





# What is aflatoxin and why should I care?

Aflatoxin is a poison that contaminates crops as they grow, and persists after harvest, wending its way into our bodies through the food we eat, including animal products from livestock that have eaten aflatoxin-contaminated feed. Aflatoxin poisoning can start before birth through mother-to-baby transmission.

Young children continue to ingest aflatoxin through bottle and breast milk, and weaning on maize-or groundnut-based diets. Aflatoxin is unforgiving and cumulative, piling up in our bodies as we continue to eat and drink contaminated foods. So dire is the problem that in some countries, studies show nearly all (more than 95%) of the children under five have aflatoxin in their body, indicating high aflatoxin exposure even at this early age. Therefore we should all care about aflatoxin because whether we are food manufacturers, buyers, sellers or processors, ultimately, we are all food consumers. Trade losses from aflatoxin are immense, often occurring postharvest when all expenses including transport have already been incurred.

## Facilitator: David Githanga

(Paedetrician/Cardiologist and former Chairperson, Paediatrics Association of Kenya, and President of the Rotary Club, Nairobi)

Time	Activity	Responsible
10.20 am	Registration	Susan Karonga / Linda Wangila
	Streaming of video: Aflatoxin management in groundnuts produced by Agro-Insight for the McKnight Foundation	Edwin Nyabiba
11.00am	Introduction: Purpose of the symposium, speaker introduction and summary of symposium's format	David Githanga
11.15am	Opening remarks	Ranajit Bandyopadhyay, Africa Lead, Aflasafe Initiatve and Senior Plant Pathologist, IITA
Session I	Presentation	
11.25am	Impacts and mitigation of aflatoxins on agriculture, trade and health	Elizabeth Ogutu, Strategy and Operations Senior officer, AfricanUnion-Partnership for Aflatoxin Control in Africa (AU-PACA)
Session II	Technologies, policies and institutions for aflatoxin mitigation	
11.40am	Interventions for combating aflatoxin health risks	George Mahuku, Plant Pathologist, IITA
11.55am	Markets and potential challenges in uptake of interventions for aflatoxin mitigation in the African context	Vivian Hoffman, Research Fellow, IFPRI
12.10pm	Capacity building and awareness raising campaigns for aflatoxin mitigation.	Stanley Kimereh, Program Associate, FAO-Kenya

Time	Activity	Responsible	
Session III	Scaling up and public/private sector experiences		
12.25pm	Scaling-up of grain drying and storage technologies	Sophie Walker, Chief of Party, ACDI-VOCA	
12.40pm	Business perspectives for managing aflatoxins in food systems	JB Cordaro, Special Representative, Mars Incorporated	
12.55pm	Experiences of an implementer: a learning tool for upscaling aflatoxin interventions	Asenuga Idowu, CEO, Agribusiness Supplies Limited, Nigeria	
13.05pm	Experiences in the adoption process of aflasafe and other aflatoxin mitigation tools for use in the irrigation scheme	Raphael Wanjogu, Chief Research Officer, National Irrigation Board, Kenya	
13.15pm	Panel discussion and brown bag lunch		
	Moderator: Gerald Makau Masila	Executive Director, Eastern Africa Grain Council (EAGC)	
	Lessons learnt from the past and building consensus on next steps in further reducing aflatoxin contamination and its effects		
	Panelists		
	Chebii Kilel	Head of Food Crops Directorate, Agriculture, Fisheries and Food Authority (AFFA)	
	Martha Byanyima	Lead Expert, Sanitary and Phytosanitary Matters, COMESA	
	David Githanga	Pediatrician and Cardiologist and President of the Rotary Club, Nairobi	
	Kevin Manyara	Operations Manager, Cargill	
	Delia Grace	Flagship Leader for Food Safety, A4NH CGIAR and ILRI	





## Mr. Idowu Asenuga

CEO, Agri Supplies Limited

He is a seasoned entrepreneur with a successful track record in wide range of industries. He has successfully brought several businesses from grass to grace through strategic application of his management skill.

