

Crops & Chemicals USA



July 23-25, 2018
Raleigh Convention Center Research Triangle Park
Raleigh, North Carolina

GAIN THE SCIENCE, TECHNOLOGIES AND CONTACTS YOU NEED TO ACCELERATE THE DEVELOPMENT AND REGULATORY APPROVAL OF YOUR BIOSTIMULANT, BIOPESTICIDE AND AGROCHEMICAL PRODUCTS

Tracks:

BIOSTIMULANTS

Develop new offerings, support product claims and dispel misconceptions around biostimulants and biofertilizers

BIOPESTICIDES

Develop targeted, efficacious and economical biocontrol products for use in IPM programs

AGROCHEMICAL FORMULATION

Enhance the compatibility and delivery of your active ingredients to ensure optimum efficacy

Hear from:

**EPA
FDA
USDA**

Register by June 15 and Save \$300
www.CropsChemicalsUSA.com



Crops & Chemicals USA in a Snapshot:

250+

Attendees

Connect with a global audience of agricultural product scientists and decision makers.

50+

Technical Case Studies and New Data Presentations

New industry developments, scientific advances, benchmarking, and insight on new technologies and techniques.

15+

Exhibitors

Discover tomorrow's novel technologies and services designed to accelerate your product development.



NEW FOR 2018



- Ask your burning regulatory questions to the **EPA, USDA** and **FDA** in an extended regulatory session
- **80%+ new speakers and speaking organizations for 2018**
- Keep up to date with industry changes with our hot new sessions including **CRISPR, RNAi** and **digital farming**
- Showcase your work through a new peer-submitted data driven **scientific poster hall**
- Brand new **seed treatment workshop** focusing on formulation, regulation and application of seed treatments
- Discover new products and opportunities during **'The Pitching Hour'**

"Excellent conference to learn about various aspects and technologies of ag business" - Syngenta

"Crops & Chemicals was a great conference, featuring exceptional industry participation" - Penn State Univ

"Perfect blend of business, technology and regulatory topics were covered with impact and meaningful detail" - Agrinos



UNDERSTANDING U.S., CENTRAL AND LATIN AMERICAN REGULATORY PATHWAYS FOR AGROCHEMICAL AND BIOLOGICAL PRODUCTS

Morning Session:

Understanding U.S. Agrochemical and Biologics Regulations and Registration Requirements

Amy Plato Roberts, *Regulatory Affairs Manager, Lallemand*
Mariola Kopcinski, *Scientific Alliances Director, Plant Health Care*

Introduction / Overview

- Overview of the U.S. regulatory system
- Product definitions, classifications, meanings and implications for registration requirements
- Recent and expected changes from U.S. EPA and U.S. regulations
- Key similarities and differences between the registration of traditional and biological products
- Registrations in theory vs. practice

A Focus on Traditional Agrochemicals

- Creating dossiers for a more universal regulatory strategy for USA and Canada
- Best practice for successful Agrochemical registration
- Outlining common hurdles and challenges and how to avoid these

A Focus on Biopesticides, Including:

- Outlining registration timelines and costs
- The registration process, requirements and supporting data
- Understanding and effectively using the EPA collaborative model for product registrations
- Essential advice for demonstrating product efficacy
- Common hurdles, challenges and solutions

A Focus on Biostimulants, Including:

- Outlining registration timelines and costs
- The registration process, requirements and supporting data
- Notes on differing expectations from individual states
- Common hurdles, challenges and solutions

The content above will be supplemented with practical examples and take away lessons from real product registrations.

Afternoon Session:

Understanding the Market Landscape, Regulatory Processes, Pathways and Requirements in Central and Latin America

Mariola Kopcinski, *Scientific Alliances Director, Plant Health Care*
Marco Toapanta, PhD, *Global Director, Science & Technology, AgriThORITY*

As U.S. based agrochemical and biologics manufacturers target Central and Latin American countries as new markets for their products, understanding individual market intricacies and their regulatory requirements becomes paramount.

Join this afternoon session to gain a greater understanding of the key agrochemical markets, regulations and registration pathways in Central and Latin America, with a key focus on Brazil.

