



IWGO

International Working
Group on *Ostrinia* and
other maize pests

24th IWGO Conference & 3rd International Conference of *Diabrotica* Genetics

24 to 26 October 2011
Freiburg, Germany

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)

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Prof. Mike GRAY, University of Illinois, Urbana, Illinois, U.S.A.
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Prof. C. Richard EDWARDS, Purdue University, W. Lafayette, Indiana, U.S.A.

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Dr. Michael GLAS, LTZ Augustenberg, Stuttgart, Germany
Dr. Reinhold ALBERT, LTZ Augustenberg, Stuttgart, Germany

CONFERENCE ORGANIZER

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SCIENTIFIC PROGRAMME

**24th IWGO Conference &
3rd International Conference
of *Diabrotica* Genetics**

SCIENTIFIC PROGRAMME

Sunday, 23 October 2011

17:00 Registration – Lobby Novotel Freiburg

- Provision of PowerPoint Oral Presentations on CD or USB Memory Stick

19:00 Welcome Reception and Buffet – Novotel Freiburg, Conference Level

- Welcome Address and Organizational Issues for the IWGO Conference, Ulli KUHLMANN, IWGO Convenor
- Welcome Address, Hansjörg IMGRABEN, Reinhard ALBERT, and Michael GLAS, IWGO Conference Local Organizers

Monday, 24 October 2011

07:45 Registration – Conference Location Regierungspräsidium Freiburg, Bissierstr. 7 (transfer from hotels to conference location by public transport)

08:30 Welcome Address

- C. Richard EDWARDS, IWGO Co-Convenor

08:40 Opening Address

- Klemens FICHT, Vice-President, Regierungspäsidium Freiburg

09:00 Scientific Session 1

Session 1: Does *Diabrotica virgifera virgifera* control pay? On the economic benefits and costs of regulations and control measures

Session Organizer: Justus WESSELER, Chair Agricultural and Food Economics, Center of Life and Food Sciences Weihenstephan, Technical University Munich, Freising, Germany

09:00	J. Wesseler	Introduction
09:15	P. Mitchell	Costs and benefits of controlling pest <i>Diabrotica</i> in maize in the United States
09:35	H. Kehlenbeck & S. Krügener	Costs and benefits of plant health measures against <i>Diabrotica</i> : experiences and estimations for Germany
09:55	K. Köhler & R. Schätzl	The corn rootworm in Bavaria – local relevance and the economic impact on single farms
10:15	M. Délos & B. Huguet	Monitoring and current spread of <i>Diabrotica</i> in France: an increasing economic problem

10:35 Coffee/Tea Break & Posters

11:05 Scientific Session 2

11:05 Scientific Session 2

Session 2: Emerging concerns for western corn rootworm resistance development to *Bt* in the Corn Belt of the U.S.A

Session Organizers: Mike GRAY, Department of Crop Sciences, University of Illinois, Urbana, Illinois, U.S.A. & Joe SPENCER, Illinois Natural History Service, University of Illinois, Champaign, Illinois, U.S.A.

11:05	M. Gray & J. Spencer	Introduction
11:10	A. Gassmann, J. Petzold-Maxwell, R. Keweshan & M. Dunbar	Response of western corn rootworm to planting of <i>Bt</i> maize in Iowa, U.S.A.
11:30	B. Hibbard	Resistance of western corn rootworm from laboratory selection to multiple types of transgenic <i>Bt</i> corn
11:50	J. Spencer & S. Hughson	Western corn rootworm behavior and movement in refuge and transgenic corn
12:10	M. Gray	Producer perspectives on <i>Bt</i> refuges: closer to greater compliance or resistance?
12:30	B. Siegfried, M. Rangasamy, H. Wang & H. Chen	Developing methods for RNA interference in western corn rootworms

12:50 Lunch Break

14:00 Scientific Session 3

Session 3: Exploring gene flow in *Diabrotica* across space, time, and species

Session Organizer: Tom SAPPINGTON, USDA-ARS, Ames, Iowa, U.S.A. & Thomas GUILLEMAUD, INRA, Sophia Antipolis, France & Blair SIEGFRIED, University of Nebraska, Lincoln, Nebraska, U.S.A.

