

# 2<sup>nd</sup> African Conference on Precision Agriculture

TAMALE, GHANA

7-9 | December | 2022



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**PRECISION AGRICULTURE**  
*in ACTION for AFRICA*

Ghana Satellite Site Program



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# AFRICAN CONFERENCE ON **Precision Agriculture**

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# ABOUT THE African Conference on Precision Agriculture



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The mission of the **African Conference on Precision Agriculture (AfCPA)** is to “connect the science and practice needed to put precision agriculture in action for Africa.” Through this mission, AfCPA seeks to provide a pan-African platform focused on highlighting new advances in the fields of experimental and applied precision agriculture.

The conference is aimed at strengthening and supporting the precision agriculture community within the African continent. AfCPA wishes to engage key stakeholders including scientists, policymakers, extension staff, crop consultants and advisors, agronomists, and service providers towards the common goal of building the capacity and resilience of African cropping systems.

AfCPA 2022 is one conference, multiple satellite site event offering a local opportunity to view presentations from the main conference while participating in a regional precision agriculture program organized by the site's host.

#### MAIN SITE:

Nairobi, Kenya

#### SATELLITE SITES:

Abidjan, Côte d'Ivoire  
Cairo, Egypt  
Addis Ababa, Ethiopia  
Tamale, Ghana  
Keffi, Nigeria  
Pietermaritzburg, South Africa  
Lomé, Togo  
Tunis, Tunisia  
Kampala, Uganda  
Harare, Zimbabwe



AfCPA is an initiative of the African Plant Nutrition Institute (APNI) in partnership with Mohammed VI Polytechnic University (UM6P), the International Society of Precision Agriculture (ISPA), and the African Association for Precision Agriculture (AAPA).



## SATELLITE SITE HOSTS

**Prof. Adima Amissa Augustin**

National Polytechnic Institute  
Félix Houphouët-Boigny

**Prof. Dr. Abdelaziz Belal**

National Authority for Remote  
Sensing and Space Sciences

**Dr. Temesgen Desalegn**

Ethiopia Institute  
of Agricultural Research

**Dr. Richard Oteng-Frimpong**

CSIR-Savanna Agriculture  
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**Prof. James Jayeoba**

Nassarawa State University Keffi

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University of KwaZulu-Natal

**Dr. Jean M. Sogbedji**

Advanced School of Agronomy  
University of Lomé

**Dr. Hatem Cheikh M'hamed**

National Institute of Agronomic  
Research of Tunisia

**Dr. Patrick Musinguzi**

College of Agricultural and  
Environmental Sciences  
Makerere University

**Dr. Regis Chikowo**

Plant Production Sciences  
and Technologies  
University of Zimbabwe



**AfCPA Program Chair**

**Dr. Steve Phillips**

PRINCIPAL SCIENTIST

African Plant Nutrition Institute (APNI)  
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#AfCPA2022



# Invited Speakers

## JOSÉ PAULO MOLIN

**PROFESSOR** - Department of Biosystems Engineering, Luiz de Queiroz College of Agriculture, University of São Paulo

Dr. Molin is an Agricultural Engineer, Ph.D. in Agricultural Engineering at the University of Nebraska and Professor at the University of São Paulo (USP) since 1989, where he coordinates a Precision Agriculture Laboratory.

He works at the interface between the area of Agricultural Machinery and Precision Agriculture, especially with crop and soil sensors, spatial variability, yield mapping and site-specific application of inputs. He coordinated the Brazilian Congress of Precision Agriculture from its creation in 2004 until 2018; chaired the Brazilian Commission for Precision Agriculture - CBAP, of the Ministry of Agriculture, Livestock and Supply from its creation in 2012 to 2016 and was president of the Brazilian Association of Precision Agriculture - AsBraAP, from its foundation until 2020.



