



IWGO

International Working
Group on *Ostrinia* and
other maize pests

28th IWGO Conference

2nd to 4th of May 2023

KEPHIS Conference Centre

Nairobi, Kenya

The International Working Group on *Ostrinia* and other Maize
Pests (IWGO)
is a Working Group of the International Organization of
Biological Control – Global (IOBC - Global)

IWGO IOBC-GLOBAL CONVENORS

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SCIENTIFIC SESSION ORGANIZERS

Silvana Paula-Moraes, University of Florida, Milton, Florida, U.S.A.
Johnnie van den Berg, North-West University, Potchefstroom, South Africa
Craig A. Abel, USDA-ARS, Ames, IA, U.S.A.
Prasanna Boddupalli, CYMMIT, Nairobi, Kenya
Tom Sappington, USDA-ARS, Ames, IA, U.S.A.
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Brad Coates, USDA-ARS, Ames, IA, U.S.A.
Marce Lorenzen, North Carolina State University, Raleigh, NC, U.S.A.
Art Schaafsma, University of Guelph, Ridgetown, ON, Canada
Gary Munkvold, Iowa State University, Ames, IA, U.S.A.
Marc Kenis, CABI, Delémont, Switzerland
Samira Mohamed, icipe, Nairobi, Kenya

LOCAL ORGANIZATION

Lilian Kiarie & Ivan Rwomushana, CABI, Nairobi, Kenya
Kenya Plant Health Inspectorate Service (KEPHIS), Nairobi, Kenya

IWGO-IOBC PROGRAMME BOOKLET

Gitta Grosskopf-Lachat, CABI, Delémont, Switzerland

CONFERENCE ORGANIZER

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SCIENTIFIC PROGRAMME*

28th IWGO Conference

*Please note that only the name of the presenting author is provided in the IOBC Global IWGO scientific programme

SCIENTIFIC PROGRAMME

Monday, 1 May 2023

17:00 Registration, Lobby, Hotel Tamarind

- Provision of PowerPoint Oral Presentations on USB stick

19:00 Welcome Reception, Hotel Tamarind

- Welcome Remarks, Ulli Kuhlmann, IWGO-IOBC-Global Convenor

Tuesday, 2 May 2023

07:45 Registration & Drop-off Point Posters, KEPHIS Conference Centre

09:00 Welcome Addresses – KEPHIS Conference Centre

- Welcome Address, KEPHIS
- Welcome Address, Vice-President IOBC Afrotropical Regional Section

09:20 Scientific Session 1

Scientific Session 1: Maize lepidopteran pests and mycotoxins

Session Organizers: Art Schaafsma, University of Guelph, Ridgetown, ON, Canada & Gary Munkvold, Iowa State University, Ames, IA, USA

09:20	Art Schaafsma	Introduction – Mycotoxins and human health
09:30	Jocelyn Smith	Ear feeding maize pests and mycotoxins in the Great Lakes region of North America
09:50	Gary Munkvold	Contributions of transgenic insect protection to managing mycotoxins in maize
10:10	Nancy Njeru	Impact of push-pull cropping system on pest management and occurrence of ear rots and mycotoxin contamination of maize in western Kenya
10:30	Yasmine Farhan	The influence of <i>Striacosta albicosta</i> (Smith) management on mycotoxin accumulation in grain corn, <i>Zea mays</i> L.

10:50 Coffee/Tea Break & Posters

11:20 Scientific Session 2

Scientific Session 2: New developments in the biological control of fall armyworm

Session Organizers: Marc Kenis, CABI, Delémont, Switzerland & Samira Mohamed, International Centre of Insect Physiology and Ecology – icipe, Nairobi, Kenya

11:20	Marc Kenis & Samira Mohamed	Introduction
11:30	Michael Hilary Otim	Effect of biopesticides on the abundance and diversity of <i>Spodoptera frugiperda</i> (J. E. Smith) natural enemies
11:50	Lakpo Koku Agboyi	Assessment of the effectiveness of some commercial biopesticides against fall armyworm in northern Ghana and their effects on larval parasitism rates
12:10	Diana Kemunto	Potential of rabbit urine in managing fall armyworm (<i>Spodoptera frugiperda</i> J.E. Smith)
12:30	Patrick Fallet	A gel formulation of entomopathogenic nematodes to control caterpillars of the fall armyworm, <i>Spodoptera frugiperda</i> : an effective, safe and sustainable alternative to chemical insecticides
12:50	Bancy Waithira Waweru	Field efficacy of entomopathogenic nematodes in controlling fall armyworm in comparison to local pest management practices