14:00	T. Sappington, T. Guillemaud & B. Siegfried	Introduction
14:05	D. Lemic, K. Mikac & R. Bazok	Historical and contemporary genotypic changes associated with the invasion of Croatia by the WCR
14:25	G. Bermond, M. Ciosi, A. Blin & T. Guillemaud	Western corn rootworm dispersal in the Italian hybrid zone
14:45	M. Ciosi, N. Callemeyn & T. Guillemaud	Demography of the early phases of the invasion of central and south-eastern Europe and north-western Italy by the western corn rootworm
15:05	L. Campbell, T. Clark, P. Clark, L. Meinke & J. Foster	Introgression between <i>Diabrotica barberi</i> and <i>Diabrotica longicornis</i>
15:25	T. Sappington, N. J. Miller & B. S. Coates	Gene flow among populations of WCR in its (almost) original home range in Colorado and Kansas

15:45 Coffee/Tea Break & Posters

16:15 Scientific Session 4

16:15 Scientific Session 4

Session 4: Developing genetic and genomic resources for rootworms and their implications to sustainable pest management

Session Organizer: Thomas GUILLEMAUD, INRA, Sophia Antipolis, France; Blair SIEGFRIED, University of Nebraska, Lincoln, Nebraska, U.S.A. & Tom SAPPINGTON, USDA-ARS, Ames, Iowa, U.S.A.

16:15	T. Guillemaud, B. Siegfried & T. Sappington	Introduction
16:20	T. Guillemaud, E. Deleury, B. Coates, A. Gassmann, B. W. French, N. Miller, B. Siegfried & T. Sappington	WCR transcriptome project
16:40	N. Miller, T. Sappington, B. Coates, B. Siegfried, B. W. French & H. Robertson	Characterisation and sequencing of the western corn rootworm genome
17:00	T. Clark, G. Segers, R. Bolognesi, R. Flannagan & W. Moar	RNAi as a tactic for rootworm management
17:20	S. Thompson, H. Chen, A. Alves, A. Gassmann & B. Siegfried	Characterization of Cry34/35 resistance of a laboratory <i>Diabrotica virgifera virgifera</i> colony
17:40	B. W. French, B. Coates & T. Sappington	Inheritance of diapause in <i>Diabrotica barberi</i>

18:00 End Scientific Sessions

18:00 Departure from conference location to reception by public transport

19:00 Wine Tasting and Reception at the “Historisches Kaufhaus”, Market Place, Freiburg
Invitation of the Ministerium für Ländlichen Raum & Verbraucherschutz Baden-Württemberg hosted by Ministerialdirektor Wolfgang REIMER
Wine Tasting led by Rolf STEINER, Director, State Institute for Viticulture and Enology, Freiburg

Tuesday, 25 October 2011

08:30 Daily Announcement

08:35 Scientific Session 5

Session 5: Genetically-engineered maize: Current issues

Session Organizers: Rick HELLMICH, USDA-ARS, Corn Insects and Crop Genetics Research Unit, Ames, Iowa, U.S.A. & WANG Zhenying, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, P.R. China

08:35	R. Hellmich & Z. Wang	Introduction
08:40	X. Pons, B. Lumbierres, M. Eizaguirre, C. López & R. Albajes	An overview of current issues of GM maize in Spain
09:00	J. Romeis, M. Meissle, L. Malone & F. Alvarez-Alfageme	Arthropods in European maize fields: a database to support risk assessment
09:20	N. Li, X. Yang, L. Xu, Z. Wang, Q. Yang, J. Zhang, S. Guo & K. He	Research on the molecular mechanism of cross-resistance in the Asian corn borer to four Cry toxins
09:40	B. Coates, R. Hellmich & B. Siegfried	Using genomics to addressing <i>Ostrinia</i> population dynamics and control in maize
10:00	R. Hellmich	Opportunities and challenges with seed blends for managing insect resistance to <i>Bt</i> maize

10:20 Coffee/Tea Break & Posters

10:50 Scientific Session 6

Session 6: Wireworm biology and control strategies in maize

Session Organizer: Udo HEIMBACH, Julius Kühn Institute (JKI) - Institute for Plant Protection, Braunschweig, Germany