## RUTH SITIENEI

**SOIL SCIENTIST** - Africa Program, The Nature Conservancy, Nairobi, Kenya

Ruth is the soil scientist for The Nature Conservancy's (TNC) Africa Region. She leads the region's work on agriculture-soil-climate interactions, regenerative and climate-smart agriculture working with smallholder farmers and other stakeholders. Ruth's work is geared towards enhancing farmers' productivity and profitability and mitigating climate change.

Ruth has worked with hundreds of farmers to improve their farms' soil health in the upper Tana region in central Kenya and the IHEMI cluster of the Iringa and Njombe regions of Southern Tanzania. She recently contributed in co-designing the central Highlands Ecoregion Foodscape (CHEF) which is centered around food production, protecting water, wildlife, and people. Ruth represents the Africa region in the TNC's global Science Cabinet, the apex body that sets and guides the organizations' research priorities.

Her training is in the management of agroecosystem and environment and has a Master of Soil Science from the University of Nairobi. She has published articles in scientific journals on integrated soil fertility management and soil carbon stocks.



# Invited Speakers

## JOHN FULTON

**PROFESSOR** - Ohio State University, Columbus, Ohio USA

John is a Professor in the Food, Agriculture and Biological Engineering Department at The Ohio State University (OSU). His research and extension focus on digital agriculture, machinery automation, and use of spatial data to improve crop production and the farm business.

He works with precision ag services providers across North America on technology options and services to support farmers while speaking internationally about the evolution of digital agriculture. He helps lead the Digital Program at Ohio State and is serving as President of the International Society of Precision Agriculture.



## FRANCELINO RODRIGUES

**SENIOR SCIENTIST** - 2IC from Precision Agriculture research group, Lincoln Agritech Ltd.

Dr. Rodrigues has been working in precision agriculture and remote sensing since 2004, including in his MSc, Ph.D. and Postdoctoral studies. He has precision agriculture and remote sensing experience in contrasting cropping systems (coffee, sugarcane, cereals) in a variety of countries (Brazil, Australia and Mexico) and at different Spatio-temporal scales - from plot experiments towards small and commercial farming systems to regional scale.

Before joining Lincoln Agritech in July 2021, he worked for eight and a half years at the International Maize and Wheat Improvement Center (CIMMYT). At CIMMYT he was involved in projects related to maize and wheat high throughput phenotyping, precision agriculture, and remote sensing techniques applied to crop management at different spatial scales - executing field campaigns in countries in East Africa and South Asia, and Mexico.

His research focuses on the analysis and interpretation of spatial and temporal agricultural data sets, built up using proximal and remote sensing technologies. Francelino is interested in the use of such technologies for high-throughput phenotyping and the development of decision support systems for growers from different industries.





# Invited Speakers

## MYRTILLE LACOSTE

**AGRICULTURAL INNOVATION** - Adj. Research Fellow & Independent Consultant, Curtin University, The Pacific Livelihoods Research Group, Perth, Australia & Montpellier, France

Dr. Myrtille Lacoste investigates socio-technical gaps to identify practical change processes aligned with farming realities. Her expertise builds from working in contrasted RD&E environments in both subsistence and broadacre agriculture. She is a Marie Curie Fellow, a guest editor of the journal *Agronomy for Sustainable Development*, and the lead author of the Nature Food perspective "On-Farm Experimentation to transform global agriculture".

Current projects revolve around farmer-centric research and farmers' knowledge networks, integrating contrasted disciplinary perspectives around the use of digital technologies and the organization of human processes. Applications include the effective translation of agronomic insights and the strategic alignment of stakeholders, for the development of products and services and the design of R&D projects and policies.