13:10 Lunch Break

14:10 Scientific Session 2 (continued)

Scientific Session 2: New developments in the biological control of fall armyworm (continued)

Session Organizers: Marc Kenis, CABI, Delémont, Switzerland & Samira Mohamed, International Centre of Insect Physiology and Ecology – icipe, Nairobi, Kenya

14:10	Samira Mohamed	No enemy free space: The case of alien invasive <i>Spodoptera frugiperda</i> in African ecologies
14:30	Marc Kenis	High parasitism on fall armyworm in Africa and Asia. Where do all these parasitoids come from?
14:50	Francis Obala	Effectiveness of generalist native parasitoid, <i>Cotesia icipe</i> against <i>Spodoptera frugiperda</i> and other key pests in maize agroecosystem
15:10	Patrick Beseh	Biology and host age preference of <i>Coccygidium luteum</i> (Hymenoptera: Braconidae): a larval parasitoid of the fall armyworm (<i>Spodoptera frugiperda</i>)
15:30	Dirk Babendreier	Augmentative biological control of fall armyworm: how can we make it work?

15:50 Coffee/Tea Break

16:20 Scientific Session 3

Scientific Session 3: Free themes

Session Organizers: Tom Sappington, USDA-ARS, Ames, IA, USA & Ulli Kuhlmann, CABI, Delémont, Switzerland

16:20	Tom Sappington & Ulli Kuhlmann	Introduction
16.30	Helena Viric Gasparic	Pesticide residues and ground beetle communities in intensive maize production
16:50	Ricardo Ramirez & Mercy Odemba	Using host plant resistance and drought-tolerance in maize to respond to a dual threat of water-stress and spider mite herbivory
17:10	Mercy Odemba	Weed host interactions with spider mites in Intermountain West corn production
17.30	Sri Ita Tarigan	Microbial biostimulants registered for maize with potential side-effects on its insect pests: A review
17:50	Dominic Reisig	An overview of stink bugs (<i>Euschistus servus</i> and <i>Nezara viridula</i>) as pests of southern US corn

18:10 End of Day 1

19:00 Individual Dinner Arrangements

Wednesday, 3 May 2023

09:00 Scientific Session 4

Scientific Session 4: Challenges and opportunities for IPM/IRM in a scenario of biological invasions of polyphagous lepidopteran pests

Session Organizers: Silvana Vieira de Paula Moraes, University of Florida, Milton, USA & Johnnie van den Berg, North-West University, Potchefstroom, South Africa

09:00	Silvana Vieira de Paula Moraes & Johnnie van den Berg	Introduction
09:10	Casper Nyamukondiwa	Geographic dispersion of invasive crop pests: the role of basal, plastic climate stress tolerance and other complimentary traits in the tropics
09:30	Subba Reddy Palli	Development of functional genomics tools to study mechanisms of insecticide resistance in the fall armyworm
09:50	Francis Reay-Jones	Managing fall armyworm with transgenic <i>Bt</i> maize in the southeastern United States
10:10	Eliseu Pereira	Managing <i>Bt</i> resistance in the fall armyworm: can we better exploit the evolutionary trade-offs of multi-toxin adaptation in IPM programs?
10:30	Emily Bick	Listening to insects: using microphones and deep learning algorithms to monitor corn pests

10:50 Coffee/Tea Break

11:20 Scientific Session 4 (continued)

Scientific Session 4: Challenges and opportunities for IPM/IRM in a scenario of biological invasions of polyphagous lepidopteran pests (continued)

Session Organizers: Silvana Vieira de Paula Moraes, University of Florida, Milton, USA & Johnnie van den Berg, North-West University, Potchefstroom, South Africa

11:20	Katelyn Kesheimer	Extension as an IPM tool: The Land Grant University program and its role in pest management
11:40	Amanda Hodges	Preparing the new generation of the workforce for the challenges of invasion biology in plant protection

12:00 Scientific Session 5

Scientific Session 5: Host plant resistance to achieve more effective and sustainable control of fall armyworm

Session Organizers: Craig A. Abel, USDA-ARS, Ames, IA, USA & Prasanna Boddupalli, International Maize and Wheat Improvement Center, Nairobi, Kenya

