36th Symposium on Pesticide Formulation and Delivery Systems: Emerging Trends Building on a Solid Foundation

Sponsored by ASTM Committee E35 on Pesticides, Antimicrobials, and Alternative Control Agents

October 27-29, 2015
Marriott
Tampa, Florida

Symposium Chairman: Dr. Craig Poffenberger
Evonik Corporation
Richmond, Virginia

The intent of the symposium is to build on the foundation of formulation development and delivery of pesticides and to use this know-how to address emerging trends and topics of interest

I. Delivery Systems and Application Technology
   1. Autonomous and Un-manned Application of Agricultural Chemicals
   2. Drift Reduction Technology

II. Regulatory Environment for Agricultural Chemicals and Inert Ingredients

III. New Developments in Agricultural Chemicals and Formulations
   1. New Development in Adjuvants and Adjuvant Ingredients
      a) Green Surfactants
   2. Novel Formulation Developments
   3. RNAi Technology
   4. Biostimulants and other Biorational Agricultural Inputs

IV. Test Methods
TUESDAY, OCTOBER 27, 2015

1:00 PM
Welcome Remarks
Craig Poffenberger, Symposium Chairman

Invited Speakers Presentations

1:15 PM
Precision Ag in Small Unmanned Aircraft Systems
R. Blair, Blair Three Canyons Farm, Kendrick, Idaho, USA

2:00 PM
Citrus Greening, Control with Adjuvants and Antibiotics
J. Curtis, Better Crops, Vero Beach, Florida, USA

2:30 PM
Irrigation and Water Minimization
J. Farner, Irrigation Association, Falls Church, Virginia, USA

3:00 PM BREAK

Invited Speakers Continued

3:30 PM
Honey Bee Health
G. Hayes, Monsanto, St. Louis, Missouri, USA

4:10 PM
Overview on Biopesticides
K. Manhas, Terramera PlantHealth, Vancouver, British Columbia, Canada

4:50 PM
The Potential Use of RNA in Honey Bee Health
G. Hayes, Monsanto, St. Louis, Missouri, USA

5:30 PM
Closing Remarks and Adjournment for the Day
Craig Poffenberger, Symposium Chairman
WEDNESDAY, OCTOBER 28, 2015

8:00 AM
Opening Remarks
Craig Poffenberger, Symposium Chairman

SESSION 1: REGULATORY

8:05 AM
Understanding How Authorities in the EU Evaluate, Identify, Physical, Chemical and Technical Properties and Analytical Methods of Formulations-Germany as an Example
C. Vinke, Federal Office of Consumer Protection and Food Safety, Braunschweig, Germany

8:30 AM
Agrochemical Formulations: Development and Registration Challenges across Geographies
R. Acosta Amado and R. Herrera Leon, Dow AgroSciences LLC, Indianapolis, Indiana, USA

8:55 AM
Difficulties/Discrepancies of State Registrations
B. Hayes, Spring Trading, Magnolia, Texas, USA

9:20 AM
OMRI Listing of Pesticides: What You Need to Know
D. Currier, OMRI, Eugene, Oregon, USA

9:50 AM BREAK

SESSION 2: GREEN CHEMISTRY

10:15 AM
Cold-Pressed Neem Oil: Expanding Applications through Innovative Formulations
A. Rozek, Terramera PlantHealth, Vancouver, BC, Canada

10:40 AM
Novel Technology towards Environmentally Friendly Solid Crop Protection Formulations
H. Shen, H. Dave, S. Deshmukh, A. Batra, R. Boucher and L. Liu, DowAgroSciences LLC, Indianapolis, IN, USA
11:05 AM
**Improved Pesticide Performance Using Polyglycerol Esters as Tank-Side Adjuvants**
J. Heuser and C. Poffenberger, Evonik Corporation, Richmond, Virginia USA; R. Haensel and E. Sieverding, Evonik Industries AG, Essen, Germany

11:30 AM
**Lignin-based Chemicals as Green Dispersants for Liquid Formulations: Better Protection Against Crystal Growth**
P. Rolland, S. Gunderson, F. Bierre, Borregaard, Sarpsborg, Norway

11:55 AM
**Announcement**
Curtis Elsik

12:00 PM    Lunch (On Your Own)

**SESSION 3: FORMULATION DEVELOPMENT: (SEED COATINGS)**

1:20 PM
**Correlation of the Mechanical Properties of Seed Coating Films and Dustoff, Flowability and Plantability Tests**
A. Halecky and T. Chen, Ashland, Inc., Wilmington, DE, USA; N. Ren, Valvoline, Ashland, Inc., Lexington, KY

1:40 PM
**Flowable Seed Treatments (FS): A New Polymeric Dispersing System to Increase Active Ingredient Content, Improve FS Formulation Performance and Flexibility**
R. Di Modugno and B. Eidem, Lamberti CST-PPC, Conroe, TX, USA; De Pelligrini Federico, Lamberti SPA, Albizzate, Italy; A. Balestrini, Lamberti USA, Hungerford, TX, USA