His contribution to the agricultural sector (poultry and crop production) in

Nigeria is quite overwhelming. Mr Asenuga, who is a certified Project Management Professional, holds a Masters degree in Business Administration from Olabisi Onabanjo University, Ago Iwoye, Ogun state and a Bachelor's degree in Electrical and Electronics Engineering from University of Benin, Edo State.

He has worked on the design, construction, and installation of automated chicken cages for several poultry projects making him a key player in the Nigerian poultry industry. Idowu Asenuga is an advocate of livestock/grain value chain integration and this has lead him to his involvement in the International Institute of Tropical Agriculture's (IITA) AgResult project where he currently works with over 200 local farmers for the production of Aflatoxin free maize for the Poultry farmers.

He belongs to several international societies such as Project Management Institute, USA, Irrigation Association, USA and also serves on the board of several other companies in various management and consultancy capacities namely, ERIKU FARMS, VALUECORP, BOKE SAFETY SOLUTIONS, TORY LEE and EPIQCORP Nigeria Ltd. Presently, he sits atop the Association of Family Business Owners of Nigeria as National President and equally functions as the Public Relations Executive of the Poultry Association of Nigeria (PAN) Ogun State and the Managing director of Agri Supplies Ltd.



# Dr. Ranajit Bandyopandhyay

Principal Plant Pathologist, International Institute of Tropical Agriculture (IITA)

Ranajit is a principal plant pathologist at the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria where he has been guiding research and development activities related to crop diseases and mycotoxins since 2002.

He completed his PhD from Haryana Agricultural University, Hisar and joined the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in 1980. He has 36 years of research and development experience in Asia, Africa and the Americas. His research on mycotoxins focuses on surveillance, bio-ecology of toxigenic fungi, integrated management of mycotoxins and policy and institutional issues. Ranajit leads initiatives on research, tech transfer, commercialization and scaling-up of the aflatoxin biocontrol technology Aflasafe in 11 African nations. He has authored nearly 175 publications and serves on the editorial board of two International journals.

Ranajit is a Steering Committee member of the African Union based Partnership for Aflatoxin Control in Africa (PACA) and Chairs its Technical Sub-Committee. He was jointly named as 'Change Agent for Research and Technology' by PACA in 2016. IITA recognized Ranajit with the Outstanding Scientist Award in 2010, Outstanding Team Award in 2012, and Outstanding Paper Award in 2015.



## Ms. Martha Byanyima

Lead Expert/ Coordinator, Sanitary and Phytosanitary (SPS) Programme COMESA Secretariat

Ms Martha Byanyima is a Food Technologist, with over 25 years work experience in the field of food safety and industry development.

She has worked on policy/regulatory issues as well as on food safety management systems in a wide range of food sectors in East and Southern Africa. At regional level, she works with the Common Market for East and Southern Africa as the lead expert on sanitary and sanitary matters, bringing my expertise on food safety and SPS matters in general into the COMESA economic integration agenda. Her role is to ensure the SPS regulatory systems are harmonized to facilitate intra COMESA trade whilst ensuring the protection of human, plant and animal health.



### Ms. Chebii Kilel Chepkwony

Head of Food Directorate, Agriculture and Food Authority Kenya

Ms Chebii Kilel Chepkwony has worked in the Ministry of Agriculture, Livestock and Fisheries – Kenya for over 20 years, in various capacities and regions rising to the current position of Head of Food Crops Directorate (AFA).

She holds a Diploma in Postharvest and Food Preservation, Katholike University,

Leuven, M.A. Urban and Regional Planning and Bsc. Agriculture, University of Nairobi. She has been involved in community and stakeholder mobilization, participatory planning, monitory and evaluation of extension programmes. She has participate d in the institutional reforms in the agriculture sector, the devolution process of agriculture and policy formulation of crop commodities.