12:00	Prasanna Boddupalli & Craig A. Abel	Introduction
12:10	Prasanna Boddupalli	Host plant resistance to fall armyworm in the Tropics: status and prospects
12:30	Craig Abel	Native resistance to leaf feeding fall armyworm discovered in maize population BS39 and partial inbred GEMN-0095

12:50 Lunch Break

14:00 Scientific Session 5 (continued)

Scientific Session 5: Host plant resistance to achieve more effective and sustainable control of fall armyworm (continued)

Session Organizer: Craig A. Abel, USDA-ARS, Ames, IA, USA & Prasanna Boddupalli, International Maize and Wheat Improvement Center, Nairobi, Kenya

14:00	Yoseph Beyene	Breeding for native genetic resistance to fall armyworm in Africa-adapted early- and intermediate-maturing tropical maize germplasm
14:20	Bruce Tabashnik	Managing fall armyworm in Africa: Can <i>Bt</i> maize sustainably improve control?

14:40 Scientific Session 6

Scientific Session 6: Genomics in current and future maize pest research

Session Organizer: Brad Coates, USDA-ARS, Ames, IA, USA & Marce Lorenzen, North Carolina State University, Raleigh, NC, USA

14:40	Brad Coates & Marce Lorenzen	Introduction
14:50	Marce Lorenzen	Development of genomic resources and tools for a hemipteran pest of maize
15:10	Tiantao Zhang	Genomics comparison of sibling species of <i>Conogethes punctiferalis</i> and <i>C. pinicolalis</i>

15:30 Coffee/Tea Break

16:00 Scientific Session 6 (continued)

Scientific Session 6: Genomics in current and future maize pest research (continued)

Session Organizers: Brad Coates, USDA-ARS, Ames, IA, USA & Marce Lorenzen, North Carolina State University, Raleigh, NC, USA

16:00	Emmanuelle Jacquin-Joly	Chemosensory receptors as targets for the identification and design of new behavioural disruptors for maize Lepidoptera pests
16:20	Kiwoong Nam	Evolutionary history of the fall armyworm invasion inferred by population genomics approach
16:40	Ahmed G. Hussain	Viruses of the fall armyworm <i>Spodoptera frugiperda</i> ; hidden gems for biological control
17:00	Brad Coates	Genomic responses of western corn rootworm to <i>Bacillus thuringiensis</i> pesticidal proteins
17:20	Juan Luis Jurat-Fuentes	Monitoring for resistance to <i>Bt</i> corn using targeted sequencing

17:40 End of Day 2

19:00 Individual Dinner Arrangements

Thursday, 4 May 2023

09:00 Scientific Session 7

Scientific Session 7: Integrated pest management approaches and solutions for fall armyworm

Session Organizers: Zhenying Wang, IPP-CAAS, Beijing, China; Amanuel Tamiru, International Centre of Insect Physiology and Ecology – icipe, Nairobi, Kenya & Feng Zhang, CABI, Beijing, China

09:00	Zhenying Wang, Amanuel Tamiru & Feng Zhang	Introduction
09:10	Emmanuel Peter	Crop diversification for fall armyworm management: elucidating pest-plant-natural enemy interactions
09:30	Léna Durocher-Granger	Effect of planting dates on fall armyworm infestation and its parasitoids
09:50	Daniel Mutyambai	Alteration of maize phytochemistry and fall armyworm (<i>Spodoptera frugiperda</i>) resistance by push-pull cropping soil legacies
10:10	Abdul A. Jalloh	Maize-legume intercropping soil legacies alter maize growth and fall armyworm (<i>Spodoptera frugiperda</i>) larval feeding

10:30 Coffee/Tea Break

11:00 Scientific Session 7 (continued)

Scientific Session 7: Integrated pest management approaches and solutions for fall armyworm (continued)

Session Organizers: Wang Zhenying, IPP-CAAS, Beijing, China; Amanuel Tamiru, International Centre of Insect Physiology and Ecology – icipe, Nairobi, Kenya & Feng Zhang, CABI, Beijing, China

11:00	Rhian Whelan	Preliminary studies on the use of <i>Metarhizium rileyi</i> for control of fall armyworm in Zambia.
11:20	Ivan Rwomushana	A novel approach to management of <i>Spodoptera frugiperda</i> J.E. Smith for small-holder farmers using virus extract from larvae treated with baculovirus under field conditions
11:40	Robert Meagher	Trapping fall armyworm: the use of pheromones, trap design and lures for fall armyworm control
12:00	Benjamin Mbatha	Fish soup attracts biodiversity of natural enemies of fall armyworm (<i>Spodoptera frugiperda</i> J.E Smith)
12:20	Qiulin Wu & Zhenying Wang	Migration patterns of the invasive fall armyworm <i>Spodoptera frugiperda</i> (J. E. Smith) in China