**SESSION 4: FORMULATION DEVELOPMENT Cont'd., (GENERAL)**

2:00 PM
**Novel Nonionic Star Polymeric Stabilizer in Aqueous Dispersion Formulations**
M. Secrest, R. Kayea and G. Lindner, Croda, New Castle, DE, USA
2:20 PM  
**Crop Oil Concentrates Comparison: Connecting Chemical Features to Performance**  
F. De Oliveira B. Costa, M.C.F. Antunes and C. Favaro, Oxiteno S.A. Industria E Commercio, Sao Paulo, Brazil

2:40 PM  
**A Comparison of Agglomeration Processes for Crop Protection Agents**  
D. Linscott, Dow AgroSciences, LLC, Indianapolis, IN, USA

3:00 PM  
**BREAK**

3:20 PM  
**Rheological Response of Hydrophobically-Modified Ethoxylated Urethane Polymer and Common Fertilizers in Aqueous Surfactant Systems**  
Sze-Sze Ng, M. Jonaitis and L. Quencher, Dow Chemical Company, Midland, MI, USA

3:40 PM  
**A New Nonionic Surfactant Building Block for the Development of Customized Formulations of Water Conditioners, Salts of Agrochemicals and Fertilizers: Alkyglucamides**  
J. Aponte, Clariant International, Muttenz, Switzerland

4:00 PM  
**Efficacy of Non-AMS Water Conditioning Agents**  
R. Zollinger, North Dakota State University, Fargo, ND, USA; B. Young, Purdue University, W. Lafayette, IN, USA; M. Bernards, Western Illinois University, Macomb, IL, USA; D. Peterson, Kansas State University, Manhattan, KS, USA

4:20 PM  
**Polymeric Based Compatibility Agents for High Electrolyte Systems**  
S. Ellis, H. Bofinger and G. Lindner, Croda, New Castle, DE, USA

4:40 PM  
**Quantification of Humic and Fulvic Acids in Agricultural Granules Using the Proposed AOAC New Standardization Method**  
A. Litin and B. Oberlin, Oil-Dri Corporation of America, Chicago, IL, USA
5:00 PM  
**Development of Fertilizer Compatible Insecticide Compositions**
R. Chen, Agrithority LLC, Kansas City, MO, USA

5:25 PM  
**Closing Remarks**
Craig Poffenberger, Symposium Chairman

5:30 PM  
**Symposium Adjourns for the Day**

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**THURSDAY, OCTOBER 29, 2015**

8:00 AM  
**Opening Remarks**
Craig Poffenberger, Symposium Chairman

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**SESSION 5: ANALYTICAL METHODS AND SPRAY TECHNOLOGY**

8:05 AM  
**Analytical Method Study of Lambda Cyhalothrin as Pre-Mix in Water Based, Environmentally Friendly Formulations of Suspension Concentrates and Suspension Emulsions**
S. Chen, Rotam Agrochemical Co. Ltd., Kunshan, Jiangus, China

8:30 AM  
**Adapting the Laser Ablation Electrospray Ionization Imaging System to Herbicide Physiology Research**
B. Young and J. Young, Purdue University, West Lafayette, IN, USA

8:55 AM  
**Spray Characterization by Optical Image Analysis**
S. Sarkar, S. Kamin, Ashland Specialty Ingredients, Bridgewater, NJ, USA and G. Kruger, University of Nebraska, Lincoln, NE, USA

9:20 AM  
**Mode of Action of Silicone Drift Control Agents**
M. Klostermann, R. Haensel, J. Venzmer and E. Sieverding, Evonik Industries AG, Essen, Germany; C. Poffenberger, Evonik Corporation, Richmond, VA, USA; I. Roisman and C. Tropea, Center for Smart Interfaces, TU Darmstadt, Darmstadt, Germany

9:45 AM  
**BREAK**
SESSION 5: ANALYTICAL METHODS AND SPRAY TECHNOLOGY, Cont’d

10:05 AM
The Effect of Spray Solution Physical Properties on the Volatility of Auxinic Herbicides
M. Li, S. Wilson, D. Ouse, B. Downer and H. Tank, Dow AgroSciences LLC, Indianapolis, IN, USA

10:30 AM
Assessment of Impact of Agricultural Sprays on Pollinators: From the Laboratory to the Field
W. Hoffman, J. Anderson and B. Fritz, USDA ARS, College Station, TX, USA

10:45 AM
The Effect of Adjuvants at High Spray Pressures for Aerial Applications
B. Fritz and W. Hoffman, USDA ARS, College Station, TX, USA

11:00 AM
Determining Drift Reduction Ratings of Ground Nozzles Using AgDrift and EPA’s DRT Guidelines
Ryan S. Henry, Bradley K. Fritz, William C. Hoffmann, Greg R. Kruger

11:20 AM
The Effect of Dew on Herbicide and Adjuvant Efficacy
D. Penner and J. Michael, Michigan State University, East Lansing, MI, USA

11:45 AM
Closing Remarks
2016 Symposium Chairman-Elect, Jim Namnath

12:00 PM SYMPOSIUM ADJOURNS