She is currently, the lead person in the operationalization of the Food Crops Directorate that coordinates the activities of the food crops value chain by promoting, developing and regulating the subsector for food and nutritional security. Under her stewardship, the directorate has developed standards and regulations to guide the subsector, which had not been regulated before so as to ensure food safety for good health and proper trading.



#### Mr. JB Cordaro

Special Representative for Mars, Incorporated

JB Cordaro is Special Representative for Mars, Incorporated focused on Global Food Security.

He seeks to increase awareness of the linkages among key elements of food security, especially production, nutrition and safety;

building partnerships; and assembling and nurturing a stakeholder network to shape appropriate policies. JB is Mars' liaison with the UN Rome Based Agencies and Member State Representatives; the Private Sector Mechanism of the UN CFS; and helps create and manage Mars food safety partnerships.

JB has over five decades International food experiences working in more than 40 countries, including senior technical and management positions with the Agency for International Development (USAID).

Senior staff to Senator Hubert H. Humphrey and the Food Program Manager for the U.S. Congress Office of Technology Assessment (OTA); Executive Director, the Food Safety Council, Inc.; and President and CEO, the Council for Responsible Nutrition (CRN), also serving as the Trans-Atlantic Business Development (TABD) Manager for Food and Supplementation.

JB Cordaro was a Congressional Staff delegate to the 1974 World Food Conference. Subsequently he has participated in global food and nutrition conferences and summits including the ICN2 and the UN Third Financing for Development (FfD3). He regularly participates in the UN CFS through several OEWGs and the PSM. He plans and manages technical and scientific policy related side-events; presents papers; and serves as an advisor for the publication of books and reports, with an emphasis on the need and value of inclusive roles for business in the global food security arena.



## Dr. David Githanga

Paediatrician and Cardiologist

Dr. David Githanga is an accomplished medical professional with over 25 years experience of clinical practice at a number of health institutions of great repute such as the Nairobi Hospital, Kenyatta National Hospital, Aga Khan University Hospital and Gertrude's Children's Hospital.

He graduated in 1984 at The University of Nairobi in Kenya. In subsequent years he has attained a number of medical qualifications from various global institutions including studies in Paediatric Cardiology in Glasgow, Children's Environmental Health in Athens Greece and a Master of Science in Public Health from the University of London.He has just completed collecting field data for a PhD research work at the University of Nairobi seeking to explore the relationship between aflatoxin, immunity, vaccine sero-conversion and children's health in rural Kenyan children.

Throughouthis career Dr Githangahas demonstrated a passion for the improvement of children's health particularly pertaining to immunization, nutrition and the environment within the broader public health agenda. He has had high level interaction both nationally and Internationally aimed at gearing policies towards pediatric health improvement including mentoring on training, designing reference materials, delivery approaches and research topics.

Currently, he is the President of 86 year old Rotary Club of Nairobi and the immediate past Chairman of the Kenya Paediatric Association. Dr Githanga is a governor of the Board of Directors of the Thomas Barnados Children's Home, an Honorary Lecturer of Paediatrics at the University of Nairobi and a Consultant Paediatrician/Cardiologist at the Nairobi Hospital. He is on a number of committees appointed by the Ministry of Health in Kenya.



#### Dr. Delia Grace

Flagship Leader for Food safety, A4NH CGIAR and ILRI

Dr. Delia Grace is an epidemiologist and veterinarian with more than 20 years experience in developing countries. She graduated from several leading universities and currently leads research on zoonoses and foodborne disease at the International

Livestock Research Institute based in Nairobi, Kenya. Her research interests include food safety, emerging diseases, gender studies, and animal welfare. Her career has spanned the private sector, field-level community development and aid management, as well as research.

She has lived and worked in Asia, west and east Africa and authored or coauthored more than 100 peer-reviewed publications as well as training courses, briefs, films, articles and blog posts. In 2017, she was in the top five of women scientists in Kenya, in terms of citations. Her research program focuses on the design and promotion of risk-based approaches to food safety in livestock products in sub-Saharan Africa and South Asia. She is also a key player on ILRI's Ecohealth/ One health approach to the control of zoonotic emerging infectious diseases and agriculture-associated antimicrobial resistance.