Key Topics to be Addressed Include:

- Country market figures and breakdowns
- Overview of policy and regulatory systems for agrochemical and biological products
- Setting expectations for registration timelines and costs
- Product definitions, classifications, and implications for registrations
- Navigating the registration process, requirements and providing supporting data
- Key similarities and differences between the registration of traditional and biological products
- Common country hurdles, challenges and solutions
- Registrations in theory vs. practice
- Creating shared / efficient regulatory dossiers for North, South and Central American applications



SEED COATING AND FORMULATION STRATEGIES

9:30am - 3:30pm

Alan George Taylor, Cornell

Maxim J Schlossberg, Professor, Penn State

Carole Desbois-Vimont, *Coordinator Technologies/ Seed Technology Coordinator*, Limagrain

Seed Coating and Formulation Strategies:

- Successfully applying seed coatings to improve efficiency of seed products
- Formulation strategies to maximize the seed's carrying potential

Seed Treatment Regulatory Requirements:

- Insight on the status of neonicotinoids within seed treatments
- Avoiding common pitfalls and the outlook on seed regulation within the US

Seed Treatments and the Soil

- Exploring seed treatments and their relationship with the soil rhizosphere
- Formulation techniques to enhance seed treatment properties and their relationship with the soil rhizosphere

Benefits of Seed Treatments for Farmers

- Understanding what farmers want and need from their seed treatments





Tuesday, July 24, 2018

Plenary Session

7:15 Registration & Coffee

8:00 Chairperson's Opening Remarks

Market Outlook, Trends and Opportunities

8:10 **Back-to-Back Talk: Assessing the State of the Agrochemical Industry: Trends, Developments, and Outlook on the Future**

- Evaluating global markets, developing trends and emerging needs
- As the big four consolidate further: What next and how is this changing industry?
- Discussing biocontrol in the context of the total global crop protection market
- Identifying key developments in the biological products market the implications for the whole agro industry

Sanjiv Rana, *Editor in Chief, Agrow (Agribusiness intelligence), UK* William (Bill) Dunham, *Managing Partner, DunhamTrimmer LLC* Mark Trimmer, Ph.D., *Managing Partner, DunhamTrimmer LLC*

8:50 **PANEL DISCUSSION: Reflecting Industry Trends, Key Industry Concerns, and Predictions for the Future of Agro**

- Reflecting on current industry developments and identifying new emerging trends
- In this heavily competitive and evolving industrial landscape, who will be the winners and losers
- How have successful, pending and failed mergers and acquisitions changed our industry?
- How are commodity prices influencing grower choice and the application of products / technologies?
- Opportunities and threats to agrochemical and biologic manufacturers from the Trump administration

Panelists: Wendelyn Jones, Ph.D., *Global Leader Food Chain and Brand Protection, Commercial Effectiveness, Agriculture Division of DowDuPont*
 Marcus Meadows Smith, *Chief Executive Officer, BioConsortia* Kenneth Avery, *Chief Executive Officer, Verdesian Life Sciences*
 Michael Mülle, Ph.D., *CEO, Joyn Bio & former Head of Strategy and Business Management, Biologics, Bayer*

Digital Farming

9:30 **Evaluating the Adoption of Digital Farming and Implications for Agrochemical / Biologics Development and Production**
 Antonio Asebedo, Ph.D., *Assistant Professor, Precision Agriculture, Department of Agronomy, Kansas State University*

10:00 Morning Coffee and Speed Networking

AGROCHEMICAL FORMULATION

BIOLOGICS

Formulating Chemical Actives

CRISPR and Gene Editing Technologies

10:30 Chairperson's Remarks

Chairperson's Remarks

10:35 **Overcoming Stability Issues with Agrochemical Actives**

Understanding CRISPR and Gene Editing Technologies; Their Opportunities and Challenges in Agriculture

- Identifying formulation strategies to create more stable actives
 - Overcoming common hurdles with formulating actives
 - Assessing methods to ensure stability with difficult actives
- Mei Li, *Formulation Scientist, Dow*

- Capabilities, differences and limitations: CRISPR-Cas9, meganucleases, TALENs, and ZFNs
 - Understanding the opportunities for gene editing technologies' application in agriculture, as end products and research & development
 - Understanding the ownership, IP, and legal landscape around gene editing technologies and what you need to know as an interested party
 - What's left to address for legal, regulatory, and technological adoption of gene editing technologies?
- Wayne Parrott, Ph.D., *Professor, Crop & Soil Sciences, University of Georgia*

11:05 **Best Practices in Formulation and Packaging of Ag Products through 3rd Party Manufacturing**

CASE STUDY: Examining the Use of CRISPR in Plant Breeding / Seed Trait Development

- Essential advice for producing high quality packaging that ensures the stability of active on the shelf
 - Identifying formulation strategies to create more stable actives
- Rich Dombkowski, *Director of Manufacturing & Quality, Arysta*


