on profiling and determining flavonoids and other polyphenols in plants, and in differentiating between cultivars and land races of fruits and vegetables known to be associated with "healthful eating." Case studies will provide examples of how these techniques have been applied to characterize and quantify phytochemical constituents and nutrients in dietary supplements. The session includes an industry perspective and panel discussion on the topic.

1:15 -1:20 PM **Opening Remarks**

Moderator: ***Leila Saldanha***

1:20 -1:40 PM **263-01. Accuracy, Precision, and the NIH/ODS Analytical Methods and Reference Materials Program**

Speaker: ***Joseph M Betz,*** Director of the Dietary Supplements Methods and Reference Materials Program, Office of Dietary Supplements, NIH, Bethesda, MD.

The speaker will discuss the need for accurate, precise, and robust analytical methods for constituents of interest by providing a case study of the consequences of reporting improbable results and will also provide a brief overview of the ODS/NIH analytical methods program designed to accelerate the development and dissemination of validated analytical methods and reference materials for these dietary supplements.

1:40 -2:00 PM **263-02. Identification and Quantification of Phenolic Compounds**

Speaker: ***James Harnly***, USDA, Research Leader, Food Composition and Methods Development Lab, Beltsville, MD.

With ultra high performance liquid chromatography (UHPLC) and high resolution mass spectrometry, it is possible to identify thousands of phenolic compounds in foods and botanical materials. In a recent study, we found more than 200 phenolic acids, flavonol glycosides, and anthocyanins in red mustard greens. After MS identification, it was possible to quantify these compounds by UV spectrophotometry using only a few commercially available standards and molar relative response factors that are predicted by the UV band wavelength maximum. Thus, most phenolic compounds can be identified and quantified.

2:00 -2:20 PM **263-03. Dietary Supplement Sampling and Ingredient Analysis**

Speaker: ***Karen W Andrews*****,** Manager, Dietary Supplement Ingredient Database (DSID), Nutrient Data Laboratory, USDA, Beltsville, MD.

The Dietary Supplement Ingredient Database (DSID-2) has just been released, reporting natl. estimates of ingredient levels in children's and adult multivitamin/mineral (MVM) supplements. Studies of ingredient levels in OTC prenatal MVM supplements and omega-3 fatty acid supplements are underway. In addition, the caffeine content of weight loss and energy supplements has been reported. For the DSID studies, the Nutrient Data Laboratory uses a statistically-based sampling frame and product category-specific plans to identify and select representative dietary supplement products. Sampling plans are developed using available market information and customized to reflect the scope and purpose of each study. The differences between sampling plans that are ingredient-based, product-based, and brand-based will be described. Commercial laboratories are qualified using a multi-step process, which includes a review of proposals and the analysis of check samples by labs that have demonstrated expertise for ingredients and matrices of interest. Specialty labs are also considered for specific components. Laboratory precision and accuracy are monitored by the USDA with blinded duplicate samples, certified reference materials and secondary control materials in each sample set. The National Institute of Standards and Technology has released a number of standard reference materials (SRMs) with certified levels of common dietary supplement ingredients in supplement matrices. Many of these SRMs have been used to monitor the accuracy of analytical data for the DSID studies. Examples of final results for several studies will demonstrate the ranges of labeled levels for ingredients and the ranges of analytical results.

2:20 -2:30 PM **263-04. Evaluation and Validation of Analytical Methods to Support Product Development**

Speaker: ***Darryl Sullivan,*** Director of Scientific and Regulatory Affairs, Covance Laboratories, Madison, WI.

This presentation will describe procedures that can be used to evaluate test methods for acceptable performance. The audience will learn how to evaluate a test method's applicability to new product formulations, and determine whether the method is fit for its intended purpose. Several examples will be presented that demonstrate how to determine acceptable method precision and accuracy.

2:30 -2:45 PM Panel Discussion. Audience Q&As

2:45 PM Close