12:40 Lunch Break

13:40 Scientific Session 7 (continued)

Scientific Session 7: Integrated pest management approaches and solutions for fall armyworm (continued)

Session Organizers: Wang Zhenying, IPP-CAAS, Beijing, China; Amanuel Tamiru, International Centre of Insect Physiology and Ecology – icipe, Nairobi, Kenya & Feng Zhang, CABI, Beijing, China

13:40	Amanuel Tamiru	Exploiting agroecological approach for sustainable fall armyworm management in smallholder farming systems
14:00	Daibin Yang	Broadcasting of tiny granules by drone for the control of fall armyworm (<i>Spodoptera frugiperda</i>)
14:20	Jerry Asalma Nboyine & Lakpo Koku Agboyi	Assessment of the optimal frequency of insecticide sprays required to manage fall armyworm (<i>Spodoptera frugiperda</i> J.E Smith) in maize (<i>Zea mays</i> L.) in northern Ghana
14:40	John E. Kang'ati	Indigenous agroecological strategies for controlling fall armyworm (<i>Spodoptera frugiperda</i> J.E Smith) in Africa

15:00 Coffee/Tea Break

15:30	Zhenying Wang	Integrated management for the invasive fall armyworm in China
15:50	Feng Zhang	Attraction of <i>Spodoptera frugiperda</i> to a host plant volatile compound
16:10	Johnstone Mutua	Competitive plant-mediated and intraguild predation interactions of the invasive <i>Spodoptera frugiperda</i> and resident stemborers <i>Busseola fusca</i> and <i>Chilo partellus</i> in maize cropping systems in Kenya

16:30 IWGO Business Meeting

16:45 Poster Presentations & Refreshments

17:15 Visit to KEPHIS

17:45 End of Day 3

18:30 Farewell Dinner Restaurant (optional booking required)

Friday, 5 May 2023

06:00 *Excursion (optional booking required; description of excursion please refer to www.iwgo.org)*

06:00 Meeting in the lobby of the Hotel Tamarind

14:00 Arrival Hotel Tamarind

14:00 End Excursion

POSTER PRESENTATIONS

Poster 01	Brad Coates	The USDA-ARS Ag100Pest Initiative: Developing chromosome-level genome assemblies for corn pest insects
Poster 02	Emmanuelle Jacquin-Joly	Reverse chemical ecology leads to the identification of new agonists of insect odorant receptors
Poster 03	Andrea Rilakovic	Western bean cutworm (<i>Striacosta albicosta</i> Smith) chemical management in intensive corn production in North America
Poster 04	Kajuga Nsamira Joelle & Bancy Waithira Waweru	Minimum effective dosage of entomopathogenic nematodes at controlling fall armyworm and preventing damage under field conditions
Poster 05	Anani Bruce	Response of selected tropical maize genotypes under natural infestation by fall armyworm, <i>Spodoptera frugiperda</i> (J.E. Smith)
Poster 06	Dan Makumbi	Breeding for native genetic resistance to fall armyworm in late-maturing tropical maize germplasm
Poster 07	Zhenying Wang	Oviposition behavior and interspecific-competition between <i>Telenomus remus</i> (Hymenoptera: Platygasteridae) and <i>Trichogramma</i> spp. (Hymenoptera: Trichogrammatidae) on <i>Spodoptera frugiperda</i> (Lepidoptera: Noctuidae)
Poster 08	Hannalene du Plessis	Susceptibility of fall armyworm to insecticides in South Africa
Poster 09	Thomas W. Sappington	Western corn rootworm: a partial migratory species consisting of 'resident' and 'migrant' behavioral phenotypes
Poster 10	Stefan Toepfer	Engineering bacterial symbionts of entomopathogenic nematodes to enhance their biological potential against the western corn rootworm
Poster 11	Stefan Toepfer	Application techniques for entomopathogenic nematodes against below- and above-ground maize pests
Poster 12	Sri Ita Tarigan	Evaluating dose-responses of commercial insecticides against <i>Diabrotica v. virgifera</i> (Coleoptera: Chrysomelidae) for selecting proper positive controls in laboratory bioassays
Poster 13	Frank Chidawanyika	Biogeography of cereal stemborers and their natural enemies: forecasting pest management efficacy