- Rapid development of next generation waxy corn hybrids using morphogenic genes and CRISPR
 - Targeted gene knock-outs directly in elite maize inbreds
 - Recovered waxy deletions in 11 of 11 elite inbred lines
- Scott Betts, Ph.D., *Research Program Leader, Genome Modification, DowDupont Agriculture Division*


11:35 **CASE STUDY: Increasing the Active Ingredient Load in Formulations. Fomesafen**

CASE STUDY: Application of Genome Editing Technology for Accelerating Crop Breeding and Seed Product Development

- Novel way of concentrating the active ingredient up to 60% w/v at 0°C in aqueous solution
 - Disclosing laboratory observations necessary to understand how the creation of this product
 - Exploring methods to save resources such as space, energy and time
- Federico Henke, *Laboratory Chemist, Agrofina*

- Applying genome editing tools for trait discovery in maize
 - Evaluating new tools for achieving desirable genome editing outcomes
 - Developing new approaches to accelerate deployment of edited traits
- Qiudeng Que, Ph.D., *Group Leader, Seeds Research, Syngenta Crop Protection, LLC*

	AGROCHEMICAL FORMULATION	BIOPESTICIDES	BIOSTIMULANTS
12:05	SPOTLIGHT SESSION 	SPOTLIGHT SESSION Spotlight sessions are hosted by key service and solution providers operating in the biopesticide field. They offer an opportunity to share the latest developments from the company and update the industry audience. If you would like to host a spotlight presentation, please contact Aimee Croke, Tel: +1 857-504-6697, email: aimee.croke@knect365.com	SPOTLIGHT SESSION Spotlight sessions are hosted by key service and solution providers operating in the biostimulant field. They offer an opportunity to share the latest developments from the company and update the industry audience. If you would like to host a spotlight presentation, please contact Aimee Croke, Tel: +1 857-504-6697, email: aimee.croke@knect365.com
12:35	<i>Networking Luncheon</i>		
1:40	Chairperson's Remarks	Chairperson's Remarks	Chairperson's Remarks Michael Frodyma, Director – Formulation, New Product Development, NewLeaf Symbiotics
	Novel Technologies	RNAi Products	Biostimulant Efficacy
1:45	Best Practice for Formulating Products with Multiple Agrochemical Actives <ul style="list-style-type: none"> • Key considerations in creating a stable product with multiple agrochemical actives • Formulation strategies to aid with the compatibility of multiple agrochemical actives • Overcoming common formulation hurdles with multiple agrochemical actives Dr. Wen Xu, Ph.D., Formulation Development APR/DR, BASF	CASE STUDY: Opportunities and Challenges for Commercialization of RNAi Products <ul style="list-style-type: none"> • Discussing high variability in efficiency of RNAi among insect pests and disease vectors • Addressing determinants of highly efficient and systemic RNAi in coleopteran insects • Evaluating factors responsible for poor RNAi efficiency in most insect pests and disease vectors • Using nanoformulations to overcome poor RNAi efficiency in moths and mosquitoes • Potential RNAi resistance mechanisms in coleopteran insects Subba Reddy Palli, Ph.D., University Research Professor and Chair, Department of Entomology, College of Agriculture, Food and Environment, University of Kentucky	PANEL DISCUSSION: What's Being Done to Create Standards for Biostimulant Products? How Can Companies Work to Avoid the "Snake Oil" Label? <ul style="list-style-type: none"> • Addressing progress towards labels, standards or regulation of efficacy • Discussing the need for greater regulatory oversight of biostimulants • What can be learned from the Europeans on supporting efficacy? • Avoiding legal issues with claims over biostimulant effectiveness <i>Panelists:</i> David G. Beaudreau Jr., Executive Director, U.S. Biostimulant Coalition Keith Pitts, Chief Sustainability Officer & Senior Vice President-Regulatory and Government Affairs, Marrone Bio Innovations Eda Reinot, MBA, Vice President, Head of Regulatory, Quality, Bioprocessing, Indigo Agriculture Amy Plato Roberts, Regulatory Affairs Manager, Lallemand Matthew Kleinhenz, Professor, Extension Specialist, Vegetable Production Systems, Ohio State University
2:15	Assessing the Advantages of Nanotechnology <ul style="list-style-type: none"> • Understanding the potential successes of Nanotechnology • Demonstrating how nanotechnology can alter formulations in tank • Overcoming common formulation hurdles while using Nanotechnology Maxim J. Schlossberg, Professor, Penn State	RNA-Based Biocontrols For Use in the Management of Insect Pests <ul style="list-style-type: none"> • Development of RNA-based biocontrols against various insect pests • Ensuring pest selectivity with RNA-based biocontrols • Translating efficacy from laboratory to field environments • Expectations for the future of RNA-based products and their adoption in agriculture Steven Wall, Ph.D., Global Strategy Lead, Syngenta	CASE STUDY: Demonstrating Biostimulant Efficacy on Water/Nutrients Uptake and Under Salinity Stress in Greenhouse Conditions <ul style="list-style-type: none"> • Key considerations supporting biostimulant efficacy claims • Plant physiology response to biostimulant. It is sufficient to convince farmers? • Evaluating the effect of biostimulants on nutrient uptake and abiotic stress tolerance in controlled and open environment Pedro Molina Guevara, Ph.D., Chief Scientific Officer, Iden Biotechnology, Spain
2:45	Characterization of Colloidal Dispersions Using Ultrasound Spectroscopy Awaiting abstract Natalia Lebedva, Chemist, Syngenta	CASE STUDY: Drawing Lessons from The Development, Safety Testing and Risk Assessment for an RNAi-Mediated Plant Incorporated Protectant to Control a Key Pest of Maize <ul style="list-style-type: none"> • Discussing key steps in the development of SmartStax PRO corn, and RNAi mode of action to confer protection against the corn rootworm • Essential lessons from the development of an insecticidal dsRNA products • Illustrating how a high potential for specificity and the low likelihood of adverse effects to non-target species is evaluated and demonstrated • Insight from the testing and assessment of genetically engineered crops expressing RNAi-based insecticidal traits Steven L. Levine, Ph.D., Senior Science Fellow, Environmental Assessment Strategy Lead, Global Regulatory Sciences Monsanto Company	CASE STUDY: Connecting Biostimulant Use, Physiological Response, Yield, and Financial Return on Investment <ul style="list-style-type: none"> • Designing, executing and evaluating trials to demonstrate efficacy • Plant physiology response to biostimulant application - observations and measurements • Providing supporting data for efficacy, yield and economic return on investment Hubert Kardasz, Chief Executive Officer (President), INTERMAG, Poland