## BRENDA ORTIZ

**PROFESSOR AND EXTENSION SPECIALIST** - Auburn University, Auburn, Alabama, USA

Dr. Brenda Ortiz is a Professor in the Crop, Soil, and Environmental Sciences Department at Auburn University. She has a Ph.D. in Biological and Agricultural Engineering from The University of Georgia (USA) with an emphasis on Precision Agriculture and Crop Growth Simulation Modeling. Over the last 14 years, Dr. Ortiz has led several extension and research projects focused on precision agriculture with emphasis on plant pathology as well as irrigation and nutrient management, and identification and co-development of climate-smart strategies for coping with climate variability and climate change. In 2015, she was the leader of the Precision Agriculture Systems Community of the American Society of Agronomy. In 2019, Dr. Ortiz was a visiting scientist at the Food and Agricultural Organization (FAO) in Rome where she worked on methodologies to strengthen the design, implementation, and evaluation of extension programs.

Currently she advises several international research institutes on the design and implementation of extension programs. In 2022, she coordinated the design and implementation of a regional conference in the USA focused on Artificial Intelligence Applications in Agriculture. Besides her university faculty appointment, she serves now as the secretary of the International Society of Precision Agriculture.





# Invited Speakers

## FEMI ADEKOYA

**MANAGING DIRECTOR** - Integrated Aerial Precision Ltd

Femi Adekoya is a plant health scientist by training, an AgricTech professional, and an experienced practitioner in the agricultural & horticultural industry with over a decade year experience. He has a strong interest in and experience with agricultural innovations and technologies. He holds B. Agric (FUNAAB) and MSc. Integrated Pest Management (Harper Adams University) through the prestigious Commonwealth Scholarship by the UK Government.

Currently, Femi leads as the Precision Agriculture Specialist at Integrated Aerial Precision (IA Precision); an enterprise where he uses UAVs and geospatial data analytics to help smallholders & commercial farmers, and relevant agricultural stakeholders adopt and practice precision agriculture. Furthermore, to address the lack of awareness and dedicated education for capacity building towards precision agriculture; he founded Precision Field Academy serving as the Head of Training, bridging the knowledge and skill gaps in precision agriculture and technologies.



## ROBERT BLAIR

**OWNER** - Blair Farms

Robert Blair is a fourth generation Kendrick, Idaho farmer, entrepreneur, AIGEN Solutions director, an agriculture technology company, and Idaho State Senator. The farm is situated on the edge of the rolling hills of the Palouse and not far from his Alma Mater the University of Idaho where he received his B.S. in Agriculture Business. His journey with precision agriculture started in 2003 using a PDA for simple mapping. That evolved into all different types of equipment, including Unmanned Air Systems (UAS) in 2006. Robert is the first U.S. farmer to own and use a UAS. His vision and advocacy of these technologies helped him become the first Precision Ag Institute International Farmer of the Year in 2009. Robert has been on the leading edge of the precision agriculture utilization and is recognized as a domestic and global leader. Robert received an Eisenhower Fellowship in 2011, taking him to South America for six weeks focusing on drones and precision agriculture. During the fall of 2012 he spent three weeks in Germany on a McCloy Fellowship for agriculture.



In Idaho he was recognized as one of the most influential U of I College of Agriculture and Life Science (CALS) alumni, received the 2013 Governor's Award for Agriculture Technology and Innovation and was honored as a 2015 U of I CALS Distinguished Alumni. Robert's vision and leadership ability has been recognized by the positions he has held including president of the Idaho Grain Producers Association, chairman of the National Association of Wheat Growers (NAWG) Research & Tech Committee, chairman of the U.S. Wheat/NAWG Joint Biotech Committee, Idaho Farm Bureau Federation county president, an initial member of Idaho's UAS steering committee, an initial advisory board member of the Drone World Expo, and a member of the AGree Conservation and Crop Insurance Task Force. In 2020, Robert was named to the Federal Communications Commission's Precision Agriculture Task Force Working Group "Encouraging Adoption of Precision Agriculture and Availability of High-Quality Jobs on Connected Farms." In 2022 Robert served as an Idaho State Senator for the 2022 Legislative Session representing Idaho Legislative District Six.