10:50	U. Heimbach	Introduction
10:55	A. Ester, K. van Rozen, H. Huiting, R. Wilhelm & M. Heger	Effect of insecticides on four different wireworm species
11:15	J. Jung, P. Racca, J. Schmitt & B. Kleinhenz	Studies on the influence of soil moisture on the vertical distribution of wireworms
11:35	J. Schmitt, F. Burghause, P. Racca, J. Jung & B. Kleinhenz	First approaches to forecast first appearance and flight-activity of selected <i>Agriotes</i> -species
11:55	S. Vidal, T. Block, T. Busch, F. Burghause, H.-H. Petersen & B. Tappe	A two year click beetle monitoring with pheromone traps in Germany: species distribution, trap specificity and activity pattern
12:15	F. Cannart, S. Vautrin & A. Fougereux	3 years of wireworms monitoring with pheromone traps in France
12:35	J. Lehmhus	Wireworm and click beetle species distribution in field crops in Lower Saxony, Germany

12:55: Lunch Break

14:00 Scientific Session 7

14:00 Scientific Session 7

Session 7: New products/methods for IPM of *Ostrinia* and *Diabrotica* in modern maize production systems

Session Organizer: C. Richard EDWARDS, Purdue University, Lafayette, U.S.A.

14:00	C. R. Edwards	Introduction
14:05	<u>U. Heimbach</u> , J. Pistorius, M. Stähler, K. Schwabe, D. Schenke & P.-T. Georgiadis	Risk of dust drift during sowing of pesticide treated seeds
14:25	<u>T. Kos</u> , R. Bazok, J. Gunjača & J. Igrc Barčić	Maximal weekly vs. average daily capture on PhAM as a tool for WCR risk assessment
14:45	<u>U. Pluschkell</u> , W. Andersch & J. Riggs	VOTiVO (<i>Bacillus firmus</i> I-1582) – a new biological product for suppression of nematode damages and plant growth enhancement in corn
15:05	<u>M. Schumann</u> , A. Patel & S. Vidal	Evaluation of an “Attract & Kill” strategy for western corn rootworm larvae
15:25	<u>K. Gloyna</u> , T. Thieme & U. Heimbach	Insecticides and cucurbitacins: compatibility of Invite EC with insecticides with different modes of action.

15:45 Honorary Lecture

15:45	<u>C.R. Edwards</u> , M. Agosti & L. Michelon	From a blank canvas a picture emerges of WCR in Brescia Province, NW Italy
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16:10 Coffee/Tea Break & Posters

16:35 Scientific Session 8

Session 8: Poster Session

Session Organizer: Ulli KUHLMANN, Delémont, Switzerland

17.30 End Scientific Sessions

17:30 IWGO Business Meeting

18:00 Departure from conference location to dinner location by public transport

19:00 Dinner Buffet at the Restaurant “Greifeneck Schlössle”, Schlossbergring 3, Freiburg

Wednesday, 26 October 2011

08:45 Daily Announcement

08:50 Scientific Session 9

Session 9: Reproductive biology of maize pests and the implications on pest management

Session Organizers: B. Wade FRENCH, USDA-ARS, NCARL, Brookings, South Dakota, U.S.A. & Panagiotis MILONAS, Benaki Phytopathological Institute, Kifissia, Greece.

08:50	B. W. French & P. Milonas	Introduction
08:55	S. Toepfer, M. Zellner & U. Kuhlmann	Oviposition of <i>Diabrotica</i> in non-maize crops and implications on crop rotation
09:15	G. Szöcs	The <i>Ostrinia</i> -puzzle
09:35	L. Meinke, R. Geisert, L. Campbell & T. Hunt	<i>Diabrotica barberi</i> diapause: potential impacts on management in Nebraska, U.S.A.
09:55	P. Milonas & D. Andow	Mating success in European corn borer and female remating behaviour
10:15	W. Hutchison & J. A. White	Areawide suppression of European corn borer via <i>Bt</i> maize: impact of low densities on sex ratio, mating frequency and the pathogen, <i>Nosema pyrausta</i>

10:35 Coffee/Tea Break & Posters

11:05 Scientific Session 10

Session 10: Population dynamics of maize pests and implications for pest management

Session Organizers: Michael ZELLNER, Bavarian State Research Centre of Agriculture, Freising, Germany and Stefan TOEPFER, CABI c/o Plant Health Station, Hodmezovasarhely, Hungary

11:05	M. Zellner & S. Toepfer	Introduction
11:10	P. Baufeld	The influence of flooding on the mortality of larvae of <i>Diabrotica virgifera virgifera</i> under Bavarian conditions
11:30	H. Graepel, C. G. Fora, C. Rancow, A. Fora, M. Zellner & F. K. Lauer	On the host-plant specificity and the impact of insecticides and tillage on <i>Diabrotica</i> populations
11:50	M. Szalai, S. Kövér, J. Kiss & S. Toepfer	Simulating maize rotation strategies to develop IPM for <i>Diabrotica v. virgifera</i> in Europe
12:10	S. Krügener, P. Baufeld & J.-G. Unger	Modelling of population dynamics of <i>Diabrotica virgifera virgifera</i> – examination of various containment measures
12:30	M. Eizaguirre, C. López & R. Albajes	Could Bt maize deployment change the relative abundance of the Lepidoptera pests of maize in Spain?