	AGROCHEMICAL FORMULATION	BIOPESTICIDES	BIOSTIMULANTS
3:15	SPOTLIGHT SESSION 	SPOTLIGHT SESSION	SPOTLIGHT SESSION: Skincare Meets Agriculture: Cross-Over Idea Creates a Novel Biostimulant with Greenhouse & Field Data Presented A novel biostimulant is being developed that was originally used in the skincare/cosmetics industry. Results from greenhouse and field testing will be presented. Initial results are compelling around water savings, drought tolerance, visual quality, and root growth. Chris Jordan, MBA, President, JRX Biotechnology, Inc.
3:45	<i>Networking Refreshment Break</i>		
4:15	Chairperson's Remarks	Chairpersons' Remarks William (Bill) Dunham, <i>Managing Partner, DunhamTrimmer LLC</i> Mark Trimmer, Ph.D., <i>Managing Partner, DunhamTrimmer LLC</i>	Chairperson's Remarks
	Novel Technology (continued)	Biopesticide Efficacy	Biostimulant Efficacy (continued)
4:20	Determining the benefits of using Slow releasing products <ul style="list-style-type: none"> Case study driven results of the effectiveness of slow release products Long term benefits to slow release products Illustrating product development and production challenges of slow release Dr. Héctor Manuel Cárdenas Cota, Research and Development Manager,, Agrobionsa	CASE STUDY: Successfully Demonstrating Efficacy of Biopesticide Products <ul style="list-style-type: none"> Discovery to field: Providing a phase plan overview Evaluating results and lessons from field validation studies Discussing results and lessons from early development studies Addressing next steps and developments Steve Ronyak, Director of Field Research, AgBiome	Evaluating Biostimulant Use in Commercial Citrus Production <ul style="list-style-type: none"> Examining the use of biostimulants for citrus under nursery and commercial field conditions in southwest Florida Illustrating the effect on plant growth, root structure, physiology, and root/soil microbial community Evaluating the impact on product yield Ute Albrecht, Ph.D., Assistant Professor, Plant Physiology, Southwest Florida Research and Education Center, University of Florida/IFAS
4:50	Physical approaches to pest and disease control <ul style="list-style-type: none"> Mechanisms of action Performance under field conditions Complementing conventional pesticides and fungicides Damian A. Hajduk, Vice President, R&D, Crop Enhancement, Inc.	CASE STUDY: Building Efficacy Programmes for Biopesticide Products <ul style="list-style-type: none"> Addressing design and placement of efficacy programs to assess suitability, safety and efficacy Strategies to improve return on investment (ROI) on field trial programs Real life field data evaluation and analysis Kuide Qin, Ph.D., Chief Science Officer, Verdesian Life Sciences	CASE STUDY: Developing Biological Stacked Seed Treatments (Bsst) <ul style="list-style-type: none"> Development insights on a Bsst package comprising of insecticide, nematicide, fungicide and plant health microbes for corn and soy Overcoming formulation and dosage development challenges for biological materials in seed applications Examining three years of field trial data Evaluating the value of Bsst to organic grower, and performance of Bsst compared to conventional chemical seed treatments Pankaj Pathak, Ph.D., Group Leader-Formulations, Marrone Bio Innovations, Inc. (MBI)
5:20	<i>Networking Refreshment Break</i>		
5:25	Chairperson's Remarks		
5:30	THE PITCHING HOUR: Speakers have 5 minutes to explain their company, technology / product / platform, stage of development, and requirement before taking questions from the gathered industry audience. Find all pitch speakers during the following evening drinks reception to pose further questions and make introductions. Chairperson: Vonnie Estes, Estes Consulting PITCH SESSION ONE: Microbial Metabolites as Effective Plant Biostimulants Xana Belastegui, Ph.D., <i>CBO, Business Development, Iden Biotechnology, Spain</i> PITCH SESSION TWO: Expanding Market for Neem Based Organic Control Harshavardhan Joshi, <i>Founder/CEO, Neemtrees Organics LLC</i> PITCH SESSION THREE: The Benefits of Trichoderma – Helping Plants Help Themselves Dan Custis, <i>President and CEO, Advanced Biological Marketing</i> PITCH SESSION FOUR: Zinkicide – A Cu Alternative for Crop Protection Swadeshmukul Santra, Ph.D, <i>Professor, NanoScience Technology Center, Department of Chemistry, Burnett School of Biomedical Sciences and Department of Materials Science and Engineering & Director, Materials Innovation for Sustainable Agriculture (USDA-NIFA recognized Center of Excellence), University of Central Florida</i> PITCH SESSION FIVE: Pitch Session Five: Bee Vectoring – A Disruptive Sustainable Crop Production Tool Ashish Malik, <i>President and CEO, Bee Vectoring Technologies</i> PITCH SESSION SIX: Last Available If you have a new active, chemical entity, microbe, biochemical, microorganisms, or similar, and would like to host this pitch session, please contact Rebecca Brady, + 44 (0) 20 701 77546, rebecca.brady@knect365.com* rebecca.brady@knect365.com		
6:25	<i>Evening Drinks Reception and Networking</i>		

