



IWGO

International Working
Group on *Ostrinia* and
other maize pests

23rd IWGO Conference & 2nd International Conference of *Diabrotica* Genetics

**5 to 8 April 2009
Munich, 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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We would like to thank the following sponsors for providing support to organize the 23rd IWGO Conference at Munich, Germany:



SCIENTIFIC PROGRAMME

**23rd IWGO Conference &
2nd International Conference
of *Diabrotica* Genetics**

SCIENTIFIC PROGRAMME

Sunday, 5 April 2009

16:00 *Welcome Coffee & Tea – angelo Design Hotel, Leuchtenbergring 20, Munich*

16:00 *Registration – angelo Design Hotel Lobby*

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

19:00 *Welcome Reception and Buffet – angelo Design Hotel*

- *Welcome Address, Michael ZELLNER, IWGO Conference Local Organizer*
- *Welcome Address and Organizational Issues for the IWGO Conference, Ulli KUHLMANN, IWGO Convenor*

Monday, 6 April 2009

07:30 *Registration – Conference Location Amt für Ländliche Entwicklung, Industriestrasse 1, Munich (transfer from angelo Design Hotel to conference location by public transport)*

08:30 *Welcome Address*

- *C. Richard EDWARDS, IWGO Co-Convenor*

08:40 *Opening Address:*

- *Josef Huber, General Director, Bavarian State Ministry of Food, Agriculture and Forestry*

09:00 *Scientific Session 1*

09:00 Scientific Session 1

Session 1: Evaluation of *Diabrotica* eradication and containment measures

Session Organizers: Lukas SCHAUB, Agroscope Changins-Wädenswil ACW, Nyon, Switzerland

09:00	L. Schaub	Introduction
09:05	P. Baufeld	Current situation of the western corn rootworm (<i>Diabrotica virgifera virgifera</i>) in Europe
09:25	D.P. Eyre, R.J. Cannon, R.H.A. Baker, G. Nettleton & J. Miller	Surveying for <i>Diabrotica virgifera virgifera</i> in the UK: 2003-2008
09:45	M. Glas, H. Imgraben, R. Kaelberer & B. Staer	The situation of <i>Diabrotica virgifera virgifera</i> (WCR) in Baden-Wuerttemberg (BW) and experiences with eradication measures
10:05	U. Benker, C. Boegel & M. Zellner	<i>Diabrotica virgifera virgifera</i> in Bavaria - current situation
10:25	L. Furlan, G. Burgio, V. De Luigi V., S. Palmieri, M. Vettorazzo & G. Zanini	The <i>Diabrotica virgifera virgifera</i> eradication in Venice focus area has been accomplished
10:45	L. R. Carrasco, T. D. Harwood, S. Toepfer, A. MacLeod, N. Levay, J. Kiss, R.H.A. Baker, J.D. Mumford & J.D Knight	Dispersal kernels of the western corn rootworm and assessment of the effectiveness of buffer zones in eradication and containment programmes in Europe

11:05 Coffee/Tea Break & Posters

11:30 Scientific Session 2

Session 2: Economics and policy of *Diabrotica* control

Session Organizer: Justus WESSELER, University of Wageningen, The Netherlands

11:30	J. Wesseler	Introduction
11:45	J. Wesseler & E. Fall	Benefits and costs of <i>Diabrotica virgifera virgifera</i> control in Europe
12:05	K.Dillen, T Van Looy & E. Tollens	Socio-economic assessment of the invasive species <i>Diabrotica virgifera virgifera</i> in Central Europe
12:25	Z. Dun & P. Mitchell	Estimating <i>Diabrotica virgifera virgifera</i> damage functions with field trial data
12:45	H. Kehlenbeck & W. Bokelmann	Costs and benefits of plant health measures to prevent establishment and spread of <i>Diabrotica virgifera virgifera</i> in Germany

13:05 Lunch Break & Posters

14:00 Scientific Session 3

14:00 Scientific Session 3

Session 3: Exposure of honey bees to insecticides released from abrasion of treated maize seeds during sowing: where do we go from here?