# Invited Speakers

## LOUIS LONGCHAMPS

### ASSISTANT PROFESSOR OF DIGITAL AGRONOMY

- Cornell University, College of Agriculture and Life Sciences, School of Integrative Plant Science, Soil & Crop Sciences Section, Ithaca, NY, USA

Louis Longchamps earned his Ph.D. at Laval University working on site-specific weed management exploring the spatial distribution of weeds at the field scale. He followed with postdoctoral studies at Colorado State University working on precision nutrients, seeds, and water management. As a research scientist at Agriculture and Agri-Food Canada, Dr. Longchamps continued his work on precision agriculture and conducted workshops on observational research.

In his position as an Assistant Professor of Digital Agronomy at Cornell University, he explores the potential of observational research and on-farm experimentation enhanced by digital technologies to accelerate scientific development in agriculture, maintaining productivity while reducing the negative impacts of agriculture on the environment. Dr. Longchamps is the current chair of the On-Farm Experimentation Community of the International Society of Precision Agriculture.



## TEK SAPKOTA

**SENIOR SCIENTIST (Agricultural Systems/Climate Change) - Sustainable Agrifood System (SAS), International Maize and Wheat Improvement Center (CIMMYT) Texcoco, México**

Tek Sapkota Leads Climate Change Science group in CIMMYT and is a member of the Climate Investment Committee in OneCGIAR. His research interest includes analysis of cropping systems from food security climate change nexus. He is involved in studying management consequences on nutrient dynamics in agro-ecosystem and their effect on food security, climate change adaptation, and mitigation.

Tek has worked in IPCC as Lead author as well as Review editor involved mainly in transforming food systems, particularly based on smallholder production systems, under the climate crisis.





# Invited Speakers

## **KWAME AGYEI FRIMPONG**

**INAUGURAL PRESIDENT AND BOARD CHAIR - African Association for Precision Agriculture (AAPA)**

Dr. Kwame Agyei Frimpong is an Associate Professor and Researcher in Soil Fertility at the Department of Soil Science at the University of Cape Coast in Ghana. Dr. Frimpong holds a PhD in Plant and Soil Science obtained from the University of Aberdeen (2011); an MSc in Physical Land Resources from Ghent University, Belgium (2001); an MSc in Precision Agriculture from the University of Mohamed IV Polytechnic, Morocco (2022) and a BSc (Honours) in Agriculture from the University of Science and Technology, Kumasi, Ghana (1992).



Dr. Frimpong has previously worked with Prof. Warren Dick, Ohio State University as Norman Borlaug Fellow, Prof. Bernd Marschner, Ruhr University of Bochum, Germany as a TWAS-DFG Fellow, and Dr. Martin Blackwell as a RIFS fellow at Rothamsted Research, UK. Kwame loves music, reading and soccer. He hopes to promote the integration of technology into existing curriculum in sub Saharan agricultural training institutions, and most importantly, establish international research collaborations and long-lasting friendships.

## **MOUNA MECHRI**

**PHD, CHIEF ENGINEER - National Institute of Field Crops (INGC) Bousalem, Tunisia**

Dr. Mechri has a Ph.D. in Crop Production Science from the National Agronomic Institute of Tunisia (INAT), and a MSc. in Mediterranean Organic Agriculture from the Mediterranean Agronomic Institute of Bari (IAMB).



She is an Engineer in the National Institute of Field Crops (INGC) in charge of soil fertility and plant nutrition program and Visiting Teacher for soil science and soil fertility at the Higher School of Agriculture of Kef (ESAK) and El Kef Higher Institute of Computer science (ISI). She supervises several masters and diploma students' projects at ESAK, ISI, INAT, and Higher Institute of Biotechnology of Beja (ISBB) mainly in soil fertility and plant nutrition. She is a Coordinator and member of several international and national projects, mainly in soil fertility and plant nutrition.