Plenary Session

Registration & Coffee

7:30

8:00

Chairperson's Opening Remarks

Combination / Blending of Agrochemical and Biological Products

8:10

CASE STUDY: Evaluating Biologic Compatibility Issues and Preparing for Tank Mixing or Combinations with Seed Coatings by End Users

- Understanding the limitations of your own product in tank mixing or coatings with other company's products
- Identifying, evaluating and formulating for potential target mixes by the end user
- Assessing synergistic and agnostic relationships with potential tank mix targets
- Informing, educating and / or warning the end user of mixing your products

Harald Mikkelsen, Manager Microbials, New Business & Innovation, Koppert BV, The Netherlands

8:40

CASE STUDY: Developing Biological Formulations that Work Effectively with Synthetic Products

- Informing, educating and / or warning the end user of mixing your products
- Approaches to combining biologicals with synthetics
- Case study with living microbial inoculant
- Optimizing formulation to allow easier handling for growers using standard equipment

Jane Patterson Fife, Ph.D., Chief Science Officer, 3Bar Biologics

9:10

CASE STUDY: Successful Integration / Combination / Blending of Agrochemical and Biological Products

- Addressing the options for mixing chemical and biological products, including common pitfalls
- Key findings from blending agrochemical and biological products in combined products
- Recommendations for preserving stability, efficacy and activity of active ingredients and biologics in combined products
- Overcoming common challenges from blending, including: Spraying, biologic sensitivity, and the enhancing or hindering of the active

Ernestas Zaleckas Ph.D., Professor, Aleksandras Stulginskis University

9:40

Networking Refreshment Break

AGROCHEMICAL FORMULATION

BIOLOGICS

Application

Extended Regulatory Session & Ask the Regulators Panel

10:10

Chairperson's Remarks

Chairperson's Remarks

10:15

Formulation Strategies Match Advancements in Application Methods

- Overcoming Formulation hurdles to match application methods
- Ensuring successful formulation with a wide range of application methods
- Demonstrating how perfecting formulation and application can reduce spray drift