### Dr. Vivian Hoffmann

Research Fellow, International Food Policy Research Institute

Vivian Hoffmann is a Research Fellow at the International Food Policy Research Institute, where much of her research deals with the economics of food and water safety.

Hoffmann holds a PhD in Agricultural Economics from Cornell University and was previously on faculty at the University of

Maryland, College Park. She has published widely in the economics, plant pathology, and public health literature.

Ongoing research includes randomized controlled trials investigating the impact of aflatoxin exposure on child growth, testing the impact of price incentives and subsidies on aflatoxin control practices among Kenyan and Ghanaian farmers, and characterizing Kenyan consumers' responses to third party labeling and marketing for aflatoxin safety.



### Mr. Stanley Kimereh

Programme Associate, Food and Agriculture Organisation (FAO)

Mr Stanley Kimereh is a Programme Associate at the Food and Agriculture Organization of the United Nations (FAO) office in Kenya responsible for coordinating the aflatoxin control programme being implemented by the Government of Kenya through the Ministries of Agriculture and Health in collaboration with FAO.

Mr Kimereh has a been working very closely with the National Food Safety Coordinating Committee (NFSCC) at the national level together with a number of counties involved in the ongoing programme.

He has been leading capacity building in aflatoxin contamination reduction in 14 counties together with awareness and sensitization campaigns in the country.

Mr Kimereh holds a Master of Science degree in Environment and Sustainable Development form the University of Glasgow and Bachelor of Science degree in Horticulture from Jomo Kenyatta University. Prior to joining FAO in 2008, Mr Kimereh had worked extensively with the public and private sector players in Kenya, Uganda and the Gambia in the horticulture sub-sector.



### Dr. George Mahuku

Senior Plant Pathologist, nternational Institute of Tropical Agriculture (IITA)

Dr. George Mahuku, PhD, Senior Plant Pathologist, IITA has over 20 years of research and development experience, 18 of which have been spent working for the CGIAR, mostly in Latin America and Africa.

Before joining IITA, he worked with International Maize and Wheat Improvement Center [CIMMYT] (2007-2014) and the International Center for Tropical Agriculture [CIAT] (1998-2006).

His research focuses on developing management strategies for critical diseases in root, tuber and banana, cereal and legume cropping systems in Africa, monitoring for new and emerging disease threats to agricultural productivity and implementing pre-emptive disease management measures.

George's research on mycotoxins focuses on understanding prevalence of aflatoxin and fumonisin in staples crops, developing host resistance to mycotoxin-producing fungi, and developing and implementing an integrated strategy for managing mycotoxins through a value chain approach. Currently, George is leading the development of "Aflasafe" an aflatoxin biological control product for Tanzania. He has authored over 60 publications.



#### Mr. Gerald Makau Masila

Executive Director, Eastern Africa Grain Council. (EAGC)

Gerald Masila is an experienced and accomplished professional in the field of Agribusiness management, having worked with a range of agribusiness related organizations for over 20 years.

At EAGC - a regional organization for the grain value chain stakeholders including grain

farmers/producers, traders, processors/millers and other affiliated and associated organizations - Gerald has led the growth of the Council, establishing country offices in Uganda, Tanzania, Rwanda, Burundi, South Sudan and Malawi.

The Council has also established specialized divisions, including the Eastern Africa Grain Institute (EAGI), the Agricultural Trade Policy Advisory Forum for Eastern and Southern Africa ATPAF-ESA, and the relaunch of the EAGC Market Information System Regional Agricultural Trade Intelligence Network (RATIN).