# Invited Speakers

## JACOPO PARIGIANI

**LEAD SOIL SCIENTIST** - Crop Nutrition Laboratories Ltd (Cropnuts), Nairobi, Kenya

Jacopo Parigiani is a soil scientist by profession; a graduate from Wageningen University with a specialization in soil and water conservation. Jacopo has been with Cropnuts for the past 10 years managing Precision Farming accounts assessing remote sense data and generating variable rate programs for clients in Zambia, Tanzania and Kenya reducing the use of chemical fertilizer while maximizing yields.

Jacopo has been surveying and mapping soils on commercial farms across east Africa, running soil suitability surveys to drive investments in.

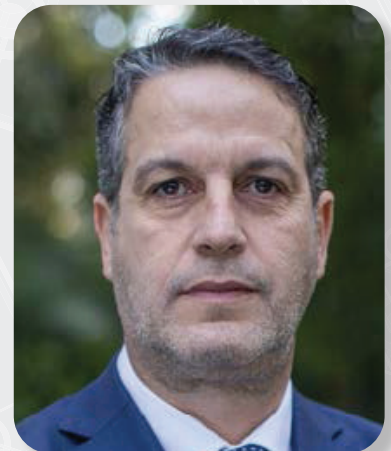


## NAWFEL ROUDIES

**HEAD BUSINESS UNIT** - Al Moutmir, UM6P, Benguerir, Morocco

Nawfel ROUDIES has been managing, for nearly 23 years, agriculture related topics and initiatives, food security, environment and rural development. His leadership went beyond Morocco to cover international level particularly in sub-Saharan Africa and Asia.

Nawfel holds an agriculture engineer degree with a major in Animal Production, from the Hassan II Agronomic and Veterinary Institute in Rabat; in addition to a management certificate from ISCAE in Rabat. Mr. Nawfel ROUDIES joined the OCP Foundation in 2012 as Head of International Portfolio before taking over the position of Head of Al Moutmir Business Unit at Mohammed VI Polytechnic University.



# Invited Speakers

## LEONARDUS VERGUTZ

**PROFESSOR, CHAIR OF SOIL SCIENCE** - Mohammed VI Polytechnic University

Dr. Leonardus Vergütz is a professor and soil scientist currently developing the Chair of Soil Science at Mohammed VI Polytechnic University – UM6P. He is an agronomist with MSc and DSc in Soil Science and Plant Nutrition and has great experience with the highly weathered and acidic soils commonly found in the tropics. Before arriving in Morocco, he was a professor in Brazil and has been studying the mechanisms controlling the fate and behavior of elements in the soil-plant continuum aiming to build more sustainable and productive agricultural systems. Recently he was part of the advisory group commissioned by the European Commission that wrote the policy paper that should guide the R&I cooperation between Africa and Europe for the Green Transition in Africa. This paper was released early 2022 during the AU-EU Summit and brings soil security to the core of the Green Transition in Africa.



## LILIAN WANJIRU MBUTHIA

**SENIOR AGRONOMIST E. AFRICA** - Everris Kenya (ICL Fertilizers), Nairobi, Kenya

Dr. Lilian Wanjiru Mbuthia-Matoke is a young and passionate soil scientist whose special interest is in Agricultural Management Practices that enhance Soil Fertility, Sustainable Crop Production and Environmental Quality. She is currently the senior agronomist for Israel Chemical Limited (ICL) in East Africa based in Nairobi providing technical support for specialty fertilizers as well as training of farmers and extension service providers on soil and crop nutrition management. She also acts as the International Potash Institute (IPI) coordinator for IPI activities in Eastern Africa responsible for promoting potash market development in Eastern Africa.



After many years abroad for her studies, including an MSc in plant pathology and entomology from Hanover University (Germany) and a Ph.D. in Environmental Soil Science from the University of Tennessee (USA). Dr. Mbuthia returned to Kenya in 2015 with a vision of transforming the agricultural landscape of her country. Her MSc focused on the combination of biocontrol organisms in the control of soil-borne pathogens, specifically the combination of mycorrhiza and *Trichoderma harzianum* in the control of Fusarium wilt (*Fusarium oxysporum* f.sp. *lycopersici*) in tomatoes. Dr. Mbuthia's Ph.D. focused on the dynamics of microbial community and nutrient cycling under different conservation agriculture practices (no-till, cover crops, and fertilization regimes) using both biochemical and molecular techniques.