Patrick McMullan, President, Ramulus, LLC

REGULATOR: Essential Insight from the United States Environmental Protection Agency (U.S. EPA) on New Technologies and Biologics Registrations

- Update from EPA on CRISPR, gene edited, and RNAi pesticide products and their regulation
- Understanding EPA requirements, expectations and processes for the registration of biopesticide and biostimulant products

Robert McNally, Director, Biopesticides and Pollution Prevention Division, Office of Pesticide Programs (OPP) / U.S. Environmental Protection Agency

10:45

Exploring Novel Application Techniques

- Exploring novel application techniques (Kemagation)
- Identifying the relationship between formulation and application
- Improving product efficacy by matching application to formulation

REGULATOR: Understanding USDA Regulation of Genome Edited Organisms

- Outlining how USDA regulates genome edited organisms
- Discussing the USDA's "Am I regulated?" process
- Understanding the USDA's involvement in the coordinated framework with EPA and FDA

Neil E. Hoffman, Ph.D., Science Advisor, Animal and Plant Health Inspection Service, Biotechnology Regulatory Services, United States Department of Agriculture (USDA)

AGROCHEMICAL FORMULATION		BIOLOGICS
Application		Extended Regulatory Session & Ask the Regulators Panel
11:15	<p>CASE STUDY: FMC Foam Application Improving Seed Health</p> <ul style="list-style-type: none"> Until now, providing in-furrow crop protection has relied on seed treatment, conventional liquid carriers such as fertilizer or water and granular product applications. The 3RIVE 3D® Platform combines a unique patented formulation with patented equipment to provide the same amount of active ingredient in 150 gal of volume that is distributed in 2400 gal of liquid via conventional liquid in-furrow application when treating at typical rates. In our presentation, we would like to share the basics of this platform technology and discuss one of our newest products for this platform that combines a synthetic insecticide with a biological fungicide <p>Lamar Buckelew, <i>Product Development Manager, FMC</i></p>	<p>REGULATOR: Understanding the Food and Drug Administration's Oversight of Safety of Food from New Plant Varieties and Emerging Technologies in Agriculture</p> <ul style="list-style-type: none"> Outlining FDA expectations on the regulation of new technologies Discussing commitments to re-evaluate regulatory systems on biotechnology, including biopesticide products Understanding the FDA's role in ensuring food safety of biopesticide-containing plants used for food <p>Robert I. Merker, Ph.D., <i>Supervisory Consumer Safety Officer, United States Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Food Additive Safety</i></p>
11:45	SPOTLIGHT SESSION	SPOTLIGHT SESSION

12:15 *Networking Luncheon*

AGROCHEMICAL FORMULATION		BIOPESTICIDES	BIOSTIMULANTS
1:15	Chairperson's Remarks	Chairpersons' Remarks	Chairperson's Remarks Terry Stone, <i>Vice President, Regulatory Affairs and Sustainability Programs, Agrinos</i>
Surfactants and Adjuvants		Formulation and R&D Challenges	Soil Health and the Microbiome
1:20	<p>Formulation Strategies for Creating Better Formulation Through Adjuvants</p> <ul style="list-style-type: none"> Creating stronger formulations through adjuvants How to best utilize adjuvants Case study results of successful use of adjuvants The relationship between adjuvants and formulation 	<p>CASE STUDY: Linking Fermentation and Formulation in the Scale-Up of Gram-Negative Methylobacterium</p> <ul style="list-style-type: none"> Determining the role fermentation conditions play on formulation Demonstrating how scaling-up is achieved Evaluating the technologies, techniques and processes available to support scaling-up Formulating for the right downstream processes <p>Michael Frodyma, <i>Director – Formulation, New Product Development, NewLeaf Symbiotics</i></p>	<p>CASE STUDY: Using Trichoderma to Manipulate the Phytobiome and Improve Crop Performance</p> <ul style="list-style-type: none"> Assessing recent advances in the understanding of the soil microbiome and their relevance to new product development Identifying changes in rhizosphere microbial communities Population member vs. functional changes in the rhizosphere Translating Phytobiome data to field performance <p>Molly Cadle-Davidson, Ph.D., <i>Chief Science Officer, Advanced Biological Marketing, Inc.</i></p>
1:50	<p>The Future of Green Surfactants</p> <ul style="list-style-type: none"> Identifying how to successfully formulate greener surfactants Addressing current thinking on green surfactants Best practices to overcome formulation challenges with green surfactants 	<p>CASE STUDY: Strategies for Scaling-Up Biopesticides</p> <ul style="list-style-type: none"> Demonstrating how scaling-up is achieved Evaluating the methodologies and processes available to support scaling-up Demonstrating the methodologies and processes to support commercialization Essential advice for ensuring cost effectiveness <p>Norm Schneider, <i>Research & Development Manager, BioWorks</i></p>	<p>Soil Microbiome, Soil Health and Yield Potential: What Understanding the Soil Physiochemical and Biological Makeup Tells Us About Soil Health</p> <ul style="list-style-type: none"> Soil is highly complex and soil health is a hot topic in agriculture today Agricultural soils can vary substantially in makeup and microbiome from foot to foot, plot to plot and field to field We will discuss how these soil variations do (and don't) translate to soil health and plant yield response and what it all means for the use of biologicals in agriculture to mitigate soil health issues <p>Scott R. Schaecher, Ph.D., <i>Data Strategy Lead, Monsanto Biotechnology</i></p>