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

14:00	U. Heimbach	Introduction
14:05	J. Pistorius & G. Bischoff	Insecticidal seed treatments and honeybee poisoning incidents in Germany 2008 – background and facts
14:25	U. Heimbach, M. Stähler	Quality of maize seed treatments regarding dust
14:45	U. Heimbach, D. Rautmann & H. Ganzelmeier	Influence of sowing technique of maize on drift of dust
15:05	R. Friessleben, T. Schad, R. Schmuck, H.-F. Schnier, R. Schoening & A. Nikolakis	An effective risk management approach to prevent bee damage due to the emission of abraded seed treatment particles during sowing of neonicotinoid treated maize seeds
15:25	G. Thomas; J.M. Laporte; M. Urban; T. Block	CRUISER in France - Stewardship and monitoring results of the season 2008

15:45 Coffee/Tea Break & Posters

16:15 Scientific Session 4

Session 4: Toward a synthesis: recent advances in understanding *Ostrinia* adult behaviour

Session Organizers: Tom SAPPINGTON, USDA-ARS, Ames, Iowa, U.S.A. and Denis BOURGUET, INRA, Montpellier, France

16:15	T.W. Sappington	Introduction
16:20	M.E. O'Rourke, T.W. Sappington & S.J. Fleischer	C-isotope survey of natural refuge use by European corn borer pheromone races in the U.S.: Implications for resistance management
16:40	P.G. Milonas & D.A. Andow	Male mating success is unrelated to direct fitness costs to females
17:00	D. D. Calvin, K. Ellis & S.M. Spangler	The role of European Corn Borer female movement in selection of oviposition sites, the preference-performance hypothesis, and pest management
17:20	D. Bourguet & S. Ponsard	Dispersal behavior and gene flow of European corn borer in France
17:40	T.W. Sappington & K.S. Kim	ECB dispersal at small and large scales: New insights, maddening mysteries, and the elusive unified theory of everything

18:00 End Scientific Sessions

18:00 Departure from Conference Location to Restaurant by Public Transport

19:00 Dinner

Tuesday, 7 April 2009

08:30 Daily Announcement

08:35 Scientific Session 5

Session 5: *Diabrotica* genomics: advances and prospects

Session Organizers: Tom SAPPINGTON, USDA-ARS, Ames, Iowa, U.S.A.

08:35	T.W. Sappington	Introduction
08:40	N. J. Miller, & T. W. Sappington	Genomics resources for WCR and prospects for a genome sequencing project
09:00	Charlie Whitfield	SNP marker development for WCR using a high throughput sequencing platform
09:20	K. Oswald, M. Bagley, B.W. French & C. Nielsen	Preliminary linkage map of the western corn rootworm genome and Quantitative Trait Loci (QTL) for growth
09:40	D. Grant	Creating WCRbase: An interactive community-wide home for western corn rootworm genomics data

10:00 Coffee/Tea Break & Posters

10:30 Scientific Session 6

Session 6: Evolution and population genetics of *Diabrotica*

Session Organizer: Thomas GUILLEMAUD, INRA, Sophia Antipolis, France

10:30	T. Guillemaud	Introduction
10:35	K. Oswald, M. Bagley, U. Stolz, B.W. French & C. Nielsen	Population structure and demography of western corn rootworm sampled from across its US range
10:55	M. Ciosi, N. J. Miller, S. Toepfer & T. Guillemaud	Increase of genetic variation during the colonization process of Central and South-Eastern Europe by <i>Diabrotica virgifera virgifera</i>
11:15	M. Ciosi, N.J. Miller, K.S. Kim, R. Giordanno, A. Estoup & T. Guillemaud	Invasion of Europe by the western corn rootworm: multiple transatlantic introductions with various reductions of genetic diversity
11:35	H. Li, St. Toepfer, T. Haye, Th. Guillemaud & U. Kuhlmann	Differences between disparately invading as well as crossbred populations of <i>D. v. virgifera</i> in Europe
11:55	K.M. Mikac & R. Bažok	Landscape genetics of the invasive western corn rootworm <i>Diabrotica virgifera virgifera</i> (Coleoptera: Chrysomelidae) in Croatia

12:15 Lunch Break & Posters

13:30 Scientific Session 7

13:30 Scientific Session 7

Session 7: Adaptations of *Diabrotica* to control practices in maize

Session Organizers: Blair SIEGFRIED, University of Nebraska, Lincoln, NE, U.S.A. & Tom SAPPINGTON, USDA-ARS, Ames, Iowa, U.S.A.