The latest addition to the portfolio is EAGC G-Soko, the online grain trading platform launched in June 2015. Some of the recent achievements of EAGC under Gerald's leadership include: the harmonization of the East Africa Community (EAC) staple foods standards-2013; development and implementation of the Warehouse Receipt Systems; harmonization of grain trade policy in the Eastern Africa region; and addressing tariff and non-tariff barriers to trade, leading to increased cross-border trade in staple food grains, including maize, cereals and pulses.

Gerald holds an MSc in Agricultural Economic, from Egerton University, and is currently pursuing his PhD Studies in Project Planning & Management, Project Finance option at the University of Nairobi. He has been EAGC's Executive Director since 2011.



### Mr. Kevin Manyara

Plant Operations Manager, Cargill Kenya

Kevin is the Plant Operations Manager for Cargill Kenya Limited, an International that company provides food, agriculture, financial and industrial products and services to the world. Kevin previously worked for Lesiolo Grain Handlers Limited on various roles from quality assurance to administration.

Hehasalsoconsultedforvariousorganizationsonpostharvest management of grains, grain quality and development of grainst and ards. Kevin has developed materials for different organizations, among them, the Technical Centre for Agricultural and Rural Cooperation (CTA) and Eastern Africa Grain Council (EAGC). Kevin is a graduate of Egerton University with a Bachelor of Science in Food Science and Technology.



### Ms. Liz Ogutu

Strategy and Operations Senior Officer, African Union-Partnership for Aflatoxin Control in Africa (AU-PACA)

Ms Liz Ogutu is the Strategy and Operations Senior officer, African Union-Partnership for Aflatoxin Control in Africa (AU-PACA). Liz spent 14 years working in the private sector.

In 2005 she joined the development community working for UNICEF and then moved to support

agricultural research at the International Livestock Research Institute (ILRI).

Before joining the African Union-PACA, she worked for the Australian Centre for International Agricultural Research (ACIAR) as the regional manager for Africa. She has spent the past 9 years supporting agricultural researchers in fundraising; establishing and maintaining strong partnerships with a broad range of stakeholders, maximising cooperation and promoting program objectives and strategic vision. She has experience in program management and advocating with development partners and brings to the PACA team a sound understanding of the agricultural challenges, priorities and research capacity in Sub Saharan Africa.

Liz holds a BSc Degree from the Open University (UK) and an MBA from the Heriot Watt University (UK).



### Dr. Raphael Wanjogu

Chief Research Officer, National Irrigation Board

Dr. Raphael Wanjogu is Chief Research Officer, National Irrigation Board. He is a crop and soil scientist from University of Nairobi and Egerton University.

Dr Wanjogu has extensive experience in research, agriculture and irrigation. His practical experience in research and

utilization of Aflazafe KE01.

He is highly experienced in crop production, training and extension services combined with multi-management, organizational, analytical and problem solving skills. He provides advisory services for crop, soil and irrigation water management as well as monitoring and evaluation of programs in national irrigation farms. He has performed various jobs that include management of research institutions, rice irrigation scheme, demonstration farm, seed farm and guest houses. He is also an expert in rice and maize research and production and a consultant in irrigated and conservation agriculture.



# Mr. Sophie Walker

Chief of Party for ACDI/VOCA and ASI on the BMGF and USAID-funded AflaSTOP program

Sophie Walker is a skilled manager, agribusiness market systems specialist, and research facilitator with over 16 years of experience in private sector agricultural investment, grain trade and logistics, and commodity management, particularly

within Kenya.

She is currently the Chief of Party for ACDI/VOCA and ASI on the BMGF and USAID-funded AflaSTOP program, focused on developing new technologies to help prevent the spread of aflatoxin. The project has specifically proved hermetic storage will arrest aflatoxin development and introduced a new mobile drying technology – the EasyDryM500.

Prior to designing and launching AflaSTOP, she was a senior grain markets advisor on the USAID-funded Market Linkage Initiative project, which resulted in over \$9 million in investments in staple grain bulking systems in East Africa. She helped establish the Eastern Africa Grain Council (EAGC), where she developed best practices in arbitration and trade tailored for East Africa.