# Program - Day 1

All times listed are GMT.

## Conference Program Legend

|                 |                      |               |               |                   |                     |                  |
|-----------------|----------------------|---------------|---------------|-------------------|---------------------|------------------|
| Plenary Session | Keynote Presentation | Local Session | Panel Session | LS - Live at Site | LV - Live (virtual) | R - Pre-recorded |
|-----------------|----------------------|---------------|---------------|-------------------|---------------------|------------------|

| Day 1 – Wednesday, 7th December |  |  |  |  |  |    |
|---------------------------------|--|--|--|--|--|----|
| 08:30                           | <b>Welcome Messages</b>  |  |  |  |  | LS |
| 08:35                           | <b>APNI Kaushik Majumdar, Director General</b>   |  |  |  |  | R  |
| 08:40                           | <b>AAPA - Kwame Frimpong, President</b>  |  |  |  |  | R  |
|                                 | <b>Keynote Presentations 1 &amp; 2</b>   |  |  |  |  |    |
| 08:50                           | <b>Tropical Precision Agriculture: The Brazilian Experience</b><br><i>Jose Paulo Molin - University of Sao Paulo</i>   |  |  |  |  | LV |
| 09:20                           | <b>Harnessing Soil Health to Create More Restorative and Resilient Food Systems in the Central Highlands Eco-Region Foodscape</b><br><i>Ruth Sitienei - The Nature Conservancy</i>   |  |  |  |  | LV |
| 10:00                           | <b>Break/Posters/Exhibits</b>  |  |  |  |  |    |
|                                 | <b>Local Session 1</b>   |  |  |  |  |    |
| 10:30                           | <b>Enhancing Crop Yield in Smallholder Farming Systems of Northern Ghana: The Role of 4R Nutrient Stewardship</b><br><i>Haruna Abdulai</i>   |  |  |  |  | LS |
| 10:50                           | <b>Soil Nitrogen Loss through Leaching after the Application of Different Grades of Multi-Nutrient Granular and Briquetted Fertilizers</b><br><i>Abeka Hammond</i>   |  |  |  |  | LS |
| 11:10                           | <b>New Trends in Precision Agriculture Management: Africa Perspective</b><br><i>Vincent Aduramigba-Modupe</i>  |  |  |  |  | R  |
| 11:25                           | <b>Spatio-Temporal Assessment of Drought in Northern Region of Ghana</b><br><i>Asante Boadu Ayebofo</i>  |  |  |  |  | LS |
| 11:40                           | <b>Use of Earth Observation Imagery, Advanced Modelling Algorithms and Other Monitoring Systems to Produce Operational Agricultural AnnualCropInventories for Morocco</b><br><i>Maryam Choukri, Ahmed Laamrani</i>   |  |  |  |  | R  |
| 12:00                           | <b>Lunch</b>   |  |  |  |  |    |
| 13:15                           | <b>Keynote Presentations 3</b><br><b>The International Society of Precision Agriculture (ISPA)</b><br><i>John Fulton - Ohio State University</i>   |  |  |  |  | LV |
| 13:45                           | <b>Panel 1 – Precision Ag Education</b><br><b>Precision Ag Education Panel</b><br><i>John Fulton - Ohio State University</i><br><i>Jose Paulo Molin - University of Sao Paulo</i><br><i>Kwame Agyei Frimpong - University of Cape Coast</i><br><i>Avioz Dagan - Israel Institute of Technology</i> |  |  |  |  | LV |
| 14:30                           | <b>Break/Posters/Exhibits</b>  |  |  |  |  |    |



