34th Symposium on Pesticide Formulations and Delivery Systems: Translating Basic Science into Products

Sponsored by Committee E-35 on Pesticides, Antimicrobial, and Alternative Control Agents and subcommittee E35.22 on Pesticide Formulations and Delivery Systems

October 22-24, 2013
Hyatt Regency Jacksonville Riverfront
Jacksonville, FL

Symposium Chairman: Yasmith Bernal
Oil-Dri Corporation of America
Vernon Hills, IL USA

Symposium Co-Chairman: Karen Swayze
Dow AgroSciences LLC
Indianapolis, IN USA

ABOUT THE EVENT
The Symposium has several purposes:

• It provides a forum for the presentation and discussion of new pesticide, adjuvant, and related agrichemical formulations.
• It provides a forum for the presentation and discussion of chemistry and physical properties of materials in formulations.
• It provides a forum for new ideas regarding delivery systems.
• New standard test methods may be presented as well as the science behind those standards.
• It provides a venue for networking among participants.

The symposium title is based on the concept that the foundation of innovative products comes from basic science or ideas. A great example is the discovery of Bacillus thuringiensis or Bt, used as a toxin for insects, which lead to a robust biological control industry as well as genetically engineered crops. Another example is the basic research into the toxicity of many solvent systems that resulted in increased efficacy as well as safer agricultural practices.
SESSION I: GREEN APPROACHES

Session Chair: Yasmith Bernal
Oil-Dri Corporation of America
Chicago, IL USA

1:00 P.M.
Welcome and Opening Remarks
Yasmith Bernal

1:10 P.M. Keynote Address
“Living in a GMO World”
Dr. Wayne Parrott. Professor, University of Georgia, College of Agricultural and Environmental Sciences

2:00 P.M.
Salicylic Acid as a Biopesticide Product for Seed Treatment
P. Halamkar, R. Worthley, L. Tapia, C. Stickler and M. Trostle, Loveland Products, Loveland, CO, USA; and A. Tillman, Pyxis Regulatory Consulting, Inc. Gig Harbor, WA, USA

2:20 P.M.
Laboratory and Field Studies of C8910, a Fatty Acid Based Insect/Arthropod Repellent and Biopesticide
W. Reifenrath, Stratacor Inc., Richmond, CA, USA

2:40 P.M. BREAK

3:10 P.M.
New Solvents for Agrochemical Formulations – A Green Chemistry Approach
F. de O., B. Costa and A. S. de Oliveira, Oxiteno S.A. Indústria E Comércio, São Paulo, Brazil

3:30 P.M.
Development of Emulsifier Free Organic Silicon Super Spreader/Adjuvant and Evaluation of its Affectivity to Reduce Use of Chemical Pesticides and Promotion of Organic Farming
M.V. Shete., M & M Industries, Nashik, India
SESSION II: ADJUVANTS

Session Chair: Krista Turpin
Stepan Company
Winder, GA, USA

3:50 P.M.
Combination of Polysiloxanes with Dispersants to Enhance Stability and Efficacy of Pesticide Formulations
C. Poffenberger and S. Stadtmueller, E. Goldschmidt Corporation, Hopewell, VA, USA; E. Sieverding and G. Windbiel, Evonik Industries AG, Essen, Germany; and R. Gaskin, PPCNZ, Rotorua, New Zealand

4:10 P.M.
Recent Advances in Polysorbate 20 (Tween™ 20) Adjuvant Technology
G. J. Lindner, Croda, Inc., Wilmington, DE, USA

4:30 P.M.
Common Lambsquarters Control: Chapter 3 - Adjuvants
R. Zollinger, North Dakota State University, Fargo, ND, USA

4:50 P.M.
Water Conditioners and Growth Regulator Herbicides
D. Penner and J. Michael, Michigan State University, East Lansing, MI, USA

5:10 P.M. SYMPOSIUM ADJOURNS FOR THE DAY
SESSION III: CROP MANAGEMENT

Session Chair: Bala Devisetty
Valent BioSciences Corporation.
Long Grove, IL USA

8:30 A.M.
Opening Remarks

8:35 AM
Silicon and Biotic Stress: Suppressing Plant Diseases
L. E. Datnoff, Department of Plant Pathology & Crop Physiology, LSU AgCenter, Baton Rouge, LA, USA

9:00 A.M.
Silicon a “Plant Beneficial Substance” for Abiotic & Biotic Stress
M. C. Provance-Bowley, Harsco Metals and Minerals, Sarver, PA, USA

9:25 A.M.
Improving crop water productivity and quality in sprinkler irrigated potatoes in soils treated with a surface-active agent.
S. J. Kostka and N. J. Gadd, Aquatrols Corporation of America, Paulsboro, NJ, USA; and B. Hopkins, Brigham Young University, Provo, UT, USA; and H. Fan, H. Ren and R. W. Glucksman, Witgang Far East Ltd, Beijing, China