	AGROCHEMICAL FORMULATION	BIOPESTICIDES	BIOSTIMULANTS
	Surfactants and Adjuvants	Formulation and R&D Challenges	Soil Health and the Microbiome
2:20	<p>Formulation and product registration tactics to meet new agrochemical application realities</p> <p>Formulations strategies have changed, but indeed have stayed the same over the years. Prevailing are factors such as ease and expense of manufacture, transport, stability, and efficacy. What has changed are applications with the next generation of genetics tied into over-the-top herbicide applications, the next technologies that will allow more precise application techniques driven by data and analytics, and the desire for the market to do more with fewer chemicals. There are also interesting nano-based tools that have the potential to satisfy the new formulation realities. We will address the fundamentals behind formulation development, new research directions, and how the regulatory landscape will affect what gets put into the can and the spray tank.</p> <p>Solito A. Sumulong, Manager of Registrations, Loveland Products and Nutrien Ag Solutions</p>	<p>CASE STUDY: Challenges and Opportunities in Developing Biostimulant Research Programs</p> <ul style="list-style-type: none"> • Developing state-of-the-art, science-based, independent and objective research programs • Benefits of developing relationships with academic and government institutes • Connecting the dots between fundamental and applied research, and growers' ROI • Integrating technologies that identify synergies and benefits resulting from using biostimulants together with other advancing technologies <p>Jeffrey Norrie, Ph.D., Principal Scientist, Innovation, Collaboration and Technology Transfer, Acadian Plant Health™, a division of Acadian Seaplants Limited</p>	<p>Leveraging Recent Insights from The Soil Microbiome to Enhance Crop Production</p> <ul style="list-style-type: none"> • Demonstrating how soil microbiome understanding provides new insights into attributes supporting plant health and productivity • Assessing how recent discoveries provide a new framework for engineering the microbiome via inoculants, soil amendments, agronomic approaches and plant breeding or editing • Discussing the development of microbial technology to enhance agricultural yields and operational efficiency based on an ecological perspective <p>Matthew Wallenstein, Ph.D., Department Head and Professor, Department of Soil and Crop Sciences, Colorado State University</p>
2:50	<i>Networking Refreshment Break</i>		
	Spray Drift and Human Safety	Applied Academic Research Zone	Applied Academic Research Zone
3:20	Chairpersons' Remarks	Chairpersons' Remarks	Chairpersons' Remarks
3:25	<p>Ensuring Human Health Safety for Agrochemicals</p> <ul style="list-style-type: none"> • Exploring technologies that support safety with agrochemicals • Identifying risk assessments for agrochemicals <p>Claire Terry, Global Human Health Assessment Leader, DowDuPont</p>	<p>CASE STUDY: Evaluating and Integrating Biopesticides: A Case Study in Tobacco Pest Management</p> <ul style="list-style-type: none"> • End users of agricultural products are encouraging the adoption of biopesticides as a means to potentially reduce pesticide residues and other non-target effects • Discussing issues around field screening trials being optimized for conventional pesticides • Biopesticides may differ significantly from conventional pesticides with respect to appropriate application timing and frequency • Field trials harmonized to compare conventional and bio-pesticides within the same context but using methods appropriate to the attributes of each are needed <p>Hannah Burrak, Professor & Extension Specialist, Department of Entomology & Plant Pathology, North Carolina State University</p>	<p>Presentation One: Realizing the Commercial Potential from Original Agro Research Via Academic-Industry Partnerships</p> <ul style="list-style-type: none"> • Examining biocontrol method to reduce aflatoxin in agricultural fields • Discussing how this biocontrol method has the potential to improve the effectiveness of existing commercial products • Understanding how deCIFR is a comprehensive suite of biodiversity informatics pipelines and visualization tools <p>Megan Andrews, Ph.D., Project Manager, Plant Soil Microbial Community Consortium (PSMCC), Center for Integrated Fungal Research (CIFR), North Carolina State University</p>
3:55	<p>Formulation Strategies to Improve Spray Drift</p> <ul style="list-style-type: none"> • Case driven results on the correlation with spray drift and dicamba • Practical management of spray drift • Formulation strategies to improve spray drift <p>Andrew Landers, Director, Effective Spraying</p>	<p>MS3TL: Discussing a novel Multifunctional Surface/Sub-surface/Systemic Therapeutic Technology for huanglongbing (HLB) management</p> <ul style="list-style-type: none"> • Understanding citrus greening disease / HLB, Candidatus Liberibacter asiaticus, and the transmission insect Asian Citrus Psyllid (ACP) • Formulating MS3T with kaolin clay and two potent antimicrobial actives, Quaternary Ammonium Compound (Quat) and Zinc chelate (urea) • Assessing how the interaction of the antimicrobial actives with the clay reduces their phytotoxicity, and using clay as a natural repellent of ACP as well as a platform to sustained delivery both antimicrobial actives, with combined modes of action • Fixed Quat is surface-restricted for controlling surface bacterial and fungal diseases, while Zn-chelate is designed as a systemic bactericide for controlling HLB • Sharing characterization and field trail data on MS3T <p>Maria Campos, Ph.D., Preeminent Postdoctoral Scholar, NanoScience Technology Center, University of Central Florida</p>	<p>Soybean-associated Bacteria that Antagonize Plant Pathogens and Promote Soybean Growth</p> <ul style="list-style-type: none"> • Case study insight from Dr. Ham's laboratory about bacterial agents that antagonize fungal and bacterial plant pathogens as well as promote soybean growth • Discussing further case study insight from rice growth • Perspectives of the research for biostimulant and biopesticide product applications <p>Jong Hyun Ham, Ph.D., Associate Professor, Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center</p>
4:25	<i>End of Conference</i>		

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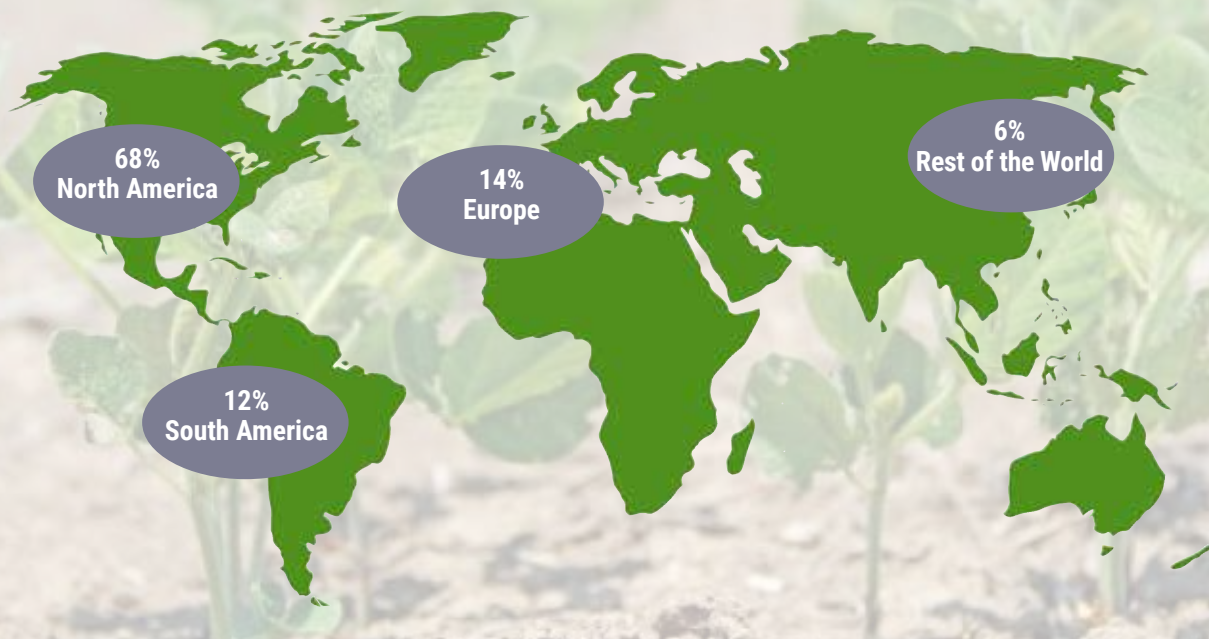
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