12:50 Lunch Break

14:00 Scientific Session 11

14:00 Scientific Session 11

Session 11: Corn borer control and *Trichogramma*: new research and implementation insights

Session Organizers: Dirk BABENDREIER, CABI, Delémont, Switzerland & Bernd WÜHRER, AMW Nützlinge GmbH, Pfungstadt, Germany

14:00	D. Babendreier & B. Wührer	Introduction
14:05	<u>B. Wührer</u> & O. Zimmermann	Quality of mass reared <i>Trichogramma</i> to control the European corn borer - from laboratory to field
14:25	<u>S. I. Kang</u> , Y. S. Ryang, J. O. Ri, Y.C. Pyon, D. Babendreier, F. Zhang, M. Grossrieder & U. Kuhlmann	Implementation of integrated management of Asian corn borer in DPR Korea and farmer participatory training for widespread dissemination
14:45	<u>Y. C. Pyon</u> , S. I. Kang, U. J. Kim, D. Babendreier, F. Zheng, U. S. Li, Z.-Y. Wang, L. Zheng, K. Song, K. S. Yu, J. O. Ri, M. Grossrieder & U. Kuhlmann	Establishment of mass production for <i>Trichogramma</i> : rehabilitation of Asian corn borer biological control programme in DPR Korea
15:05	<u>O. Zimmermann</u> & B. Wührer	Investigations on the mass rearing and field release of <i>Bracon brevicornis</i> , an ectoparasitoid attacking larvae of <i>Ostrinia nubilalis</i>

15:25 Coffee/Tea Break & Posters

15:55 Scientific Session 12

Session 12: Biological control of *Diabrotica* using entomopathogenic nematodes: current progress and remaining challenges

Session Organizers: Giselher GRABENWEGER, Institute for Plant Health, Austrian Agency for Health and Food Safety, Vienna, Austria & Peter KNUTH, LTZ Augustenberg, Stuttgart, Germany

15:55	G. Grabenweger & P. Knuth	Introduction
16:00	<u>S. Toepfer</u> , P. Knuth, M. Glas, R. Burger, R.-U. Ehlers, G. Grabenweger, C. Pilz, U. Heimbach & U. Kuhlmann	Efficacy of nematodes in biologically controlling <i>Diabrotica</i> larvae
16:20	C. Pilz, P. Knuth, S. Toepfer, U. Heimbach & <u>G. Grabenweger</u>	Persistence of entomoparasitic nematodes in maize fields with and without corn rootworm infestation
16:40	R.-U. Ehlers	Technical and economic aspects of the use of EPN against <i>Diabrotica virgifera virgifera</i> .
17:00	P. Knuth	Different schemes for the practical application of entomopathogenic nematodes for controlling larvae of the western corn rootworm
17:20	<u>I. Hiltbold</u> & T. C. J. Turlings	Capsules containing EPN as a Trojan horse approach to control western corn rootworm larvae