13:30	B. Siegfried & T.W. Sappington	Introduction
13:35	B. E. Hibbard	Western rootworm adaptation to genetically modified corn
13:55	L.M. Knolhoff	Behavioral characterization and differential gene expression of the rotation-resistant phenotype of western corn rootworm
14:15	M. Bagley, K. Oswald, W. French & C. Nielsen	Fitness of <i>Bt</i> -resistant western corn rootworm on Mon863 and isoline corn
14:35	A.P. Alves, O. Dermody & S.D. Thompson	Characterizing laboratory colonies of western corn rootworm, <i>Diabrotica virgifera virgifera</i> LeConte, selected for survival on maize containing event DAS-59122-7

14:55 Honorary Lecture

14:55	S. Toepfer	Introduction
15:00	S. Derridj	Induced changes of maize by foliar application of soluble carbohydrates, incidence on plant and <i>Ostrinia nubilalis</i> : outlooks for maize protection against <i>Diabrotica virgifera virgifera</i>

15:20 Coffee/Tea Break & Posters

15:50 Scientific Session 8

Session 8: Knowing your enemy: investigating maize pest ecology to improve control strategies

Session Organizer: Stefan TOEPFER, CABI Europe c/o Plant Protection Directorate, Hodmezovasarhely, Hungary

15:50	S. Toepfer	Introduction
15:55	M. Szalai, N. Levay, S. Toepfer & J. Kiss	How to develop discrete spatiotemporal population models for the western corn rootworm at landscape level
16:15	M. Schumann & S.Vidal	Changes in western corn rootworm below ground distribution during larval development
16:35	B. Kurtz & S. Vidal	Does chronological order matter? Western corn rootworm larvae and their interactions with root infecting <i>Fusarium verticillioides</i>
16:55	M. Erb, E. de Lange, C. Planchamp, N. Foresti, D. Karlen, C. Lenk, V. Flors, J. Ton, J. Degenhardt, & T.J.C. Turlings	Root feeding by <i>Diabrotica virgifera</i> changes shoot-physiology and resistance against <i>Spodoptera littoralis</i> in maize- and vice versa
17:15	T.C.J. Turlings, I. Hiltbold, M. D'Alessandro, J. Ton, M. Erb, M. Held, G. von Merey, E. de Lange, T. Degen, J. Degenhardt, J. Gershenson, T.G. Koellner, S. Toepfer, U. Kuhlmann, M. Frey, A. Gierl, & B.E. Hibbard	Enhancing plant signals to optimize the control of maize pests

17:35 End Scientific Sessions

17:35 IWGO Business Meeting

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18:15 Departure from Conference Location to Reception by Public Transport. Reception takes place at the “Bayerische Staatsministerium für Ernährung, Landwirtschaft und Forsten”, Großer Sitzungssaal, Ludwigstraße 2, Subway exit Odeonsplatz.

19:00 Reception and Buffet by Invitation of the Bavarian State Ministry of Food, Agriculture and Forestry represented by the General Director Josef Huber

Wednesday, 8 April 2009

08:30 Daily Announcement

08:35 Scientific Session 9

Session 9: Current issues with managing insect resistance to genetically modified maize

Session Organizers: Rick HELLMICH, USDA-ARS, Corn Insects and Crop Genetics Research Unit, Ames, Iowa, U.S.A. & Blair SIEGFRIED, University of Nebraska, Lincoln, NE, U.S.A.

08:35	R. Hellmich	Introduction
08:40	<u>K.L. Steffey</u> & M.E. Gray	Transgenic <i>Bt</i> corn, IRM, and IPM - Issues and opportunities
09:00	R.L. Hellmich, S.E. Moser, B.D. Siegfried, D.W. Onstad & J.R. Prasifka	Possible new approaches to manage insect resistance for the next generation of <i>Bt</i> maize hybrids
09:20	L.N. Xu, <u>K.L. He</u> , Z.Y. Wang & J. Zhang	Cross-resistance of Cry1Ab-selected Asian corn borer to other Cry toxins
09:40	<u>M. Eizaguirre</u> , C. López, F.Madeira, B. Lumbieres, X. Pons & R. Albajes	Changes in pest occurrence due to the deployment of <i>Bt</i> -maize: the Spanish case
10:00	<u>O. Dermody</u> , C. Bremer, A. Alves, S. Thompson & E. Owens	Research needs from industry: understanding and minimising the potential for resistance development in target pests

10:20 Coffee/Tea Break & Posters

10:50 Scientific Session 10

10:50 Scientific Session 10

Session 10: Inventory of maize pest of economic importance in Europe

Session Organizer: Xavier PONS, University of Lleida, Spain

10:50	X. Pons	Introduction to the EU Project ENDURE
11:10	P. Mouron, X. Pons, S. Otto, B. Melander, E. Czembor, J. Kiss, S. Guillot, R. van der Weide, O. Zimmermann, and F. Bigler	The Maize Case Study of ENDURE – Current status of weeds, diseases and mycotoxins
11:30	X. Pons, J. Kiss, S. Otto, B. Melander, E. Czembor, S. Guillot, R. van der Weide, O. Zimmermann, F. Bigler & P. Mouron	Present status of maize arthropod pests in ENDURE countries
11:50	L. Cagan	Maize pest status in Slovakia