# Program - Day 1

## Day 1 – Wednesday, 7th December

|       |   |   |
|-------|---|---|
|       | <b>Plenary Session 1 – Precision Nutrient Management</b>  |   |
| 15:00 | <b>Presentation by</b><br><i>Aniss Bouraqqadi - OCP Africa</i>  | R |
| 15:20 | <b>4Rs As an Entry Point for Precision Agriculture in Smallholder Farming Systems of Africa</b><br><i>Samuel Njoroge - APNI</i>   | R |
| 15:40 | <b>Driving Up Large-Scale Irrigated Wheat Yields Through Variable Rate P &amp; K Fertilizer Recommendations in Zambia</b><br><i>Jacopo Parigiani - Crop Nutrition Laboratories Ltd (Cropnuts)</i> | R |
| 16:00 | <b>Predicting of Canopy Nitrogen Content Based on Uavs and Satellites Data Fusion in Citrus Orchards</b><br><i>Avioz Dagan - Israel Institute of Technology</i>                                   | R |
| 16:20 | <b>Virtual Agronomist - Getting Soil Information and Agronomic Advice into Farmers' Hands</b><br><i>Keith Shephard - iSDA</i>   | R |
| 16:40 | <b>Adjourn</b>  |   |

# Program - Day 2

| Day 2 – Thursday, 8th December |  |    |
|--------------------------------|--|----|
| 08:00                          | <b>Welcome Messages</b>  | LS |
| 08:05                          | <b>ISPA – John Fulton, President</b>   | R  |
| 08:15                          | <b>Keynote Presentations 4 – Remote Sensing Applications</b><br><b>Remote Sensing: from Plot Towards Landscape Scales</b><br><i>Francelino Rodrigues - Lincoln Agritech Ltd</i>  | LV |
|                                | <b>Plenary Session 3 – Remote Sensing Applications</b>   |    |
| 08:45                          | <b>How 20 Years of Precision Agriculture Experience Can Benefit Small Landholders</b><br><i>Robert Blair - Blair Farms</i>   | R  |
| 09:05                          | <b>Farmers' Perception and Willingness to Adopt Drone Technology in Agriculture</b><br><i>Femi Adekoya - Integrated Aerial Precision Ltd</i>   | R  |
| 09:25                          | <b>From Drone to Satellite – Does It Work?</b><br><i>Mats Söderström - Swedish University of Agricultural Sciences</i>   | R  |
| 09:45                          | <b>Agricultural Data Market to Empower African Farmers</b><br><i>Faissal Sehbaoui - Mohammed VI Polytechnic University</i>   | R  |
| 10:00                          | <b>Break/Posters/Exhibits</b>  |    |
|                                | <b>Local Session 2</b>   |    |
| 10:30                          | <b>Implementing Field-Based High Throughput Plant Phenotyping: the Open-Source Way</b><br><i>Baba Yussif Kassim</i>  | LS |
| 10:50                          | <b>A Multi-Scale Evaluation of Precision Weed Control Strategies in Corn Fields with Drone Technology</b><br><i>Jose M. Peña</i>   | R  |
| 11:10                          | <b>Evolving Potentials for Precision Climate-Smart Agriculture in Sub-Saharan African Countries</b><br><i>Maria G Ogunnaike</i>  | R  |
| 11:25                          | <b>Irrigation Regime and Mulching Effect on Fruit Yield and Water Stress Index of Tomato Varieties in the Guinea Savannah Agroecology of Ghana</b><br><i>Ramson Adombila</i>   | LS |
| 11:45                          | <b>Lunch</b>   |    |
| 13:00                          | <b>Keynote Presentations 5 – On-farm Experimentation</b><br><b>Global Renewal and Future of On-farm Experimentation</b><br><i>Myrtille Lacoste - Curtin University</i>   | LV |
| 13:30                          | <b>Panel 2 – On-farm Experimentation</b><br><b>On-Farm Experimentation Panel</b><br><i>Louis Longchamps - Cornell University</i><br><i>Ivan Adolwa - African Plant Nutrition Institute</i><br><i>James Taylor - French National Institute for Agriculture, Food, and Environment (INRAE)</i><br><i>Davis Gathumbi - Producers Direct</i> | LV |
| 14:30                          | <b>Break/Posters/Exhibits</b>  |    |