17:40 End of Scientific Sessions

19:00 Farewell Reception, Location to be announced

POSTER PRESENTATIONS

Poster 01	<u>B. Coates</u> , B. W. French, N. Miller, T. Sappington, H. Robertson & B. Siegfried	Distribution of genes and repetitive elements in <i>Diabrotica virgifera virgifera</i> : prelude to assembling a large, repetitive genome
Poster 02	A. Alves, S. Vidal, S. Thompson & O. Dermody	Optimization of tools to monitor the development of Cry34/35 corn rootworm resistance
Poster 03	B. W. French & L. Hammack	Fecundity and longevity in female northern corn rootworm relative to body size and copulation frequency
Poster 04	K. He, D. Li, Z. Wang & X. Lu	Diapause dynamics, cold hardness, and seasonal phenology of the Asian corn borer
Poster 05	O. Habustová, H.M. Hussein, Z. Svobodová, V. Půža & F. Sehnal	Two-year field study demonstrates no negative impact of GM maize expressing Cry3Bb1 toxin on non-target arthropods
Poster 06	C. Lanzanova, N. Berardo, P. Valoti, H. Hartings, A. Torri, M. Motto & C. Balconi	IDIAM –PROJECT- Analysis of genetic variability and identification of genes involved in rootworm damage tolerance in maize.
Poster 07	L. Trepashko, O. Ilyuk & S. Nadochaeva	Integrated system of corn protection against elaters in Belarus
Poster 08	L. Schaub, L. Furlan, M. Tóth, T. Steinger, L. R. C. Torrecilla & S. Toepfer	Efficiency of pheromone traps for monitoring <i>Diabrotica</i>
Poster 09	M. Schumann, K. Reibe & S. Vidal	Evaluation of western corn rootworm larval performance on conventional maize cultivars in a soil-less bioassay
Poster 10	A. Egartner, U. Heimbach & G. Grabenweger	A new method for efficacy testing of control measures against adult <i>Diabrotica</i> in maize
Poster 11	C. Ferracini, C. Jucker, M. Blandino, A. Reyneri, A. Alma & I. Rigamonti	Preliminary results on the western corn rootworm management in northwestern Italy
Poster 12	H. E. Hummel, A. Deuker, D. Eberhard, M. Glas & G. Leithold	The <i>Diabrotica</i> infestation episode of 2007 at the eastern shore of Lake Constance, Germany
Poster 13	H. Pranko & S. Nadochaeva	European corn borer incidence (<i>Ostrinia nubilalis</i> Hbn.) in corn cultivated in different agroclimatic zones of Belarus.
Poster 14	M. Acker	Western corn rootworm: experiments on the melioration of the monitoring at low population densities
Poster 15	S. Toepfer, M. Zellner, M. Szalai & U. Kuhlmann	Survival analysis of adult <i>Diabrotica v. virgifera</i>
Poster 16	H. Imgraben & M. von Wuthenau	Current monitoring, distribution and strategies for eradication and containment of <i>Diabrotica virgifera virgifera</i> LeConte in Baden-Württemberg 2011
Poster 17	R. Bazok, C. R. Edwards & T. Kos	Root damage caused by WCR larval feeding used as a predictor of maize plant lodging and yield loss
Poster 18	L. Schaub & J. Samietz	Development of a phenology model of <i>Ostrinia</i> in Switzerland
Poster 19	M. Bertossa, L. Colombi, H. E. Hummel & L. Schaub	A decade of forced cohabitation with the invasive pest species <i>Diabrotica v. virgifera</i> in southern Switzerland
Poster 20	M. Zellner, J. Hofbauer, B. Weber & S. Wagner	Influence of primary tillage on population size of <i>Ostrinia nubilalis</i>
Poster 21	F. Dematheis, U. Zimmerling, B. Kurtz, K. Smalla & S. Vidal	Does root feeding of WCR larvae influence the rhizosphere microbial communities?
Poster 22	A. Wilstermann & S. Vidal	Western corn rootworm development under constant and varying temperature regimes
Poster 23	C. Jucker & I. Rigamonti	Observations of alternative host plants in fields in Italy
Poster 24	K. G. Kim, S. Toepfer, K. J. Son, J. G. Ri, S. I. Kim, S. B. O & K. Holmes	Harnessing the pre-existing training infrastructure within DPR Korea to support the knowledge transfer of Asian corn borer IPM technology
Poster 25	A. Gassmann, J. Petzold-Maxwell & M. Rudeen	Tritrophic interactions among maize, western corn rootworm, and soil entomopathogens
Poster 26	K. Gloyna, T. Thieme & M. Zellner	<i>Sorghum</i> , <i>Miscanthus</i> & Co: energy crops as potential host plants of western corn rootworm larvae
Poster 27	H. Li, K. Holmes, K. N. Ri, S. I. Kang, I. C. Pak, Y. S. Ryang, S. G. Pak, K. M. Son, R. Han, J. Chen, F. Bollhalder, D. Zingg & S. Toepfer	Entomopathogenic nematodes for the biological control of soil-borne maize pests in DPR Korea: development of a locally adapted mass production system
Poster 28	S. S. An, C. S. Han & Y. C. Pyon	Species composition of main natural enemies of maize pests in DPR Korea

