



conferenceseries.com

Agri World 2018



11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France

Keynote Forum

DAY 1

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



Jean-Francois Hocquette

INRA(French National Institute for Agricultural Research), France

What type of meat will we eat in the future: Still conventional meat from livestock, *in vitro* meat or meat analogues?

The global population is estimated to reach 9 billion by the year 2050 and the meat industry would need to increase its production by approximately 50-73% based on current consumption trends. In response, there are several different options that have the potential to satisfy demand and increase production. One of these options is the production of cultured meat, which regularly generates media interest because of the potential contribution to food production while protecting the environment and respecting animal life. Proponents of artificial meat have been successful in engaging the interest of public media with an effective communication strategy. Cell culture has been performed successfully in research laboratories, however, there are significant technical difficulties limiting large-scale production including prohibitive cost and a lack of similarity of the obtained product with animal derived-meat. Other alternatives include selective breeding, animal cloning, genetic modification, agroecology systems and orientation towards bio-economy (those parts of the economy that use renewable biological resources). Furthermore, new protein sources from plants, fungi, algae or insects could also be used as a substitute for meat proteins. In the future, it is likely that meat substitutes will increase market share through competition with low-grade cuts of meat, cheap meat, ground meat and processed meat. To meet growing demands for protein and in the face of growing competition from other protein sources, the conventional meat industry must adopt new farming systems. The traditional more extensive livestock system (pasture-based beef and lamb) is one option likely to satisfy consumers' expectations for natural products. Grazing systems are also the best to convert low-grade cellulose from grass into high quality organoleptic and healthy products. Ultimately, consumer acceptance of artificial meat will depend on moral or ethical concerns about the technology, as well as the usual food product concerns such as price, quality and providence.

Biography

Jean-Francois Hocquette is a Scientist at the INRA(French National Institute for Agricultural Research), France. His research interest mainly concerns with muscle biology as relevant to muscle growth and beef eating quality. His scientific activity resulted in 250 papers, 2 patents, over \$7M in grants, Mentor to 27 scholars, Adjunctship (800 students) and 60 lectures worldwide. He was the Head of the Herbivore Research Unit and currently works for the High Council for Evaluation of Research & Higher Education. Besides, he is also involved in the activities of the European Association for Animal Production and of the French Meat Academy. He was an Associate Editor of BMC Genomics, edited two EAAP books and is currently Editor-in-Chief of the *French Meat R&D Journal*.

jean-francois.hocquette@inra.fr

Notes:

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



Jerry Johnson

Colorado State University, USA

Using decision trees for variety selection

Crop variety trials may consist of 50 entries or more. The main purpose of variety trials is to provide unbiased and reliable information to producers for making better variety selections. Variety selection is a very important and easily managed decision for each field every year. Better variety decisions lead to 1-2% increase in yearly yield. Variety trial results are often presented as a list of varieties in descending order of yield. These tables are deceptive because there is no expected difference in yield for the top varieties, yet the table leads producers to believe that the top variety is better than a lower ranked variety. The reasons for the continued use of deceptive variety trial tables are investigated. Wheat variety trials in Colorado USA are used to illustrate the confusion and ineffectiveness of common reporting practices and how we alleviate ambiguities by the use of variety selection decision trees and on farm testing of select varieties. A combination of these practices has led to vastly improved rates of new variety adoption and improved planting of certified seed of superior Colorado State University varieties in the state in addition to higher yields.

Biography

Jerry Johnson is a Professor and Extension Specialist in the Department of Soil and Crop Sciences at Colorado State University in Fort Collins, Colorado, USA. He has conducted food crop variety trials in Francophone West Africa, the state of Washington USA, and in Colorado USA from 1976 to till date.

Jerry.Johnson@colostate.edu

Notes:

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



Elie K Barbour

King Abdulaziz University, KSA

Global research ensuing in an invention for comprehensive control of coccidiosis in poultry