9:45 A.M. BREAK

SECTION IV: DRIFT CONTROL TECHNOLOGIES

Session Chair: Curtis M. Elsik
Huntsman
The Woodlands, TX, USA

10:15 A.M.
Opening Remarks

10:20 A.M.
Spray Drift Reduction Test Method Correlation
C. M. Elsik, Huntsman, The Woodlands, TX, USA; and B. K. Fritz, USDA-ARS, College Station, TX, USA
10:40 A.M.  
**Cellulose Ether as a Drift Control Agent**  
L. P. Dempsey, J. S. Sun and S. Zhu, Akzo Nobel Surface Chemistry LLC, Brewster, NY, USA; and Q. D. He, Akzo Nobel Surface Chemistry LLC, Bridgewater, NJ, USA

11:00 A.M.  
**Novel Deposition and Drift Control Adjuvants for Agriculture Spray Applications**  
R. K. Goyal, L. Couret, M. McKnight and K. Shanmuga, Solvay, Bristol, PA, USA; and A. Vielliard, Solvay, Novecare, Cranbury, NJ, USA

11:20 A.M.  
**Droplet Characteristics, Drift Potential, and Active Ingredient Efficacy with an Ultra-Low Volume Twin Fluid Atomization Crop Sprayer System**  
J. A. Eastin, C. L. Petersen, and D. Vu, Kamterter Products, LLC, Waverly, Nebraska, USA; G. R. Kruger, R. S. Henry, and J. C. Ferguson, University of Nebraska, North Platte, NE, USA

11:40 A.M.  
**The Use of Vesicle Forming Surfactants as Spray Drift Control Agents in Pesticide Applications**  
J. S. Sun, L. Dempsey and S. Zhu, Akzo Nobel Surface Chemistry LLC, Brewster, NY, USA; and Q. D. He, Akzo Nobel Surface Chemistry LLC, Bridgewater, NJ, USA

12:00 P.M.  
Lunch (On Your Own)

**SESSION V: METHODS**

Session Chair: James S. Namnath  
Bayer CropScience LP  
Davis, CA USA

1:30 P.M.  
**Opening Remarks**

1:35 P.M.  
**Laboratory (In Vitro) Test Method for Determining the Disposition of Chemicals in Contact with the Skin**  
W. Reifenrath, Stratacor Inc., Richmond, CA, USA

1:55 P.M.  
**Granular Carrier Effects on Volatility of Pesticide Formulation Solvents**  
Y. Bernal, N. W. Esposito and G. R. Goss, Oil-Dri Corporation of America, Vernon Hills, IL, USA
2:15 P.M.  Tablets as Formulation of Plant Protection Products – A Proposal for new FAO Specifications Including new CIPAC Methods  
C. Vinke, Federal Office of Consumer Protection and Food Safety, Braunschweig, Federal Republic of Germany

2:35 P.M.  BREAK

3:10 P.M.  Surfactant Characterization  
A. Viets, BASF Corporation, OH, USA

3:30 P.M.  Evaluation of Spreader-Sticker Adjuvants Adherence  
M. T. Meredith, T. McIver, and A. J. Stern, Huntsman Corporation, The Woodlands, TX, USA

3:50 P.M.  SYMPOSIUM ADJOURNS FOR THE DAY

THURSDAY, OCTOBER 24, 2013

SESSION VI: FORMULATIONS

Session Chair: Bob Goss  
Oil-Dri Corporation of America  
Chicago, IL, USA

8:30 A.M.  Opening Remarks

8:35 A.M.  Inorganic Powders Used In Agricultural Formulations  
Y. Bernal, N. W. Esposito and G. R. Goss, Oil-Dri Corporation of America, Vernon Hills, IL, USA

8:55 A.M.  Use of Rheology for Studying the Suspension Stability  
J. Zhang, Monsanto, St. Louis, MO, USA

9:15 A.M.  Judging the Identity of Plant Protection Products Based on Analytical Results  
C. Vinke, Federal Office of Consumer Protection and Food Safety, Braunschweig, Federal Republic of Germany

9:35 A.M. BREAK.
10:10 A.M.  
**Formulation Challenge and Innovation of Sulfoxaflor, A New Chemical Class of Novel Insecticide**  
D. Wu, J. Hercamp, A. Batra, and K. Qin, Dow AgroSciences, Indianapolis, IN, USA

10:30 A.M.  
**An Examination of the Practice of Radiolabeled Formulations Relating to Agricultural Studies**  
B. Downer, Dow AgroSciences LLC, Indianapolis, IN, USA; M Aggarwal, Dow AgroSciences Ltd, Abingdon, UK; and S. Hansen, The Dow Chemical Company, Midland, MI, USA

10:50 A.M.  
**Closing Remarks**

11:00 A.M.  
**SYMPOSIUM ADJOURNS**