12:10 Lunch Break & Posters

13:30 Scientific Session 11

Session 11: Wireworms, cutworms and other soil pests: how to implement IPM in the early stages of maize production

Session Organizer: Lorenzo FURLAN, University of Padova, Legnaro, Italy

13:30	L. Furlan	Introduction
13:35	M. Tóth, I. Szarukán, L. Furlan & J. Vuts	Female targeted floral lure for the click beetle <i>Agriotes ustulatus</i> (Coleoptera: Elateridae)
13:50	A. Peters, R.L. Gwynn, S. Töpfer, G. Grabenweger	Entomopathogenic nematodes for controlling maize insect pests
14:05	W.E. Parker	Recent developments in <i>Agriotes</i> wireworm monitoring and control
14:20	N. Schallhart, K. Staudacher, C. Wallinger & M. Traugott	<i>Agriotes</i> feeding ecology and implications for wireworm control
14:35	W.C. Bailey	Monitoring and IPM strategies for wireworm in seedling maize
14:50	L. Furlan	Can we produce maize without soil and seed treatment insecticides?
15:05		Discussion for all speakers in Session 11

15:20 Coffee/Tea Break & Posters

15:50 Scientific Session 12

15:50 Scientific Session 12

Session 12: Practicing of IPM within modern maize production systems

Session Organizers: C. Richard EDWARDS, Purdue University, Lafayette, U.S.A. & Zhenying WANG, Institute of Plant Protection, CAAS, Beijing, China

15:50	Z. Wang & C.R. Edwards	Introduction
15:55	H.G. Drobny, A. Bassi, J.A. Wiles, J.L. Rison, M. Lechner & P. Selzer	DuPont™ Coragen® (Rynaxypyr®): A new standard with a novel mode of action for the control of the European Corn Borer (<i>Ostrinia nubilalis</i>)
16:15	S. Fernandez, T. Vaughn & G. Blache	New biotechnological tools potentially available for the control of maize pests in Europe
16:35	M. Meissle & J. Romeis	Impact of Cry3Bb1-expressing <i>Bt</i> maize on adult <i>Diabrotica v. virgifera</i>
16:55	B. Cong; C.C. Yang; H.T. Qian; H. Dong	Theory and practice on applying <i>Trichogramma dendrolimi</i> to Control Asian Corn Borer in northern China
17:15	G. Grabenweger	Biological control of western corn rootworm larvae with entomopathogenic nematodes

17:35 End of Scientific Sessions

18:00 Departure from Conference Location to Restaurant by Public Transport

19:00 Dinner

POSTER PRESENTATIONS

Poster 01	<u>M. Bertossa</u> , L. Schaub & L. Colombi	Containment strategy of <i>Diabrotica v. virgifera</i> , the Swiss model
Poster 02	<u>B. Cong</u> ; H.T. Qian; H. Dong & H.Y. Zhang	Potential of applying artificial induced thelytokous line of <i>Trichogramma dendrolimi</i> for suppression of Asian corn borer
Poster 03	H.E. Hummel	Are there realistic chances for future <i>Diabrotica</i> management in Europe? Some highlights from WCR in Germany, Slovenia, Romania and Switzerland
Poster 04	M. Zellner, K.F. Lauer, A. Fora & <u>H. Graepel</u>	Research into the population dynamics, the host plant specificity and the economic threshold of <i>Diabrotica virgifera virgifera</i> LeConte
Poster 05	<u>K. Gloyna</u> , D. Voigt & T. Thieme	Sexual dimorphism of WCR – a review of morphological characters and novel data on the hairless patch of male tarsi
Poster 06	<u>D.D. Calvin</u> , J. M. Russo, J. W. Schlegel, J. A. Hyde, D.A. Miller & S. Crawford	The BT Economic Analysis Tool (BET) for maize management
Poster 07	S. Rauschen	Maize pests in central Europe: data from 6 years of environmental risk assessment research with <i>Bt</i> -maize
Poster 08	<u>S. Canzi</u> , L. Furlan & M. Agosti	Evaluation of the effect of combined insecticide treatments against adults and seed coatings on <i>Diabrotica virgifera virgifera</i> and ECB populations
Poster 09	<u>M. Subchev</u> , T. Toshova, L. Furlan & M. Tóth	Click beetles (Coleoptera: Elateridae) and their seasonal swarming in maize crops in the region of Danubian Plain in Bulgaria
Poster 10	K. Staudacher, L. Furlan & <u>M. Traugott</u>	Identifying <i>Agriotes</i> larvae using a DNA-based approach
Poster 11	<u>J. Vuts</u> , L. Furlan, I. Szarukán & M. Tóth	Is the pheromone of <i>Agriotes</i> click beetles a “classical” sex pheromone?
Poster 12	<u>M. Agosti</u> , L. Michelon, C.R. Edwards & L. Bortolotti	Western corn rootworm larval head capsule widths in irrigated fields in northern Italy
Poster 13	<u>R. Bažok</u> , I. Sivčev, J. Igrc Barčić, T. Kos & J. Kiss	Comparison of the Pherocon AM trap and „The Whole Plant Count“ data for estimating WCR adult densities in two regions in Central Europe
Poster 14	<u>A. Brkić</u> , M. Ivezić, I. Brkić, E. Raspudić & D. Šimić	Two-year experiment of field screening in maize germplasm for resistance and tolerance to <i>Diabrotica virgifera virgifera</i> LeConte in Eastern Croatia
Poster 15	<u>O. Dermody</u> , E. Owens & C. Bremer	DAS-1507 (Herculex™ I): A new tool for control of maize Lepidoptera in Europe
Poster 16	<u>Hans E. Hummel</u> , S. Dinnesen, S. Modic, G. Urek & C. Ulrichs	Western corn rootworm in confrontation mood: Simultaneous geographic and host spectrum expansion in southeastern Slovenia and other European countries
Poster 17	A. Kozina, J. Igrc Barčić, <u>R. Bazok</u> & T. Kos	Distribution and abundance of <i>Agriotes ustulatus</i> in three regions in Croatia
Poster 18	D. Dzoic, <u>M. Ivezić</u> , E. Raspudić, M. Brmez, I. Majic & J.J. Tollefson	Emergence and the optimum time for scouting of western corn rootworm based on ovarian development and accumulated degree-days
Poster 19	<u>N. Karic</u> & M. Majdancic	Influence of weather conditions on the western corn rootworm adult population density in Bosnia and Herzegovina
Poster 20	<u>B. Kurtz</u> , F. Dematheis, C. Venjakob, K. Smalla & S. Vidal	Incorporated from the rhizosphere – Fungal communities in the gut of western corn rootworm larvae
Poster 21	<u>H. Li</u> , St. Toepfer & U. Kuhlmann	How to make a bioassay about life history traits of <i>Diabrotica v. virgifera</i> ?
Poster 22	X. Li	The occurrence and damage of <i>Scotinophora horvathi</i> Distant in maize and its control considerations
Poster 23	<u>S. Modic</u> , P. Kozmus & G. Urek	Similar hatching pattern of larvae of <i>Diabrotica v. virgifera</i> due to interruption of overwintering

Poster 24	C. Noronha	"The Stem Crusher": An new and innovative way to manage the European corn borer, <i>Ostrinia nubilais</i> (Hübner) (Lepidoptera:Crambidae) in potatoes
Poster 25	<u>E. Raspudic</u> , M. Ivezic, M. Brmez & I. Majic	Susceptibility of Croatian maize hybrids to European corn borer
Poster 26	<u>M. Schumann</u> & S. Vidal	Noninvasive methods for evaluating western corn rootworm larval behaviour and maize root growth
Poster 27	<u>Z. Svobodova</u> , O. Habustova, H.M. Hussein, P. Dolezal	Insect communities on the <i>Bt</i> and control maize plants
Poster 28	<u>Stefan Toepfer</u> , Ralf-Udo Ehlers, Regina Burger, Arne Peters & Ulrich Kuhlmann	Biological control of <i>Diabrotica</i> larvae using nematodes
Poster 29	<u>S. Toepfer</u> , Š. Modic, C. Pilz, I. Grozea, F. Toth & U. Kuhlmann	Is the invasive alien western corn rootworm attacked by indigenous natural enemies in Europe?
Poster 30	<u>Z.Y. Wang</u> , K.L. He & S.X Bai	Galerucid beetle, <i>Monolepta hieroglyphica</i> (Motschulsky), a potential major insect pest of maize in northern China
Poster 31	<u>St. Toepfer</u> & U. Kuhlmann	Natural mortalities of western corn rootworm populations in Europe