This study deals with a global research data, compiled of eight countries, aimed at replacement of synthetic poultry coccidiostats by an invented comprehensive dual approach of decontaminating poultry barns by Wide Spectrum Disinfectant (WSD) and intermittent supplementation of drinking water with natural emulsion of Essential Oil Blend in Water Extract (EOBWE) of plants. Six trials of this global research were concluded in isolation unit facilities and laboratories, while the other four trials were performed in the field. The six isolation facility and laboratory trials had different objectives that included, analyzing the protection methods against coccidiosis by intermittent or continuous administration of EOBWE in drinking water against controlled challenge by sporulated oocysts of *Eimeria* spp., via the mouth or contaminated floors. Another two objectives were to study the effect of different concentrations of EOBWE and WSD on lysis of *Eimeria*-oocysts. A fourth objective compared the control of coccidiosis in broilers by the invented dual approach of using WSD and EOBWE versus classical disinfectants and synthetic coccidiostats. The field trials were four. The first compared the dual intervention by classical disinfectants and synthetic coccidiostat vs. the invented intervention by WSD and EOBWE against controlled floor contaminated-challenge in broilers by equivalent number of sporulated oocysts of 8 *Eimeria* spp. The second and third trials had the same comparison but against field challenge of broilers by *Eimeria* spp. The fourth trial compared the impact of synthetic coccidiostat alone vs. concurrent administration of both the synthetic coccidiostat and the EOBWE on protection of broilers against field challenge by *Eimeria* spp. The compiled data of this global research resulted in a US patented-invention of dual method for decontamination of surfaces by WSD and for drinking water supplementation by natural EOBWE, that led to comprehensive control of coccidiosis in poultry, by significant reduction of oocysts output and its associated lesions, and consistent enhancing of the chicken performance.

Biography

Elie K Barbour has completed his MS in Animal Sciences at the American University of Beirut, and his PhD at University of Minnesota, St. Paul. He has served for many years as Chairman of the Animal and Veterinary Sciences Department at the American University of Beirut, and as a Consultant to major intensive domestic farms in the Middle East. He is on the Editorial Board of the World Animal Health Organization (*Revue Scientifique Et Technique Journal*), and *Veterinaria Italiana Journal*. He has around 125 manuscripts published in international journals in the field of animal production and health.

eliekamilbarbour1950@gmail.com

Notes:



conferenceseries.com

Agri World 2018



11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France

Keynote Forum

DAY 2

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



Fabienne Trolard

INRA-UAPV, UMR EMMAH, France

How to address sustainability in agriculture?

In the world, agriculture developed 10,000 years ago, most of plant and animal species of man's interest have been domesticated. Today's agriculture still relies almost exclusively on these same species. According to global changes and the challenges of food security, scientists are being questioned by decision-makers and stakeholders in the territories on the sustainability of agro-systems. Valuable information on this topic and recommendations can be derived from the study of practices and processes related to agriculture over time. Long-time (up to 1,000 years), middle-time (around 50-60 years) and short-time (one hour to 3-4 months) studies illustrate hereafter the field of possibilities to produce this information. In the first example, the period from 4500 years BP till date was explored by the help of palynological determinations of pollens extracted from a continuous 720-cm core drilled on the delta of Mirna River (gulf of Venice) in the coastal zone of the Adriatic Sea. With an average chronological resolution for core stratigraphy of 7 years per cm, a succession of agro-pastoral activities has been observed, with cereals (about 3000 years BP), olive growing, viticulture and orchards (about 2000 years BP). It can also be noted the abandonment of all agricultural activities in this zone during more than 600 years, which can be ascribed to the consequence of the major volcanic eruption of Santorini (1,650 years BC). In the second example, the consequences of intensive agriculture of the last 60 years have been studied in two agro-systems in the South-East of France: In the rice cropping in Camargue and in the meadows in Crau's area (hay production with a COP label). In Camargue, X-ray diffraction on the clay fraction in the paddy soils, compared to a control, show a significant increase of the clay crystallinity in the paddy soil, which implies a decrease of their solubility and thus of silica bioavailability for plant growth. The sustainability of rice crop system requires the clearing of silica exportations. In Crau's area, long-term database concerning hay's mineral content, dry matter and climate dynamics have been statistically analyzed. Results show a steady state (in quantity and quality) of the production despite an average temperature increase of 1.9 °C since 1960. Our findings suggest that irrigation, both with the water inputs and quality of water, has played a key role for the sustainability of hay production since the 16th century. In the third example, the short time (~1 hour intervals) of processes in agriculture has been explored during several rice crop seasons by *in situ* monitoring of water in waterlogged soils. Relationships between variations of the chemical composition of water and plant growth have been established from field data. Kinetic modeling of digestion of nitrogen fertilization by the agro-system has been proposed and allow for separating biotic from abiotic processes and defining characteristic times of relaxation.

