GAIN THE SCIENCE, TECHNOLOGIES AND CONTACTS YOU NEED TO OPTIMIZE DEVELOPMENT IN PLANT PROTECTION AND PLANT GROWTH PRODUCTS

**BIOSTIMULANTS**
Increase crop yields, apply horticultural best practices and enhance nutrient use efficiencies.

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Enhance the bioavailability and delivery of your active ingredient while remaining EPA-compliant

**NEW FOR 2017**

- KEYNOTE PANEL: The Impact of M&A Across Industry
- How the Industry is Changing and its Impact on Growers
- How SME’s Can Survive in Today’s Market
- Increasing Crop Production for Global Food and Nutrition Security

Register Today: www.CropsChemicalsUSA.com
Join 250+ experts at Crops & Chemicals USA 2017 to discuss, debate and challenge the latest biological and chemical advances within formulation, regulation and product commercialization.

Crops & Chemicals USA in a Snapshot:

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Industry Experts Present Strategies to Accelerate Biostimulants, Biopesticides, and Agrochemical Formulation Efforts

Ry Wagner
CEO
AGRINOS

Marcus Meadows-Smith
CEO
BIOCONSORTIA

John Brubaker
CEO
PLANT IMPACT PLC

Roger Beachy
CSO
INDIGO AGRICULTURE

Pre-Conference Workshop: Global Harmonization of Plant Protection

Monday, July 24, 2017 • 9:30 am - 4:00 pm

For several decades, growers and processors demand a level playing field in plant protection so that their produce finds open markets. Their expenses for crop protection need to be recuperated after harvest. Harmonized Plant Protection means means (a) the availability of identical active substances for each crop and (b) use patterns that are similar enough to leave compatible residues across national borders. The problem is well known to all involved in plant protection. Therefore, since 1999, the OECD has led the development of common approaches, agreements and templates. Today, companies and regulators could theoretically cooperate across national borders using the OECD material. In this workshop we will explore which material is available, how companies and regulators can make use of this material and what, if anything, holds them back.

Imme Gerke, Global Regulatory Strategist, IDRG
### PLEINARY SESSION

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>8:15</td>
<td>Registration &amp; Coffee</td>
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<tr>
<td>8:40</td>
<td>Chairperson’s Opening Remarks</td>
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<tr>
<td>8:45</td>
<td>KEYNOTE PRESENTATION: Coming Full Circle – “New” Biology and the Future of Agriculture</td>
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<tr>
<td>9:15</td>
<td>KEYNOTE PANEL: Movers and Shakers: the Impact of M&amp;A across Industry</td>
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<td>10:00</td>
<td>Networking Refreshment Break in Exhibit Hall</td>
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<td>10:45</td>
<td>SPOTLIGHT SESSION: 🇺🇸 Trace Genomics 🇺🇸</td>
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<td>11:20</td>
<td>Interactive Session on Adjuvants</td>
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<td>11:50</td>
<td>Case Study of a Bridge between a Scientific Discovery and its Industrial Development as a Biopesticide</td>
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<tr>
<td>12:30</td>
<td>Networking Luncheon in Exhibit Hall</td>
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**SPOTLIGHT SESSION: Trace Genomics**

- The Trace Genomics microbiome sequencing platform enables screening of disease-causing microbes and interpretation of millions of beneficial organisms in the soil.
- Their machine learning platform enables simple integration of soil microbiome information into field trials and operational settings, optimizing the performance of bio-based products by illuminating where and how they shift the soil microbiome.
- Their innovative technology has received notable media coverage in Forbes, TechCrunch, Wall Street Journal, AgFunder, and Fast Company, and was most recently listed by Forbes as one of the 25 most innovative Ag Tech startups.

**Brassinosteroids: Their Impact on Crop Productivity and Quality**

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<tr>
<td><strong>Brassinosteroids: Their Impact on Crop Productivity and Quality</strong></td>
<td>Bhushan Mandava</td>
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<tr>
<td><strong>Interaction of Microbial Biopesticides with Conventional Pesticides</strong></td>
<td>Stephen O. Duke, Research Leader, USDA</td>
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<tr>
<td><strong>Case Study of a Bridge Between a Scientific Discovery and its Industrial Development as a Biopesticide</strong></td>
<td>Mr Sandro Frati, New Business Development, bi-pa</td>
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**Advancing Understanding and Investing in the Future of Crop Enhancement**

- Crop enhancement technology is still a relatively new entry to the world of agricultural inputs
- How to build a reputation of consistent, reliable and trusted performance
- Establishing effectiveness, innovation, safety and compliance
- Plant impacts R&D approach

**Regulatory Progress Report: Critical Information from the Biostimulant Coalition**

- An update on microbial products and biostimulants
- Reviewing biostimulant classifications: classification with different entities
- How is the Biostimulant Coalition working with federal and state officials to help harmonise the regulation of biostimulants?
- What regulatory progress has been made in the past 12 months?

**Plant Regulators and Plant Biostimulants: An EPA Regulatory Perspective**

This session will provide regulatory updates from the EPA.

**INTERACTIVE SESSION ON ADJUVANTS**

60 minute Interactive Session on Adjuvants. This will include a presentation on: Novel Adjuvants for In-Tank Use and the Impact of Delivery. We will also cover adjuvants that are also used not in tank mixes. Following presentations there will be interactive discussion on: Analyzing Recent Adjuvant Developments.

**Networks and M&A: the impact of M&A across industry**

- Movers and shakers: the impact of M&A across industry
- Does recent M&A activity improve innovation or hinder it?
- How will M&A impact the cost of products?

**Movers and Shakers: the Impact of M&A across Industry**

- Marcus Meadows-Smith, CEO, BioConsortia; John Brubaker, CEO, Plant Impact plc

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**Chairperson’s Opening Remarks**

- Appreciating the inter-relationships of plants, soil, and the microorganisms within the agricultural environment
- Rapid and diverse – and interconnected – technological innovations are occurring as universities, start-ups and established agri-giants move into the marketplace
- Consumers and retailers are driving the need for sustainable solutions in agriculture

**KEYNOTE PRESENTATION: Coming Full Circle – “New” Biology and the Future of Agriculture**

- Dr. Ry Wagner, CEO, Agrinos

**KEYNOTE PANEL: Movers and Shakers: the Impact of M&A across Industry**

- How is industry changing and what impact is this having on growers?
- Will SME’s be wiped out of the market? How will they survive?

**Interactive Session on Adjuvants**

- Patrick McMullan, President, Ramulus LLC

**Case Study of a Bridge Between a Scientific Discovery and its Industrial Development as a Biopesticide**

- Mr Sandro Frati, New Business Development, bi-pa

**Authors:** Sandro Frati, BPA Biological Products for Agriculture, Technologelaan 7, 1840 Londerzeel, Belgium
Peter J. Porpiglia, AMVAC Chemical Corporation, 4695 MacArthur Court, Suite 1200, Newport Beach, CA 92660 USA
<table>
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<th>Time</th>
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<th>Biopesticides</th>
<th>Biostimulants</th>
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</table>
| 2:00  | **Maximising Returns through Re-Formulation: Reformulation Strategies for Old Molecules**  
- New formulation technologies applied to off-patent molecules  
- Registration strategies for off-patent molecules  
- Maximising returns through re-formulations  
- Industry case study examples of where older formulations have been improved  
- What constitutes a new formulation and what constitutes a minor change?  
- Opportunities and strategies for generic companies  
Dr. Miguel Gimeno, Scientific/Technical Advisor, GAT Microencapsulation GmbH | **The BioAg Alliance**  
- Our microbe discovery and development strategy  
- Preliminary results of our pipeline  
- Development of new products  
- Key trends/challenges  
Matthew DiLeo, Group Leader, Novozymes | **Updates from Kannar Earth Science**  
Sam Cloet, CEO, Kannar Earth Science |
| 2:30  | **Performance Chemistry: Biobased Solvents with Additional Benefits for Agrochemical Formulations**  
How do we create commercially viable products that produce stronger crops that resist disease and contribute to better food- while being kinder to the planet? The presentation will cover Corbion's biobased solvents that exhibit high solvency power for a large range of active ingredients that have very low phytotoxicity, are environmentally friendly and easy to use.  
Douglas Porto, Market Application Scientist, Chemical Specialties, Corbion | **Applying Biologicals to Seed; Biological Enhancements for Agricultural Crops Requires Specific Care and Handling**  
- Addressing the specific care and application method to ensure successful results when using biological products.  
- A list of fail factors will be covered  
- Explanation of why biologicals need special care  
Mr. Vince Wertman, Director of Technical Services, ABM | **Case Study from Acadian Seaplants**  
Jeff Norrie, Senior Scientist, Acadian Seaplants Limited |
| 3:00  | **A Formulation Challenge Scenario**  
During this session a formulation problem will be presented to the group. The group will be able to share their thoughts, ideas and possible solutions to such a challenge.  
William Geigle, Principle Scientist, Formulations, Provivi | **New Discoveries for Biocontrol from the Crop Microbiome**  
- Review of the AgBiome discovery pipeline, including new leads and new targets for biocontrol  
- Lessons learned from sequencing 30,000 cropassociated microbes  
- Laboratory and field results for disease and insect control pipelines  
Dave Ingham, Agbiome | **The First 25 Years Marketing Biostimulants and a Tribute to Some Pioneers**  
What Has Been Learned: Biostimulants Needed An Industry, Relationship In Sales Matter, Precision Farming Impact, Yield Enhancing Products vs All Other, Faith  
Pioneers Who Have Contributed To The Industry: Dr. T. L. Senn, Per Bye Ohrstrom, Travis Jones, Dr. Ronnie Heiniger |
| 3:30  | Networking Refreshment Break in Exhibit Hall | | |
| 4:00  | **Case Study 1: Formulating Biopesticides**  
- Case study from Marrone Bio Innovations exploring formulating biopesticides  
- Exploring formulation challenges including stability  
- How to overcome some of these challenges?  
Pankaj Pathak, Formulation Scientist, Marrone Bio Innovations | **Sustainability in Agriculture**  
Improving soil health, natural resource utilization and crop productivity - cornerstones of sustainable agriculture.  
Terry Stone, VP of Regulatory Affairs & Sustainability Programs, Agrinos | **Understanding and Exploiting the Interface of Plants (Genetics) and the Microbiome**  
Alan Gould, Owner, Soft biotech consulting |
| 4:30  | **Case Study 2: Formulating Biopesticides**  
- Case study from exploring formulating biopesticides  
- Exploring formulation challenges  
- When formulating biopesticide products what are some of the key considerations scientists need to take into account?  
Luis Enrique Miranda Arredondo, General Manager, Mezfer | | |
| 5:00  | **Case Study 3: Formulating Biopesticides**  
- Case study example of formulating biopesticide products  
- Feedback on biopesticide formulation and key advice from Agrilife  
Venkatesh Devanur, CEO, Agrilife | **Key Points on Agrobiologicals Development, a SME Biotech Perspective**  
- Developing biologicals- insight and advice from SME point of view  
- Challenges when it comes to developing biological products  
- Innovation within ag biotech companies Participants  
Xana Belastegui Macadam, Chief Business Development Officer, Iden Biotechnology |
| 5:30  | **Case Study 4: Formulating Biopesticides**  
Ketan Metha, Founder & Director (CEO) / FAO-WHO JMPS Member for Registration Guidelines of Biologicals, Ecosense Labs. (I) Pvt. Ltd. / AgroCare | **The Latest Scientific Advances in Peptides as Biostimulants**  
- Comparison of different biostimulants, how they work and why they are gaining of importance in the market place  
- Current R&D and breakthroughs in the biostimulants research and development  
- Peptides, through signaling plants physiological pathways and trigging plant innate system, support plants defense against biotic and abiotic stress  
- Peptides provide additive and synergistic performance for the microbial products as they enable plants to better utilize nutrients and other chemistry produced by the microbes  
- Peptides enhancement of plant's yield through benign mode of action strongly supports sustainable agriculture  
Mariola Kopcinski, Director Scientific Alliances, Plant Health Care | |

**Networking Reception in the Exhibit Hall**

Afterwards, we will be heading to a local bar and restaurant for some drinks, snacks and evening entertainment. We look forward to welcoming you.
Wednesday, July 26, 2017

8:45 Chairperson's Opening Remarks

9:00 **KEYNOTE PRESENTATION:** Increasing Crop Production for Global Food and Nutrition Security
Achieving the longstanding goal of global food and nutrition security will improve human health as well as global living standards. While great progress has been made to reduce chronic hunger, incidences of sporadic famines and outbreaks of pests and pathogens remain high. Progress is in part a consequence of increased investments in productivity, and market access of producers and consumers. It is encouraging that more developing countries have focused on improving production of nutrient-rich crops, as well as commodity row crops, returning both financial and social benefits. Seed traits, including tolerance to biotic and abiotic stressors developed via conventional and advanced genetics are key factors in achieving food and nutrition security. Likewise use of beneficial microbes and microbe-derived materials, which act as biostimulants and bioprotectants against pests and diseases, expand the repertoire of genetics-based tools that can be used to improve crop performance and reduce farmer input costs. Indigo (www.indigoag.com) focuses on identifying microbes that are components of the endophytobiome to improve plant growth and tolerance to stressors. This and other uses of microbes can potentially reduce the use of agricultural chemicals in coming years as new science and additional R&D focus on sustainability in agriculture.

Roger Beachy, Chief Science Officer, Indigo Agriculture

10:00 **Networking Refreshment Break in Exhibit Hall**

10:30 **Agrochemical Formulation**

**New Biopolymer Based Microcapsules for Plant Protection And Nutrition**
The benefits of encapsulation of active agents for plant protection nutrition. Simultaneous encapsulation of both biological and chemical active agents. Synergy of biological and chemical active agents for ecological production. New ecological formulation for agricultural protection.

Marko Vincekovic, Ph.D., Associate Professor, Faculty of Agriculture, Department of Chemistry, University of Zagreb

11:00 **Biostimulants**

**Formulation and Compatibility of Fertilizers**

Christopher Underwood, Innovation Chemist, Product Development Manager, AgroLiquid

11:30 **Biopesticides**

**PANEL hosted by Xconomy:** Applying New Biology to Agriculture and Food

The U.S. leads the world in applying those advances to create medicines to improve or even cure human diseases. But these same discoveries, in areas like gene editing, epigenetics, the microbiome, proteomics, antibiotics, diagnostics, and more, hold tremendous potential for agriculture and food—and are being pursued by both big companies and a new generation of startups. What have we learned from human work that can be applied to this vast other domain, and what are the barriers slowing things down? What is the role of startups in this new era? How can we accelerate our learnings in human therapeutics to improve crop outputs, yield more nutritious food, and produce better, safer pesticides and fertilizers that can help both advanced economies and developing nations?

John Dombrosky, CEO, Agtech Accelerator

Chris Otey, Senior Principal, Science & Technology, Alexandria Venture Investments

Mary Beth Miranda, Novozymes

Ray Shilito, Bayer

12:15 **Networking Luncheon in Exhibit Hall**

1:30 **WEBINAR:** What's New In Agrochemical Formulation? A Review of Novel Technologies and Approaches

Dr Jim Bullock, Director, iFormulate Ltd

**Developing Microbial Biostimulants to Enhance Agricultural Productivity? Promise, Perils and Possibilities**

- Understanding biostimulants from a soil ecology perspective
- Benefits of selecting consortia
- Challenges of selectively breeding of soil microbes to work well in agricultural management
- Overcoming the hurdles to market: Development time, effectiveness, efficacy and shelf life

- Our impact

Colin Bell, Co-Founder and Chief Growth Officer, Growcentia

**Efficient Manufacture of RNAi and its Use in Urban and Structural Pest Control**

- Efficient manufacture of RNAi and its use in urban and structural pest control
- RNA for RNAi can be produced efficiently and cost effectively
- RNAi is an environmentally and toxicologically benign method for controlling urban and structural pests
- RNAi dose for control of fire ants is in the nanogram range
- Portfolio of RNAi products for urban and structural pest management

John Killmer, VP, Marrone Bio Innovations

2:00 **Case Study: Pesticide Suspoemulsion (SE) Formulation**

Roy Chen, Formulation Lab Team Lead, ADAMA

**The Promise of Microalgae as a Soil Amendment**

- The role of microalgae in natural, healthy soils
- Microalgae's role in the biome
- Understanding the difference between microalgae and macroalgae
- What have been the barriers to the development of microalgae products for plant agriculture?
- What does the research tell us about the impact of microalgae on soil health and crop performance?

Len Smith, Chief Business Officer, Heliae

**Biologica**

- How biologica affect global production
- Market Challenges with Biologica
- Distribution: Hurdles & Solutions
- Future Needs

Bradley Curtis, International Sales Manager, ABM

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| 2:30  | Cyclodextrins for Improvement of Agrochemical Formulations by Wacker | Improving Field Performance of Beneficial Microbes Using a Novel Delivery Approach  
- Biologics products experience significant population declines within the current supply chain, leading to inconsistent field performance  
- Many microbes proven in research to have beneficial effects on multiple crops have not been commercialized because of incompatibility with current distribution methods  
- To address a commercial need, 3Bar Biologics developed a novel delivery approach that activates the beneficial microbes at the point of use to deliver the freshest, most viable biologics product to the field  
- Consistent yield advantages have been shown using the delivery system in corn and soybean field trials.  
Jane Patterson Fife, Chief Science Officer, 3Bar Biologics | Next Generation Biopesticides in the Microbial & Microbiome Space  
Marcus Meadows-Smith, CEO, BioConsortia |
| 3:00  | Case Study: Understanding Challenges of Thermal Foggng High-Vapor Pressure Formulations Inside Potato Storages  
- Description and design variations of potato storages  
- Desirable formulation attributes for efficient thermal fogging  
- Challenges and obstacles for optimal vapor distribution inside storages  
- Modeling vapor movement patterns over time  
- Importance of storage design, formulation, ventilation, fan speeds, humidity, temperature etc. on vapor movement  
- Problems to avoid  
John A. Immaraju, Ph.D., Senior Director of Product Commercialization & International Product Development, AMVAC Chemical Corporation | Snake-oil Products – Can We Overcome This?  
- How to show your product is not a snake-oil product  
- How to educate growers and get your message across  
- How damaging are snake oil products to us?  
Roger Tripathi, President, Acadian Plant Health Division, Acadian Seaplants Limited | Fungal Biopesticides for the Suppression Or Control Of Various Diseases When Used alone, in a Tankmix or in an IPM Program  
- Endophyte Enhancement: Features, Benefits and Challenges  
- It’s Alive: Retraining the scientist / grower to use a living organism.  
- Inside/Outside…inoculation of the Endophyte into the seed, leaf, flower and fruit.  
- Competitive Exclusion: 1st to occupy wins - Mycoparasitism: Late entries are food  
- Stress Reduction: Sunlight Saving, Drought Tolerance and Rhizobia Enhancement  
- Changes: Microfloral Shift in crop residue, root systems and in fruit and grain.  
- Disinfection: Pathogen reduction / removal...seed quality improvement.  
- Toxin reduction or removal for improved Food and Feed  
- IPM... Fewer Applications: Endophyte Enhanced Crops Yield  
Bill Brown, President, Adjuvant Plus |
| 3:30  | Networking Refreshment Break in Exhibit Hall | Case Study from Greencorp  
Jesus Yáñez, CEO, Greencorp | An Update from NewLeaf Symbiotics  
Mike McFatrich, Vice President, Business Strategy and Development, NewLeaf Symbiotics |
| 4:00  | Trends of Rapid Changes to These Nozzle Designs that Impacts Pesticide Application  
Andrew Hewitt, Senior Research Fellow,  
The University of Queensland, Australia and  
The University of Nebraska, USA | Use of Remotely Piloted Aircraft (RPA) for Pesticide Delivery  
- Results from multi-season field evaluations of unmanned, remotely-piloted aircraft spraying  
- Current success in commercialization of RPA agrochemical applications  
- Technical issues in RPA spraying  
- Current regulatory issues in RPA spraying.  
Durham (Ken) Giles, Professor and Vice Chair,  
Department of Biological & Agricultural Engineering,  
University of California, Davis | Prohydrojasmon Improves Fruit Coloration in Apples  
Mohannad Alamjathoub, Agri Sci |
| 4:30  | End of Agrochemical Formulation Track | A Research Update from Balakrishnan Prithiviraj from Dalhousie University  
Balakrishnan Prithiviraj, Associate Professor,  
Dalhousie University | End of Biopesticides Track |
| 5:00  | End of Biopesticides Track | Close of Conference |
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<td>$2,099</td>
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<tr>
<td>2-Day Supplier * Main Conference Pass (Tues-Wed)</td>
<td>$2,099</td>
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<td>$500</td>
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Register by July 19

Organizations that sell to agrochemical companies must register under the ‘supplier’ rate. Only organizations that solely sell direct to end-users/farmers may register under the ‘industry’ rate. All registrations are subject to review by KNect365.

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