# Program - Day 2

## Day 2 – Thursday, 8th December

|       |   |   |
|-------|---|---|
|       | <b>Plenary Session 2 – Farmer Engagement Innovations</b>  |   |
| 15:00 | <b>Decentralized Research: An Opportunity to Accelerate the Transition Towards Sustainable Food Production</b><br><i>Louis Longchamps - Cornell University</i>                              | R |
| 15:20 | <b>TBC</b>  | R |
| 15:40 | <b>Improving Lime and Fertiliser Recommendations for Smallholders Using Co-Variate Zoning and Low Cost Mir Soil Testing Technology</b><br><i>Thomas Terhovens Urselmann - Cropnuts Ltd.</i> | R |
| 16:00 | <b>Presentation by</b><br><i>Nawfel Roudies – UM6P / Al Moutmir</i>   | R |
| 16:20 | <b>Presentation by</b><br><i>Claire Rhodes – Producer's Direct</i>  | R |
| 16:40 | <b>Adjourn</b>  |   |



# Program - Day 3

| Day 3 – Friday, 9th December |   |    |
|------------------------------|---|----|
| 08:10                        | <b>Welcome Message</b>  | LS |
| 08:15                        | <b>UM6P - Hicham El Habti, President</b>  | R  |
| 08:30                        | <b>Panel 3 – Building Soil Health with Precision Agriculture</b><br><b>Building Soil Health with Precision Agriculture Panel</b><br><i>John Wendt - IFDC</i><br><i>Lilian Mbutia - IPI/ICL - Fertilizers</i><br><i>Job Kihara - CIAT</i><br><i>Leigh Winowiecki - ICRAF</i> | LV |
| 09:30                        | <b>Keynote Presentation 7 – Precision Agriculture in Africa</b><br><b>Precision Agriculture in Africa; the Youth Are Ready</b><br><i>Femi Adekoya - Integrated Aerial Precision Ltd</i>   | LV |
| 10:00                        | <b>Closing Session and Awards</b>   | LV |
| 10:30                        | <b>Break/Posters/Exhibits</b>   |    |
| 11:00                        | <b>Keynote Presentation 6 – Climate-Resilient Agriculture</b><br><b>The Role of Smart-Advisory Services in Climate-Resilient Agriculture</b><br><i>Brenda Ortiz - Auburn University</i>   | LV |
| 11:30                        | <b>Plenary Session 4 – Climate and Weather Smart Ag</b><br><b>Presentation by</b><br><i>M.L. Jat International Maize and Wheat Improvement Center (CIMMYT)</i>  | R  |
| 11:50                        | <b>Decision-Making Tools in Soil Management and Plant Nutrition On-Farm Research and Observation Plot: Between Reality and Challenges</b><br><i>Mouna Mechri - National Institute of Field Crops (INGC)</i>   | R  |
| 12:10                        | <b>Precision Farming and Automation in Africa: Challenges and Opportunities</b><br><i>Rachid Serraj - Mohamed VI Polytechnic University</i>   | R  |
| 12:30                        | <b>Water Application Efficiency of an Ultisol in Response to Climate Change in Two Agroecological Zones of Nigeria</b><br><i>Iyiola Egbebi - Ekiti State Polytechnic Isan-Ekiti Nigeria</i>   | R  |
| 12:45                        | <b>GNSS and SBAS Technologies for Precision Agriculture in Africa</b><br><i>Agnes Kobusinge - SatNav Africa Joint Programme Office (JPO)</i>  | R  |
| 13:00                        | <b>Adjourn</b>  |    |



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