Biography

Fabienne Trolard is a permanent Researcher at the UMR INRA-UAPV with a PhD and "Aggregation of French Higher Education" in Earth Sciences, specializing in Mineral Geochemistry and Geophysics. She has been working at INRA, for more than 25 years in Soil and Environmental Sciences. She co-created the INRA lab (Geochemistry of Soil and Water) at Aix-en-Provence in 2000 and was its Leader for 6 years (2004-2009). She was the INRA Scientific Leader of the Astuce & Tic program (2008-2011) and Lead of the pathfinder PRECOS (2013-2014) and PRECOS Business (2015-2016). Since 1986, she has published over 280 papers and supervised 16 PhD candidates and 3 post-doctorates. She teaches at the universities of Aix-Marseilles (Master MAEVA), Poitiers (Master NMAC, Erasmus Mundus) and Avignon (CNAM-Ecole des Arts et Métiers).

fabienne.trolard@inra.fr

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



John M Jemison

University of Maine, USA

Innovative practices for dairy and potato farmers to adapt in increasingly variable climatic conditions: Lessons learned in Maine

Maine farmers have become increasingly concerned about variable weather conditions affecting current and long-term productivity. In 2011, we conducted 15 focus groups in a program called 'Assessing Maine's Agricultural Future - 2025' and we asked farmers: What changes are you making on your farm relative to recent weather patterns? As one might expect, responses ranged from challenging us that weather is indeed more variable now than previously, to others saying that they had adopted numerous practices including no-till production, purchased irrigation equipment and installed tile drainage. Fruit producers, particularly apple and blueberry growers were most concerned about variable weather, while potato and dairy producers seemed least concerned and more entrenched with their production methods. Since then, we have developed a focused applied research and extension outreach effort to dairy and potato growers to work on improving soil quality to increase climate resilience. While cold wet soils were once thought to prohibit, no-till production in Maine, some dairy farmers even in northern parts of Maine have adopted the practice. We recently surveyed early adopters to find out why they changed and sampled fields to assess soil health. While most mentioned reduced fuel use, labor and time as key drivers, some discussed improving soil quality. Interestingly, we asked farmers to identify fields they wanted information on soil health and to tell us which fields they thought would have the best and worst soil health scores. They were correct, only 40% of the time indicating that they don't fully understand soil quality. Our efforts to make potato production systems more resilient have centered on reducing tillage where possible (such as one-pass hilling), evaluating the use of nurse crops to protect soils before plant emergence, adopting longer rotations and integrating crop and livestock farms. Key field experimental results will be highlighted in the presentation.

Biography

John M Jemison is an Extension Professor of Soil and Water Quality. He conducts applied research and educational outreach programs to encourage growers and homeowners to implement practices to improve soil quality and protect surface and ground water supplies. With projects like the Orono Community Garden, he teaches volunteers to grow food using organic practices and understand civic agriculture. His agricultural research focuses on nutrient and weed management strategies to improve soil health and crop productivity, integrating crop and livestock operations, reducing crop production impact to water resources and increasing resilience of cropping systems to change climate through reducing tillage and improving soil health. He is also a Cooperating Professor with the School of Food and Agriculture.

jemison@maine.edu

Notes:

11th World Congress on

PLANT BIOTECHNOLOGY AND AGRICULTURE

March 05-07, 2018 | Paris, France



Jaime Malaga

Texas Tech University, USA

Horticultural exports from developing to developed countries: Case of Latin American competition for the US market

Strong increase on per capita consumption of fresh fruits and vegetables in developed countries offers a high value market opportunity for labor intense, small farm size agriculture of developing countries. Improvements on transportation technologies and proliferation of free trade agreements have made possible, a surge on exports of horticultural products with important effects on rural income and employment for some exporting countries. International organizations have emphasized the effects of these trends on agricultural development of some lower income nations. However, a strong competition for high value horticultural markets may be causing huge disparities in terms of relative success by exporting countries. Our research uses a combination of market share analysis and statistical trends to evaluate the relative performance of several Latin American countries in their efforts to penetrate and compete in the high value, large volume US market for fruits and vegetables in the last sixteen years. Results show great diversity of performances by country and product with losing and gaining trends. Bananas, fruit juices and frozen vegetables present diminishing market shares while imports of avocados, mangoes, grapes, asparagus and broccoli expanded constantly. On the other hand, Peru, Mexico, Chile, Guatemala and Costa Rica show double digit growth export rates while countries like Ecuador, Colombia, Honduras and most of the Caribbean Islands present a relative poorer performance. The paper attempts to establish a relationship of relative export success with factors like existence of trade agreements, phytosanitary protocols, export infrastructure, government programs and business environment. We think that important lessons can be learned from this analysis for developing countries trying to benefit of the high value horticultural markets of developed countries.

Biography

Jaime Malaga is a Professor of Agricultural and Applied Economics at Texas Tech University, has 20 years of experience analyzing effects of international trade and agricultural development. He teaches agricultural trade and agribusiness marketing in graduate classes and has provided professional consulting services to several agencies including the World Bank, the Inter-American Development Bank, The Agency for International Development and the US Department of Agriculture.

jaime.malaga@ttu.edu

Notes: