PROFILE

Internal Newsletter issued by the Publication Commission for the IOBC/wprs Council and Executive Committee

http://www.iobc-wprs.org

International Organization for Biological and Integrated Control of Noxious Animals and Plants – West Palearctic Regional Section

ISSUE Nr. 37 July 2004

In this Issue

The Presidents Page ......................................................................................................... 2
IOBC/WPRS Commissions, Working Groups................................................................... 3
IOBC/wprs Officers and their Addresses ........................................................................ 4
WG "Pheromones and other Semiochemicals .... – Pherolist........................................... 8
WG „Ecological Impact of Genetically Modified Organisms” – Report, Next Meeting...... 9
Commission on IP Guidelines and Endorsement .............................................................. 10
Joint Meeting of 3 WGs in San Michele – Report............................................................ 11
WG "Insect Pathogens and Insect Parasitic Nematodes" – Next Meeting......................... 13
WG "Integrated Protection of Olive Crops – Next Meeting ............................................ 14
WG „Integrated Control in Protected Crops, Mediterranean Climate“ – Next Meeting.... 14
WG „Integrated Control in Protected Crops, Temperate Climate“ – Next Meeting.......... 15
WG "Integrated Protection in Citrus Crops" – Next Meeting............................................ 16
WG "Integrated Protection in Oak Forests" – Next Meeting........................................... 17
New IOBC / wprs Publications – Bulletins: 27(1, 3-5) including Contents .................... 17
Other interesting publications brought to attention of Profile........................................... 28
Bukovinszky, T.: Tailoring complexity: Multi trophic interactions in simple and diversified habitats. – PhD Thesis ................................................................. 31
Reorganisation of the Austrian Agency of Health and Food Safety ............................... 32
Time-Table of Forthcoming Events ................................................................................ 33
For the Council and members of IOBC/WPRS one of the recurrent questions is the role of the organisation and the research included. In January this year I took the opportunity to convey some considerations about the importance of Biological and Integrated Control to buffer pesticides due to EU’s lowered ambitions.

Since that we have experienced another change which call for us. That change is linked to global warming, and the point is that across contrasting views about causes the majority of climatological researchers are now in agreement about the general rise of temperature.

Global warming including a temperature rise of 1-5° C and various changes in precipitation during the next 10-20-50 years will have major influence on all sorts of plant based productions and the connected problems. Already now changes in time of starting flowering etc. are reported. Also distribution of mobile insects reflect climatical changes, and certainly distribution and importance of a number pest insects, plant diseases and weeds are in many cases undergoing changes. Eg. it appears that some insects move some 50 km per annum northwards in Europe.

This situation is an enormous challenge to IOBC/WPRS simply because the most sustainable and intelligent response is further development and adjustment of biological and integrated control rather than “chemical panic” at a later stage.

An area calling for special attention may be pests and diseases with low natural dispersal capability. Such organisms are by experience assisted by human activities as soon as new potential is opening. It is likely that early transfer of their natural enemies will be an activity of vital importance.

It may seem a little early but the growing acceptance of global warming as a fact may me suggest to WPRS members and participants in our Working Group meetings to consider and discuss the potential influence on pest, disease and weed distribution, performance and importance in the near future.

Peter Esbjerg
## Commissions, Working Groups

**December, 2003**

<table>
<thead>
<tr>
<th>Commissions</th>
<th>Convenor</th>
<th>Liaison-Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publications</td>
<td>BATTHON H.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>TIRRY L.</td>
<td></td>
</tr>
<tr>
<td>Determination and <strong>identification</strong> of entomophagous insects</td>
<td>BAUR H.</td>
<td>–</td>
</tr>
<tr>
<td>Guidelines for integrated production</td>
<td>AVILLA J.</td>
<td>ALBAJES R.</td>
</tr>
</tbody>
</table>

### Working Groups

<table>
<thead>
<tr>
<th>Working Groups</th>
<th>Convenor</th>
<th>Liaison-Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated protection of <strong>fruit crops</strong></td>
<td>CROSS J.</td>
<td>MALAVOLTA C.</td>
</tr>
<tr>
<td>Pesticides and <strong>beneficial organisms</strong></td>
<td>VOGT H.</td>
<td>BIGLER F.</td>
</tr>
<tr>
<td>Breeding for <strong>plant resistance</strong> to pests and diseases</td>
<td>BIRCH A.N.</td>
<td>TIRRY L.</td>
</tr>
<tr>
<td>Pheromones and other semio-chemicals in integrated production</td>
<td>WITZGALL P.</td>
<td>BATTHON H.</td>
</tr>
<tr>
<td><strong>Multitrophic interactions</strong> in soil</td>
<td>SIKORA R.</td>
<td>KERRY B.</td>
</tr>
<tr>
<td>Integrated protection in <strong>viticulture</strong></td>
<td>LOZZIA C.</td>
<td>GESSLER C.</td>
</tr>
<tr>
<td>Integrated protection of <strong>oilseed crops</strong></td>
<td>KOOPMAN B.</td>
<td>ALABOUVETTE C.</td>
</tr>
<tr>
<td>Integrated protection of <strong>field vegetables</strong></td>
<td>VIDAL S.</td>
<td>ESBJERG P.</td>
</tr>
<tr>
<td>Integrated control in <strong>protected crops, temperate climate</strong></td>
<td>ENKEGAARD A.</td>
<td>BLUEMEL S.</td>
</tr>
<tr>
<td>Integrated control in <strong>protected crops, mediterranean climate</strong></td>
<td>CASTAÑÉ C.</td>
<td>BLUEMEL S.</td>
</tr>
<tr>
<td><strong>Insect pathogens</strong> and entomoparasitic nematods</td>
<td>PAPIEROK B.</td>
<td>HUBER J.</td>
</tr>
<tr>
<td>Integrated control of fungal and bacterial <strong>plant pathogens</strong></td>
<td>ELAD Y.</td>
<td>ALABOUVETTE C.</td>
</tr>
<tr>
<td>Integrated protection in <strong>oak forests</strong></td>
<td>VILLEMANT C.</td>
<td>VIEIRA M.M.</td>
</tr>
<tr>
<td>Integrated protection of <strong>stored products</strong></td>
<td>NAVARRO S.</td>
<td>BATTHON H.</td>
</tr>
</tbody>
</table>
Integrated protection of olive crops (KALAITZAKI A.) MALATHRAKIS N.

Integrated protection of citrus crops (GARCIA-MARÍ F.) BESRI M.

Induced resistance in plants against insects and diseases SCHMITT A. HUBER J.

GMO’s in integrated plant production BIGLER F.

Landscape management for functional biodiversity (POEHLING H.M. ROSSING W.) VAN LENTEREN J.

IOBC/wprs Officers and their Addresses

All Officers are asked to send corrections and additions to this compilation of addresses to the editor of Profile and/or to the treasurer.

1 – Executive Committee

Esbjerg, Prof. Dr. Peter (President), Zoology Section, Royal Veterinary and Agricultural University, Thorvaldsensvej 40, DK-1871 Frederiksberg C., Copenhagen (Denmark), Tel +45-35282686, Fax +45-35282670, e-mail: peter.esbjerg@ecol.kvl.dk

Albajes, Prof. Dr. Ramon (Vice-President), Universitat de Lleida, Centre UdL-IRTA, Rovira Roure, 191, E-25006 Lleida (Spain), Fax +34-973-238301, e-mail: ramon.albajes@irta.es

Huber, Dr. Jürg (Vice-President), Institute for Biological Control, BBA, Heinrichstrasse 243, D-64287 Darmstadt (Germany), Tel +49-6151-407220, Fax +49-6151-407290, e-mail: j.huber@bba.de, http://www.bba.de

Tirry, Prof. Dr. Luc (Vice-President), Ghent University, Laboratory of Agrozoology, Department of Crop Protection, Coupure Links 653, B-9000 Gent (Belgium), Tel +32-9-2646152, Fax +32-9-2646239, e-mail: luc.tirry@ugent.be

Alabouvette, Dr. Claude (General Secretary), INRA, Laboratoire de recherches sur la flore pathogène du sol, 17, rue Sully, BP 86510, F-21065 Dijon Cedex (France), Tel +33-3-80693041, Fax +33-3-80693224, e-mail: ala@dijon.inra.fr

Gessler, Dr. Cesare (Treasurer), Swiss Federal Institute of Technology, Institute of Plant Sciences Phytomedicine-Pathology, Universitätsstrasse 2, CH-8092 ETH-Zürich (Switzerland), Tel +41-1-6323871, Fax +41-16321108, e-mail: cesare.gessler@ipw.agr.ethz.ch, Tel +39-0461615239 cesare.gessler@ismaa.it
2 – Council

Bathon, Dr. Horst, Institute for Biological Control, BBA, Heinrichstrasse 243, D-64287 Darmstadt (Germany), Tel +49-6151-407-225, Fax +49-6151-407290, e-mail: h.bathon@bba.de

Besri, Prof. Dr. Mohamed, Département de Phytopathologie, Institut Agronomique et Vétérinaire Hassan II, BP 6202, Rabat-Instituts, Maroc, Tel: +212-3777-8364, Fax: +212-3777-8364 -8135, e-mail: m.besri@iav.ac.ma

Bigler, Dr. Franz, Swiss Federal Research Station for Agroecology, Reckenholzstrasse 191, CH-8046 Zürich (Switzerland), Tel +41-1-3777111, Fax +41-1-3777201, e-mail: franz.bigler@fal.admin.ch

Blümel, Dr. Sylvia, AGES, Austrian Agency for Health and Food Safety (AGES), Institute of Plant Health, Spargelfeldstrasse 191, A-1226 Wien (Austria), Tel: +43-0-50555-33300, Fax: +43-0-50555-33303, e-mail: pflanzengesundheit@ages.at, sbluemel@ages.at

Kerry, Dr. Brian, Rothamsted Research, Harpenden, Hertfordshire AL5 2JQ (UK), Tel +44-1582-763133, e-mail: brian.kerry@bbsrc.ac.uk

Malathrakis, Dr. Nikolaos, Technological Education Institute, Stauromenos, G-71500 HERAKLIO, Crete, Greece, Tel: +30-21-379459, e-mail: nmal@steg.teiher.gr

Malavolta, Dr. Carlo, Servizio Produzioni Vegetali, Viale Silvani, 6, I-40122 Bologna (Italy), Tel +39-051-284654, Fax +39-051-284337, e-mail: cmalavolta@regione.emilia-romagna.it

Van Lenteren, Prof. Dr. Joop Coert, Wageningen University, Laboratory of Entomology, P.O. Box 8031, NL-6700 EH Wageningen, The Netherlands, Tel: +31-317-482327, Fax: +31-317-484821, e-mail: joop.vanlenteren@users.ento.wau.nl

Vieira, Dr. Maria Margarida, Direcção-Geral de Protecção das Culturas, Quinta do Marquês, 2780-155 Oeiras, Portugal, Tel: +351-21-4464057, Fax: +351-21-4420616, e-mail: margaridav@dgpc.min-agricultura.pt

Deputy Members

El Titi, Dr. Adel, State Institute for Plant Protection, Reinsburgstrasse 107, D-70197 Stuttgart, Germany, Tel: +49-711-6642478, Fax: +49-711-6642498, e-mail: adel.elitti@lfp.bwl.de

Pommier, Dr. Jean-Jacques, IREF, Lanxade, Prigonrieux, F-24130 La Force, France, Tel: +33-53221510 /-553829031, e-mail: pommier@ciref.asso.fr

Den Belder, Dr. E., Plant Research International, P.O. Box 16, NL-6700 AA Wageningen, The Netherlands, Tel: +31-317-476105, Fax: +31-317-410113, e-mail: e.denbelder@plant.wag-ur.nl

3 – Auditing Committee

Freuler, Dr. Jost A., Station Fédérale de Recherche en, Production végétale de Changins, Route de Duillier, Case postale 254, CH-1260 Nyon, Switzerland, Tel: +41-22-3634383, Fax: +41-22-3634394, e-mail: jost.freuler@bluewin.ch

Lavadinho, Dr. Antonio Manuel Pereira, Direcção-Geral de Protecção das Culturas, Quinta do Marquês, P-2780 - 155 Oeiras, Portugal, Tel: +351-214420616, e-mail: dgpc@mail.telepac.pt
Rezapanah, Dr. Mohammadreza, Biocontrol Control Research Dept, Plant Pests and Diseases Research Institute (PPDRI), Agricultural Research and Education Organization (AREO), P.O. Box: 19395-1454, Velenjak, Tehran, Iran, Tel: +98-21-2420224 / +98-21-2420225, Fax: +98-21-2403691, e-mail: rezapana@yahoo.com, http://www.areeo.or.ir

Royle, Dr. David J., East End Stable, Nowhere Lane, Nailsea, Bristol BS48 2PT, UK, Tel: +44-12-75857197

Adler, Dr. Cornel, BBA, Institute for Stored Product Protection, Königin-Luise-Strasse 19, D-14195 Berlin, Germany, Tel: +49-30-83042503, Fax: +49-30-83042502, e-mail: adler@bba.de, http://www.bba.de

4 – Convenors

Avilla, Dr. Jesus, Centre UdL-IRTA de Lleida, Area de Proteccio de Conreus, Alcalde Rovira Roure 191, E-25198 Lleida, Spain, Tel: +34-973-702581, Fax: +34-973-238301, e-mail: jesus.avilla@irta.es

Bathon, Dr. Horst, Institute for Biological Control, BBA, Heinrichstrasse 243, D-64287 Darmstadt (Germany), Tel +49-6151-407225, Fax +49-6151-407290, e-mail: h.bathon@bba.de, http://www.bba.de

Baur, Hannes, Natural History Museum, Department of Invertebrates, Bernastrasse 15, CH-3005 Bern (Switzerland), Tel: +41-31-3507264, Fax +41-31-3507499, e-mail: hannes.baur@nmbe.unibe.ch, http://www.nmbe.ch

Birch, Dr. A.Nick, Scottish Crop Research Institute, Invergowrie, Dundee DD2 5DA (Scotland, UK), Tel +44-1382-562731, Fax +44-1382-562426, e-mail: n.birch@scri.sari.ac.uk, http://www.scri.sari.ac.uk

Boller, Dr. Ernst F., Eidgenössische Forschungsanstalt Obst-, Wein- & Gartenbau, CH-8820 Wädenswil (Switzerland), Tel +41-1-7836379, e-mail: ernst.boller@faw.admin.ch

Castañé, Dr. Cristina, IRTA, Centre de Cabrils, Carretera de Cabrils s/n, E-08348 Cabrils (Barcelona) Spain, Tel +34-93-7507511, Fax +34-93-7533954, e-mail: Cristina.Castane@irta.es

Cravedi, Dr. Piero, Università Cattolica del Sacro Cuore, Instituto di Entomologia e Patologia Vegetale, Via Emilia Parmense 84, I-29100 Piacenza (Italy), Fax +39-523-599235, e-mail: piero.cravedi@unicatt.it

Cross, Dr. Jerry, Entomology and Plant Pathology Department, East Malling Research, East Malling, West Malling, Kent ME19 6BJ, UK, Tel: +44-1732-843833, e-mail: jerry.cross@emr.ac.uk

Elad, Dr. Yigal, A.R.O. The Volcani Center, Department of Plant Pathology, Bet Dagan 50250 (Israel), Tel +972-3-9683580, Fax +972-3-9683688, e-mail: elady@volcani.agri.gov.il

Enkegaard, Dr. Annie, Danish Institute of Agricultural Sciences, Department of Crop Protection, Research Centre Flakkebjerg, DK-4200 Slagelse (Denmark), Tel +45-58113300, Fax +45-58113301, e-mail: annie.enkegaard@agrssci.dk

Garcia-Mari, Ferran, Dept. Ecosistemes Agroforestales, E.T.S. Enginyers Agronomos, Universitat Politècnica de València, Camí de Vera 14, E-46022
Working Group

„Use of Pheromones and other Semiochemicals in Integrated Control“
Utilisation des phéromones et autres médiateurs chimiques en lutte intégrée

Convenor
Peter Witzgall, Dept. of Crop Science, Swedish University of Agricultural Sciences, 230 53 Alnarp, Sweden

The Pherolist
http://www-pherolist.slu.se/

The Pherolist is a database of chemicals identified from sex pheromone glands of female Lepidopteran insects and other chemicals attractive to male moths. This database was compiled by HEINRICH ARN, ERNST PRIESNER and MIKLÓS TÓTH and was first published in 1986 as the book: "List of Sex Pheromones of Lepidoptera and Related Attractants" by IOBC/wprs.

HEINRICH ARN then created a web version in 1995 to facilitate updates. The Pherolist was indeed one of the first scientific databases on the web and it was maintained and updated until September 2000. The Pherolist reflects the widespread use of sex pheromones, and attracts between 50 and 100 unique visitors per day. The Pherolist has now been reprogrammed to facilitate updates. Since HEINRICH ARN retired, this work is continued by by PETER WITZGALL, MARIE BENGTSSON, and MIKLOS TÓTH.

Future versions of the Pherolists will also contain pheromones of other insect orders. This work is in progress and a new version, including an improved interface, should be online by the end of 2004.

The Pherolists can be browsed by taxonomic and trivial names of insects, by chemical compounds, as well as by authors. Compound names and insects are interconnected, a mouseclick shows, for example, all species using a particular chemical. The Pherolist contains images of the most important species and their trivial names in several languages which makes it a useful tool, not only for people working with pheromones.
Working Group Meeting

A joint meeting with the WG “Integrated Protection of Fruit Crops” will be held in Trento, Italy, September 26 – 30, 2004. Please consult our website for details (http://www.phero.net/iobc/trento/announc5.html).

Working Group
“GMOs in Integrated Production”
Convenor Jörg Romeis

The first meeting of this new Working Group entitled ‘Ecological Impact of Genetically Modified Organisms’ was held in Prague, Czech Republic, from November 26-29, 2003. Local organizer was František Sehnal. More than one hundred participants from 23 countries attended the meeting. After two days of presentations, one day was reserved for half-day long workshops in which specific topics were addressed (workshop organiser in parentheses):

- Hybridisation/fitness of hybrids (Detlef Bartsch & Hans C.M. den Nijs)
- Monitoring/bioindicators (Salvatore Arpaia)
- Biodiversity implications – off crop (Andreas Lang)
- Impact of GM crops on natural enemies (Jörg Romeis)
- Impact of GM crops on soil organisms/functions (Wolfgang Büchs)
- Resistance management (Achim Gathmann)
- GM crops and pollinators (Stefan Kühne & Dirk Babendreier)

A large portion of the presentations and discussions was about the impact of Bt-transgenic maize on non-target arthropods, especially biological control agents. This was due to the fact that (i) most participants had a background in entomology, (ii) there is a vast amount of published and unpublished information available on this GM crop, and (iii) Bt-maize is the only insect-resistant GM crop that is currently grown commercially in Europe. In addition to laboratory studies, results from a number of field experiments with Bt-crops were presented. Another area that was well presented were studies concerning the impact of herbicide tolerant crops such as the UK farm-scale evaluation project. Other topics that were addressed included: (i) the potential for gene flow from GM crops to non-GM plants and the possible consequences of this event, (ii) unintended effects of GM crops such as probiotic effects on
non-target herbivores and (iii) regulatory issues especially the importance of post-release monitoring.

A detailed report of the meeting has been published in *Biocontrol News and Information* 25(1), 15N-16N. The proceedings of the meeting including short workshop reports will be published in 2004 as an IOBC/WPRS Bulletin.

The next full meeting of the working group will take place in the first half of 2005. If you wish to actively participate in the WG, please get in contact with the convenor.

---

### Commission on IP Guidelines and Endorsement

The Executive Committee has appointed Dr. Frank Wijnands (Applied Plant Research, PPO, The Netherlands), an expert on Integrated Arable Farming Systems, as new member of the Commission. He was welcomed at the last meeting of the Commission. The most important achievement of the Commission was the approval of the 3rd edition of the IOBC/WPRS Basic Document on Integrated Production, which contains the Definition and Principles, as well as the Guidelines I and II. Due to the high importance of this document, which states the point of view and the policy of IOBC/WPRS regarding Integrated Production, the IOBC/WPRS President (Dr. Esbjerg) and the liaison officer (Dr. Albajes) also attended the meeting.

It as agreed that IOBC IP standards must be in the upper part of the total quality pyramid. The document will be available soon at the internet site. The Experts’ Panel in charge of the production of the Guidelines for outdoor Vegetables under Northern and Southern conditions have already met and produced a first draft. The four endorsed IP organizations got their renewal.

All the information on the activities of the Commission is available at the internet site:

[http://www.iobc.ch](http://www.iobc.ch)

Dr. Jesús Avilla, Chairperson  
Centre UdL-IRTA de R+D  
Universitat de Lleida  
Rovira Roure, 191  
25198 – Lleida. Spain  
e-mail: jesus.avilla@irta.es  
Tel: ++ 34 973 70 25 81, Fax: ++ 34 973 23 83 01
Joint meeting of the Working Groups
"Biological Control of Fungal and Bacterial Plant Pathogens”, “Integrated Control In Protected Crops, Temperate Climate” and “Integrated Control in Protected Crops, Mediterranean Climate”.
San Michele (Italy), 9-12 June 2004: Management of plant diseases and arthropod pests by BCAs and their integration in agricultural systems'

The meeting of the WGs ‘Biological Control of Fungal and Bacterial Plant Pathogens’, ‘Integrated Control In Protected Crops, Temperate Climate’ (Convenor: Annie Enkegaard) and ‘Integrated control in Protected Crops, Mediterranean Climate’ (Convenor: Cristina Castañé) was held in S. Michele all’Adige, Trentino, Italy (9-13 June 2004), locally organized by Ilaria Pertot, Daniele Barbacovi and Manuela Malavolta. The meeting took place in the Instituto Agrario di San Michele all’Adige and was hosted by the SafeCrop Research Center.

The specific topics of the workshop were:
– Integrated plant disease and arthropod pest management: possibilities for integration, problems with interactions between different tools of pest and disease management, positive and negative side effects on non-target organisms.
– Multi target agents, including both microbial and those derived from natural substances, i.e. targeting several diseases or targeting disease(s) and pest(s).
– Side effects of arthropod pest management tools on disease development and control.
– Side effects of disease control on beneficials.
– Case studies of implementation of integrated disease and pest management; successes and problems encountered.
– Integrated disease management.
– Integration of microbials and management of the greenhouse for IPM of pests and diseases according to decision support systems.
– Commercial use of microbials for pests and diseases management - present situation and prospects, including new/near registration products.
– Application of natural substances/microbials against diseases.
– Role of host plant resistance in IPM of pests and diseases.
– Induced resistance towards diseases and pests.

A big number of participants (164) from 24 countries participated in the meeting. Discussion between entomologists, plant pathologists and other plant protection experts were held. In order to fill gaps that are
evident in the field of true integrated disease and pest management, we allocated significant time to discussions on integration, holistic approaches and gaps in information and knowledge. A round table discussion was one of the highlights of the meeting (moderator: Cesare Gessler). During the round table discussion and throughout the meeting a major concern was expressed regarding the difficulties in commercialization of microbial biocontrol and other alternatives and the delay in implementation of friendly means of control. Missing information about the behaviour of biocontrol agents in production scaled up stages, during storage and the distribution chain stages and the usually short shelf life of these products were described as a drawback. The severe EU regulations for registration of microbials and the fact that the regulations are somewhat not clear at present, pose major difficulties in placing biocontrol agents in the market. The companies involved are usually small or medium enterprises and have no strong enough financial backbones to withstand the demands. The public ignorance regarding biocontrol was also highlighted as a reason for concern among the scientists. Nevertheless, in spite of the existence of gaps of knowledge on the way to implementation of alternative control measures the support for research and development in this direction is poor.

The need for more work on integration of control methods for real life management of diseases and arthropod pests was widely expressed. Questions such as the following were raised: is there a possibility of multiple effects on targets that occur simultaneously?, is there enough knowledge regarding conflicting results - control of one problem but increase of another problem, the risk of emerging problems, the possibility of minor pathogens and pests to become important and the limited information about the effect of alternatives on non-target organisms. A call for more research on these subjects was raised.

The next meeting of the WG “Integrated Control of Fungal and Bacterial Plant Pathogens” will be organized by Monica Höfte and Haïssam Jijakli in Spa, Belgium in the Sol Cress congress centrum from 6-10 September, 2006. The theme of this meeting will be “Fundamental and practical approaches to increase biocontrol effects”.

The next meeting in the WG “Integrated Control in Protected Crops, Temperate Climate” will be organized by Irene Vänninen and co-workers in Naantali, Finland from 10-14 April 2005 with themes relating to integrated pest and disease management in glasshouses and in outdoor and hardy nursery stocks.

Yigal Elad (Bet Dagan)
Working Group "Insect Pathogens and Insect Parasitic Nematodes", Next Meeting 2005

Entitled "Invertebrate Pathogens and Biocontrol: Present and Future", the 10th European meeting of the Working Group will be held in Locorotondo, near Bari, Italy, 10-15 June 2005, in cooperation with the COST Actions 842 "Entomophthorales" and 850 "Biocontrol Symbiosis". The Local Organizer is Oreste Triggiani, from the Facoltà di Agraria, Università degli Studi di Bari.

The meeting will include oral and poster contribution sessions as well as workshops (dedicated to entomopathogens: fungi, protozoa...), owing to local facilities (laboratory rooms, microscopes, binoculars...).

Further informations are given on the homepage created for this event:

http://www.agr.uniba.it/iobc

Interested people are invited to fill in the pre-registration form available on the website and to send it to the Local Organizer:

Pr. Oreste Triggiani  
Dipartimento di Biologia e Chimica Agroforestale ed Ambientale  
Facoltà di Agraria  
Università degli Studi di Bari  
Via Amendola 165/A  
70126 Bari (Italy)  
Tel: +39 080 5442878  
Fax: +39 080 5442876  
E-mail: triggian@agr.uniba.it

WG convenor: Bernard Papierok  
Collection des Champignons  
Institut Pasteur  
28, rue du Docteur Roux  
75015 Paris (France)  
Tel: +33 (0)1 45 68 82 26  
Fax: +33 (0)1 45 68 85 87  
E-mail: papierok@pasteur.fr
**Working Group “Integrated Protection of Olive Crops”**  
**Next meeting 2005**

The next meeting of the Working Group “Integrated Protection of Olive Crops” will be held in October 2005 at Florence, Italy. The meeting will be organized by Dr Antonio Belcari (Chairman) (Department of Agricultural Biotechnologies, University of Florence). The first announcement will be sent from the chairman, soon.

Full articles of the 1st Meeting (29-31 May 2003) will be published in the IOBC/WPRS Bulletin until the end of October 2004. Informations in the 1st Meeting website:

www.maich.gr/iobc

WG Convenor: Dr. Kalaitzaki Argyro  
Division of Agricultural Development of Chania  
Department of Plant Protection  
Tel.: +30 28210 28281  
Fax: +30 28210 28047  
E-mail: argkalaitzaki@yahoo.com

---

**Working Group “Protected Crops, Mediterranean Climate” – Next Meeting, 2006**

The next meeting of the working group will take place in May 2006 hosted by Dr. Juan Antonio Sánchez from Instituto Murciano de Investigación y Desarrollo Agrario (IMIDA). It will be held in the city of Murcia (Spain) that is located in the center of an important greenhouse production area that comprises the southeast Mediterranean coast of Spain. During the meeting we will have the opportunity to visit the area and see the situation of biological control strategies in such a production region. For further information, please contact:

Convenor:  
Dr. Cristina Castañé  
Institut de Recerca i Tecnologia Agroalimentàries (IRTA),  
Ctra. de Cabrils s/n, 08348 Cabrils (Spain)  
Tel. +34 93 7507511  
Fax: +34 93 7533954  
E-mail: Cristina.Castane@irta.es
The IOBC/WPRS Working Group “Integrated Control in Protected Crops, Temperate Climate” will meet on the 10-14 April 2005, in Naantali, Finland (Local organizer: Irene Vanninen). The meeting will feature 4 days of presentations and workshop discussions on integrated pest and disease management in glasshouses, and will include a research tour of the glasshouse industry in the Turku area.

In addition, the last day of the meeting (14 April) will be dedicated to the topic “IPM in outdoor and hardy nursery stocks”. This topic will encompass pests, diseases and weeds.

It will be possible to participate in 1) the part of the meeting dealing only with IPM in glasshouses (10-13 April), 2) the part of the meeting dealing only with IPM in outdoor nursery stocks (14 April), or 3) the whole meeting (10-14 April). Expected maximum costs for these three types of attendance are 1) 600 Euro, 2) 115 Euro, or 3) 720 Euro. Costs include accommodation, meals, conference facilities and excursion.

The meeting will be organised like the previous meetings of our WPRS working group, including sending out the Bulletin to all participants before the meeting. There will be relatively few presentations at the meeting, with most of the time being devoted to discussions. Topics will, among others, include:

- Integrated pest and disease management in greenhouse crops (ornamentals, vegetables)
- Important and/or new pests and diseases; and beneficials
- Emerging tools of crop and herbivore manipulation
- IPM in greenhouses with artificial lighting
- Need of new biocontrol agents in protected crops
- Pesticide resistance and its management in greenhouses
- Registration and quality control
- Decision support systems (remove??)

New ideas are welcome, please contact Annie Enkegaard

Articles for the “Proceedings” have to be prepared before December 2004. Details for preparation will be sent to you later in the autumn. Contributions will be limited to 4 pages maximum.

Further specifications re. cost for the meeting, application forms, travel instructions, etc. will be sent to you later in the autumn.
To be placed on the mailing list to receive further details, please contact: Irene Vanninen.

Local organiser
Irene Vanninen
Agrifood Research Finland
Plant Production Research
31600 Jokioinen (Finland)
Tel +358-3-4188 2580
Fax +358-3-4188 2584
e-mail: Irene.Vanninen@mtt.fi
http://www.mtt.fi

IOBC/WRPS WG Convenor
Annie Enkegaard
Danish Institute of Agricultural Sciences
Dept. of Crop Protection
Research Centre Flakkebjerg
DK-4200 Slagelse (Denmark)
Tel +45 58113300
Fax +45 58113301
e-mail annie.enkegaard@agrsci.dk
www.foulum.dk/plb/iobc/iobc_home.htm

Working Group “Integrated Protection of Citrus Crops”, Next Meeting, 2005

The next meeting of the IOBC/wprs Working Group “Integrated Protection of Citrus Crops” will take place in Lisbon (Portugal), June 6-7, 2005, at the Instituto Superior de Agronomia (Universidade Técnica de Lisboa). The organization is considering a post-congress tour to Madeira Islands, to visit the Madeira-Medfly facilities and project and to watch new exotic pests as *Toxoptera citricida* and *Trioza erythreae*.

The organizer of the meeting is:
Prof. José Carlos Franco
Secção de Protecção Integrada
Dep. Protecção das Plantas e de Fitoecologia
Instituto Superior de Agronomia
Tapada da Ajuda, 1349-017 Lisboa (Portugal)
Tel. +351.21.3653226
Fax. +351.21.3653430
E-mail: jsantossilva@isa.utl.pt

Convenor: Ferran Garcia Marí
Entomologia Agrícola, Institut Agroforestal Mediterrani
ETSE Agronomes
Universitat Politècnica de València
Camí de Vera 14, 46022 Valencia (Spain)
Tel. +34 96387 9250
Fax. +34 96387 9269
E-mail: fgarciam@eaf.upv.es
The 4th meeting of the WG “Integrated Protection in Oak Forests” will be held from 05 - 08 October, 2004, in Hammamet (Tunisie). We already have about 80 inscriptions and 45 propositions of oral communications. One participant comes from Canada and another one from Iran.

The following sessions are planned:

- Phytosanitary status of oak forests in the Mediterranean region.
- Biology and impact of xylophagous insects.
- Biology and impact of phytophagous fungi.
- Biology and impact of phytofagous pests.
- Natural enemies, biological and integrated control.
- Forest management
- Forest regeneration.

Additional details see “Time-table of forthcoming events”, p. ???

Convenor: Claire Villemant
Curator of Hymenoptera
MNHN Entomologie
ESA 8043
45 rue Buffon
75005 Paris (France)
Tel. +33 (0)1 40 79 38 41, Fax. +33 (0)1 40 79 36 99
E-mail: villeman@mnhn.fr

New IOBC/wprs Publications

<table>
<thead>
<tr>
<th>Individual Members: Important !</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual members receive the Bulletins produced by <strong>5 Working Groups or Commissions</strong> of their choice. They may order additional Bulletins by the treasurer:</td>
</tr>
<tr>
<td>Dr. Cesare Gessler, Phytomedicine / Pathology</td>
</tr>
<tr>
<td>Universitaetsstr. 2, CH-8092 ETH Zürich (Switzerland)</td>
</tr>
<tr>
<td>e-mail: <a href="mailto:cesare.gessler@ipw.agri.ethz.ch">cesare.gessler@ipw.agri.ethz.ch</a></td>
</tr>
<tr>
<td><a href="mailto:cesare.gessler@ismaa.it">cesare.gessler@ismaa.it</a></td>
</tr>
</tbody>
</table>
New IOBC/wprs Bulletins

The Publication Commission of the IOBC/wprs has issued the following Bulletins in 2004 (including the Contents of the Bulletins); see also Profile 36: 28-37 for IOBC/wprs Bull. 26(8-11), 2003 or visit the IOBC/wprs homepage.

IOBC/wprs Bulletin Vol. 27(1) 2004


Investigation of three nematophagous fungi in two potato cyst nematode suppressive soils**
Simon D. Atkins, D. Sosnowska, V.J. Evans, I.M., Clark, P.R. Hirsch and Brian R. Kerry .......................................................... 1

Fungal molecular diagnostics of nematophagous fungi
Simon D. Atkins, Ian M. Clark, C. Oliver Morton and Brian R. Kerry .......................................................... 9

Soils suppressive to Rhizoctonia solani AG 2-2IIIB in sugar beet
Yvette Bakker and Johannes H.M. Schneider .......................................................... 17

Biology and management of a new disease of nursery and small-fruit crops
A.R. Bennett .......................................................... 23

Management of root-knot nematodes on the agroforestry tree crop Sesbania sesban**
John Bridge ........................................................................................................................................ 27

Observations on the biology of Pasteuria parasites and microbial nematode control*
Aurelio Ciancio and Paola Leonetti ............................................................................................. 33

Control of Verticillium wilt of cauliflower with crop residues, lignin and microbial antagonists
Jane Debode, Dakerlia Claey and Monica Höfte .............................................................................. 41

Challenges in the commercialisation of Trichoderma harzianum strain T-22, a new biocontrol agent for Europe.
Marlies Dissevelt and Willem Ravensberg .................................................................................. 47

Antifungal activity of Bacillus subtilis filtrate to control Fusarium oxysporum f.sp. lentis, the causal organism of lentil vascular wilt**
Said El-Hassan, Simon R. Gowen and B. Bayaa ............................................................................. 53

Evaluation of Trichoderma hamatum for antagonistic activity against lentil vascular wilt, Fusarium oxysporum f. sp. lentis
Said El-Hassan and Simon R. Gowen .............................................................................................. 59

Biosurfactants and biological control of plant pathogens
Andrea Ficke, Jorge de Souza, Marjen de Boer, Corrie Geerds and Jos M. Raaijmakers ............................................................................................. 63
Plant tolerance for managing plant parasitic nematodes**
Katherine Gierth, Johannes Hallmann, Josef Schlang, Joachim Müller and Richard A. Sikora .................................................................67

Pasteuria penetrans and the integrated control of root-knot nematodes
Simon R. Gowen and Barbara Pembroke ..................................................75

Variation of disease severity of bottom rot in field-grown lettuce and possibilities of control
Rita Grosc, Carmen Feller and Andreas Kofoet..............................................79

Endophytic bacteria and biological control of nematodes
Johannes Hallmann, Annekathrin Faupel, Annette Krechel, Richard A. Sikora and Gabriele Berg ..............................................................83

Micro-organisms and broadspectrum induced systemic resistance
Rüdiger Hauschild, Maina Mwangi, Kerstin Schäfer and Philip Paek ..................95

Mycofumigation with Muscodor albus for control of soil-borne microorganisms
Barry J. Jacobsen, Nina K. Zidack, Gary A. Strobel, David Ezra, Eva Grimme and Anna M. Stinson .........................................................103

Effect of soil nutrients on the growth, survival and fecundity of insect pests of rice: an overview and a theory of pest outbreaks with consideration of research approaches
Gary C. Jahn .................................................................................................115

Application of Pochonia chlamydosporia in the integrated control of root-knot nematodes on organically grown vegetable crops in Cuba**
Brian R. Kerry and Leopoldo Hidalgo-Diaz .................................................123

Variation in Pochonia chlamydosporia and its potential as a biological control agent for root-knot nematodes.
Brian R. Kerry, Simon D. Atkins, Tim Mauchline, C. Oliver Morton and Penny Hirsch .................................................................127

Biological control of plant parasitic nematodes with Paecilomyces lilacinus, strain **
Sebastian Kiewnick ......................................................................................133

Risk assessment of fungal biocontrol agents
Sebastian Kiewnick, Christos Roumpos and Richard A. Sikora .......................137

Biocontrol activity of phenazine-producing rhizobacterium Pseudomonas chlororaphis
Shiri Klein, Marina Veselova, Angelina Mayatskaya, Inessa Khmel, Ilan Chet and Leonid Chernin ..............................................................145

Preventive plant health management: Modern horticulture becomes high tech
Matthew S. Krause, Alfons C. R. C. Vanachter and Tom J. J. De Ceuster ..........151

Bacterial life inside and outside potato roots and leaves
Annette Krechel, Michaela Ditz, Andreas Ulrich, Annekathrin Faupel, Johannes Hallmann and Gabriele Berg ............................................157

The effect of certain bacteria and fungi on the biology of the root-knot nematode Meloidogyne spp.**
Stefanos Leontopoulos, Ioannis Vagelas, Fotios Gravanis and Simon R. Gowen ..................................................................................165

Resistance induced by soil biocontrol application and soil solarization for the control of foliar pathogens
Neta Okon Levy, Yigal Elad, Nadia Korolev and Jaakov Katan .......................171

Survival and activity of the Ralstonia solanacearum antagonist Pseudomonas chlororaphis 24-4 in the rhizosphere of tomato and its impact on the indigenous bacterial community
Annett Milling, Antje Lemke, Jens Schönfeld and Kornelia Smalla ..................177
Biological variation in Verticillium chlamydosporium isolated from different nematode hosts
C. Oliver Morton, Penny Hirsch, John Peberdy and Brian R. Kerry ............................ 187
Dissecting the tri-trophic interaction between Pochonia chlamydosporia, root-knot nematodes and their plant hosts.
C. Oliver Morton, Simon D. Atkins, Penny Hirsch and Brian R. Kerry ......................... 193
Strategies in developing an efficient commercial product for biological control of soil borne fungal pathogens by Serratia plymuthica HRO-C48
Henry Müller, Stefan Kurze, Irina Richter and Gabriele Berg .................................... 199
Can fungal endophytes control soilborne pests in banana?
Bjööm Niere, Clifford S. Gold and Danny Coyne ....................................................... 203
Soil organic matter
Stephen Nortcliff ........................................................................................................ 211
Monitoring gfp-tagged bacterial antagonists in the rhizosphere of tomato plants
Raquel Peixoto, Monika Götz, Annett Milling, Gabriele Berg, Rodrigo Costa,
Alexandre Rosado, Leda Mendonça-Hagler and Kornelia Smalía ............................... 219
Pasteuria penetrans - friend, tease or distraction?*
Barbara Pembroke and Simon R. Gowen ................................................................. 225
Pasteuria penetrans: a tri-trophic interaction?
Barbara Pembroke, Daim Ali Darban and Simon R. Gowen ..................................... 229

The effect of application of Trichoderma viride B35 (Pers. ex S.F. Grey) with iprodione on the rhizoplane microflora of Allium porrum (L.) and its infection with Pyrenochaeta terrestris ((Hansen) Gorenz, Walker et Larson)
Stanislaw J. Pietr, Marta Stankiewicz, Elżbieta Wojtkowiak – Gebarska,
Krzysztof Matkowski and Anita Besiada .................................................................... 235
Pathogen defense against biological control
Jos M. Raaijmakers, Henk-Jan Schoonbeek, Alexander Schouten and Maarten de Waard................................................................. 241
Biocontrol of plant-parasitic nematodes by Trichoderma harzianum
Edna Sharon, Alfredo –Errera Estrella, Ilan Chet and Yitzhak Spiegel ......................... 247
Suppressive soils, the edge of chaos and multitrophic strategies for biocontrol of pests and diseases in soil ecosystems
Richard A. Sikora and Stephan Reimann .................................................................. 251
Impact of organic amendments on soil suppressiveness to diseases
Christian Steinberg, Véronique Edel-Hermann, Cécile Guillemaut, Ana
Pérez-Piqueres, Puneet Singh and Claude Alabouvette ............................................. 259
Perspectives and challenges of breeding towards resistance to soil-borne pathogens – sugar beet as an example
Ralf Tilcher, Bernd Holtschulte and Werner Beyer ..................................................... 267
Antifungal activity of a bacterium symbiotically associated with Steinernema abbreviata towards Fusarium oxysporum*
Ioannis K. Vagelas, Fotios T. Gravanis and Simon R. Gowen .................................... 271
Soilborne fungi and bacteria symbiotically associated with Steinernema spp. acting as biological agents against Fusarium wilt of tomato**
Ioannis K. Vagelas, Fotios T. Gravanis and Simon R. Gowen .................................... 279
Biological control of Rhizoctonia solani damping-off with a bacterium symbiotically associated with Steinernema abbreviata**
Disease suppression in potting mixes amended with Dutch yard waste composts
Dirk Jan van der Gaag, Etienne van Rijn and Aad Termorshuizen ............................ 291
Impact of application of biocontrol agents to plant root on the natural occurring microbial community

Arite Wolf, Katja Schenewinski, Henry Müller, Anja Golly, Komelia Smalla and Gabriele Berg

*p papers presented at the Einsiedeln-meeting, Switzerland, 2000;

** papers presented at the Reading-meeting, England, 2001

IOBC/wprs Bulletin Vol. 27(2) 2004
Commission on "IP Guidelines and Endorsement". – This Bulletin will be edited later in 2004.

IOBC/wprs Bulletin Vol. 27(3) 2004

Plant transformation: methodology, applications and the potential for unintended effects.
A.M.R. Gatehouse .................................................................................................................. 1

Molecular solutions for increasing biosafety of transgenic plants.
J. Gressel & H. Al-Ahmad .................................................................................................. 7

Testing rubidium marking for measuring adult dispersal of the corn borer Sesamia nonagrioides: first results.

Analysis of web content of Theridion impressum L. Koch (Araneae: Theridiidae) in BT (DK 440 BTY, MON 810, Cry1Ab) and isogenic (DK 440) maize.
K. Árpás, F. Tóth & J. Kiss .................................................................................................. 23

Impact of transgenic oilseed rape on soil arthropod assemblages.
G. Burgio, F. Ramilli, M.C. Fiore & F. Cellini ........................................................................ 31

Potential effect of GNA-transgenic potatoes on adult aphid parasitoids.
A. Couty & J. Romeis .......................................................................................................... 37

Monitoring of pest and beneficial insect populations in summer sown Bt maize.
G. Delrio, M. Verdinelli & G. Serra ....................................................................................... 43

Assessing expression of Bt-toxin (Cry1Ab) in transgenic maize under different environmental conditions.
A. Dutton, M. D’Alessandro, J. Romeis & F. Bigler .............................................................. 49

Tracking Bt-toxin in transgenic maize to assess the risks on non-target arthropods.
A. Dutton, L. Obrist, M. D’Alessandro, L. Diener, M. Müller, J. Romeis & F. Bigler ............... 57

Comparison of the nodulation ability and abundance of aerobic bacteria in the rhizosphere of transgenic and non-transgenic lines of alfalfa.
N. Faragová, J. Faragó & J. Gálová ......................................................................................... 65

Research programme to monitor corn borer resistance to Bt-maize in Spain.
G.P. Farinós, M. De La Poza, M. González-Nuñez, P. Hernández-Crespo, F. Ortego & P. Castañera ................................................................. 73

Results of a 4-year plant survey and pitfall trapping in Bt maize and conventional maize fields regarding the occurrence of selected arthropod taxa.
B. Freier, M. Schorling, M. Traugott, A. Juen & C. Volkmar ............................................. 79
Population development of some predatory insects on Bt and non-Bt maize hybrids in Turkey.
M. Güllü, F. Tatlı, A.D. Kanat & M. İslamoğlu ............................................................ 85

The GMO Guidelines Project and a new ecological risk assessment.
A. Hilbeck, D. Andow & E. Underwood................................................................. 93

European corn borer (Ostrinia nubilalis): Studies on proteinase activity and proteolytical processing of the B.t.-toxin Cry1Ab in transgenic corn.

First investigations on the effects of Bt-transgenic Brassica napus L. on the trophic structure of the nematofauna.
B. Manachini, S. Landi, M.C. Fiore, M. Festa & S. Arpaia .................................... 103

Studies on the effects of Bt corn expressing Cry1Ab on two parasitoids of Ostrinia nubilalis Hb. (Lepidoptera: Crambidae).
B. Manachini & G.C. Lozza ..................................................................................... 109

Implications for the parasitoid Campoletis sonorensis (Hymenoptera: Ichneumonidae) when developing in Bt maize-fed Spodoptera littoralis larvae (Lepidoptera: Noctuidae).
M. Meissle, E. Vojtech & G.M. Poppy .................................................................. 117

Production of Cry1Ab toxin in E. coli for standardisation of insect bioassays.
Nguyen Thu Hang, T. Meise, G.-A. Langenbruch & J.A. Jehle.................................. 125

No effects of Bt maize on the development of Orius majusculus.
X. Pons, B. Lumbierres, C. López & R. Albajes .................................................... 131

Impact of growing Bt-maize on cicadas: Diversity, abundance and methods.
S. Rauschen, J. Eckert, A. Gathmann & I. Schuphan ............................................ 137

Impact of genetically modified herbicide resistant maize on the arthropod fauna.
I.I. Rosca .................................................................................................................. 143

A biannual study on the environmental impact of Bt maize.
F. Sehnal, O. Habuštová, L. Spitzer, H.M. Hussein & V. Růžička ......................... 147

Determination of fungi species, relationship between ear infection rates and fumonisin quantities in Bt maize.
F. Tatlı, M. Güllü & F. Ozdemir ............................................................................. 161

Spider communities in Bt maize and conventional maize fields.

Larvicidal activities of transgenic Escherichia coli against susceptible and Bacillus thuringiensis israelensis-resistant strains of Culex quinquefasciatus.
M.C. Wirth, W.E. Walton, R. Manasherob, V. Khasdan, E. Ben-Dov, S. Boussiba & A. Zaritsky ................................................................. 171

Peculiarities of Cry proteins to be taken into account during their in vivo and in vitro study.
I.A. Zalunin, L.P. Revina, L.I. Kostina & G.G. Chestukhina .................................. 177

Workshop reports

Hybridization & Fitness of Hybrids. – D. Bartsch & H. den Nijs ................................ 187

Impact of GM crops on pollinators. – D. Babendreier & S. Kühne .......................... 191

Impact of GM crops on natural enemies. – J. Romeis ............................................ 193

Biodiversity implications off-crop. – A. Lang ......................................................... 197

Resistance management. – A. Gathmann ............................................................... 203

Monitoring/Bioindicators. – S. Arpaia .................................................................... 205

Soil organisms and functions. – W. Büchs ............................................................. 209
Virus diseases of Ribes and Rubus in Europe and approaches to their control.
A. T. Jones..........................................................................................................................1

Exploiting natural enemies in Integrated Pest Management in blackcurrant crops.
J. V. Cross, A. Harris........................................................................................................9

Potential of ground covers for manipulating pest, predator, and pollinator populations
in highbush blueberry.
R. Isaacs, M. O’Neal, Z. Szendrei, J. Tuell .................................................................17

Vegetable biocidal pellets for biofumigation and fertilisation.
L. Lazzeri, O. Leoni, R. Bernardi, G. Patalano, S. Palmieri........................................25

Application techniques of phytosanitary products adapted to small fruit crops.
A. Ançay, J. Rüegg.................................................................27

Cultural control methods against Phytophthora root rot of red raspberry.
A. Ançay, V. V. Michel......................................................................................................31

Problems for strawberry culture in Latvia.
V. Lauagale, I. Morocko, L. Petrevica ...........................................................................37

Possibilities of integrated grey mould control on strawberry plantations in Poland.
B. Meszka, A. Bielenin.....................................................................................................41

Fungal flora in strawberry plants and relative importance of Botrytis cinerea.
S. Rigotti, O. Viret........................................................................................................47

Effect of cultural methods on leaf spot (Mycosphaerella fragariae Tul.) incidence in
strawberries.
A. Schmid, C. Daniel, F. P. Weibel .............................................................................55

Occurrence of diseases in Austrian elderberry orchards.
R. Steffek..........................................................................................................................57

Strawberry diseases imported into Switzerland with young plants.
E. Bosshard, H. J. Schärer............................................................................................61

Fungi colonising elderberries (Sambucus nigra) and their impact on the occurrence
of wilt symptoms.
R. Steffek, J. Altenburger............................................................................................65

Chitinase as a control agent of Didymella applanata causing the raspberry spur
blight.
M. Shternshis, A. Beljaev, T. Shpatova, A. Duzhak, Z. Panfilova.............................67

Resurgence of virus problems in Rubus in the United Kingdom: possible effects on
crop production and certification.
A. T. Jones, W. J. McGavin..............................................................................................73

Sampling of the two-spotted spider mite Tetranychus urticae Koch and its predators
Amblyseius andersoni (Chant) and Phytoseiulus persimilis Athias-Henriot in
protected Swiss raspberry.
Ch. Linder, C. Carlen, C. Mittaz.....................................................................................79

Interactions among predatory and phytophagous mites on strawberry.
J. Fitzgerald, N. Pepper, M. Solomon.............................................................................85

Impact of two-spotted spider mite Tetranychus urticae Koch infestation in early
season strawberry crops and efficacy of different control strategies.
Ch. Linder, C. Carlen, C. Mittaz.....................................................................................87
Open forum discussion: What do growers expect from research?
J. V. Cross.........................................................................................................................95

Molecular techniques to determine mite predator/prey interactions on strawberry.
J. Fitzgerald, N. Harvey, M. Solomon.................................................................................99

Pest control in blackcurrant IFP in Poland using the new neonicotinoid-thiacloprid
as Calypso 480 SC.
B. H. Łabanowska..........................................................................................................101

Adopting integrated Pest Management for the raspberry beetle Byturus unicolor
Say (Coleoptera: Byturidae), for Washington State red raspberries.
Tanigoshi.........................................................................................................................107

Developing a "lure and kill" system for raspberry beetle, Byturus tomentosus, in
Rubus production.
C. Mitchell, S. C. Gordon, A. N. E. Birch, S. F. Hubbard..............................................113

Economic evaluation of two plant protection programmes, standard and IPM, in
blackcurrant production in Poland.
K. Zmarlicki, D. Gajek....................................................................................................119

Exploiting the sex-aggregation pheromone of strawberry blossom weevil
(Anthonomus rubi).
J. Cross, D. Hall, P. J. Innocenzi, C. M. Burgess..............................................................125

The first field experiences with sex-aggregation pheromones of the strawberry
blossom weevil, Anthonomus rubi, in Austria.
C. Lethmayer, H. Hausdorf, S. Bluemel.........................................................................133

Effectiveness of conventional and integrated control of blackcurrant pest.

Strawberry blossom weevil - recent research in Norway.
N. Trandem, S. Aasen, E. B. Hågvar, J. Haslestad, S. H. Salinas, A. Sænsetby..............145

Efficacy of chemical and biological control of the strawberry root weevil
(Otiorhynchus ovatus) and the vine weevil (Otiorhynchus sulphatus) in
strawberry plantations in Poland.
B. H. Labanowska, R. W. Olszak, C. Tkaczuk, A. Augustyniuk-Kram .........................153

Importance of simulated damage to flower buds by strawberry blossom weevil on
raspberries.
C. Carlen, C. Mittaz, R. Carron........................................................................................161

Jaapiella vacciniorum Kieffer (Diptera : Cecidomyiidae); a new pest of highbush
blueberry (Vaccinium corymbosum) in Trentino, Italy.
A. Grassi, F. Forno.........................................................................................................167

Annex

Proceedings of the workshop on arthropod pest problems in pome fruit production, Vienna,

The potential for biocontrol of rosy apple aphid (Dysaphis plantaginea) using
entomopathogenic fungi.
H. Yeo, J. V. Cross, D. Chandler.......................................................................................173
Significance of the parasitoids and predators in IPM of sour-cherry
K. Balázs and G. Jenser .......................................................... 3

New pests in peach orchards in Croatia
I. Ciglar, B. Baric and E. Raspudi .......................................................... 9

Cydia tenebrosana – a new pest in plum fruits?
E. Dickler, C. Theinert C. and H. Raufeder ........................................ 13

Effect of the extreme cold winter in 2001/2002 on Pseudaulacaspis pentagona,
and new data of distribution in Central-Europe
F. Kozár and Z.K. Benedicty .............................................................. 19

On the transmissibility of PPV by Myzus varians Davidson (Homoptera: Aphididae) to Clematis vitalba L. (Ranunculaceae)

Studies on some developmental parameters of Anarsia lineatella Zell. reared on artificial diet
F. Molinari and O. Zanrei ................................................................. 29

The damage of thrips on nectarine: sampling methods of populations and injury level
M.G. Tommasini and G. Burgio .......................................................... 37

Dynamics of appearing Cydia molesta and Anarsia lineatella in peach orchards in Slovenia
S. Tomše, I. Žežlina and L. Milevoj .................................................. 51

Evolution of the dispensers of pheromone for false-trail-following in the control of Cydia molesta (Busck) and Anarsia lineatella Zeller
F. Molinari, F. Rama, F. Reggiori and O. Zanrei .................................. 59

The use of Shin-Etsu mating disruption system in Italy
V. Veronelli and A. Iodice ................................................................. 65

Three years of mass trapping with sex attractant traps for control of Anomala Scarabs in ripening peaches
E. Voigt and M. Tóth ................................................................. 69

Insecticide resistance management of the green peach aphid in Italian peach orchards
P. Cravedi and E. Mazzoni ................................................................. 77

Western flower thrips in peach: a new approach to control in orchards
J.F. Mandrin and J. Lichou ................................................................. 81

Insecticide resistance mechanisms found in the green peach aphid in Italy
E. Mazzoni and F. Pavese ................................................................. 87

Problem of cherry fruit fly (Rhagoletis cerasi) in Poland – flight dynamics and control with some insecticides
R.W. Olszak. and A. Maciesiak ................................................................. 93

Control strategies for the Cherry Fruit Fly (Rhagoletis cerasi) in organic farming
S. Caruso and M.C. Cera ................................................................. 101

Control strategies for Plum Sawflies (Hoplocampa fava, Hoplocampa minuta) in organic farming
S. Caruso and M.C. Cera ................................................................. 107
Control trials against *Myzus persicae* and *Cydia molesta* in organic farming

*F. Molinari, E. Mazzoni and P. Cravedi* ................................................................. 111

Bacterial spot in stone fruit tree: recent work and future possibilities

*A. Garcia and J. Lichou* ......................................................................................... 119

Bacterial spot of stone fruits in Slovenia

*T. Dreo, G. Seljak, T. Demšar and M. Ravnikar* .................................................... 125

Use of natural compounds for plant nutrition and protection in organic farmed orchards

*B. Marangoni, A.D. Rombolà and G. Sorrenti* ......................................................... 131

Soil management and productivity of a sweet cherry orchard

*A. Roversi and A. Monteforte* .................................................................................. 139

---

The regular prices for the Bulletins are:

- up to 100 pages: 10 EURO per copy
- up to 300 pages: 15 EURO per copy
- > 300 pages: 30 EURO per copy

---


26
This book addresses the following topics: Mass production and artificial rearing of natural enemies; Pathogens of mass produced natural enemies and pollinators; Quality control of natural enemies used for pest control; Guidelines and statistical methods for quality control; Natural enemy behaviour; Parasitoids, predators, microbial pesticides; Population ecology and genetics; Management of small populations; Risk assessment of natural enemies.

Description: The use of biological control agents has been increasing worldwide and there are now many companies mass-producing such organisms, particularly for the control of insect pests. However, there is a great need for quality control in the production and use of these natural enemies, which include insect parasitoids and predators, fungi and viruses. This book has been written to provide both background theory and practical guidance on this subject.

Contents
Need for quality control for mass produced biological control.
  J C van Lenteren
Aspects of total quality for the production of natural enemies.
  N C Leppla, University of Florida, USA
A variable-response model for parasitoid foraging behaviour.
  L E M Vet, Wageningen University, The Netherlands, W J Lewis, USDA-ARS, Georgia, USA, D R Papaj, University of Arizona, USA and J C van Lenteren
Variations in natural enemy foraging behaviour: essential element of a sound biological control theory.
  W J Lewis, USDA-ARS, Georgia, USA, L E M Vet, Wageningen University, The Netherlands, J H Tumlinson, USDA-ARS, Florida, USA, et al
The parasitoids’ need for sweets: sugars in mass rearing and biological control.
  F L Wäckers, Netherlands Institute of Ecology, The Netherlands
Managing captive populations for release: a population genetic perspective.
  L Nunney, University of California, USA
Adaptive recovery of fitness reduction: the role of population size.
  R F Hoekstra, Wageningen University, The Netherlands
The use of unisexual wasps in biological control.
  R Stouthamer, Wageningen University, The Netherlands
Comparison of artificially vs. naturally reared natural enemies and their potential for use in biological control.
  S Grenier, Institut National des Sciences Appliqués, France and P DeClerq, Ghent University, Belgium
Pathogens of mass-produced natural enemies and pollinators.
  S Bjørnson, Sant Mary's University, Nova Scotia, Canada and C Schütte, Wageningen University, The Netherlands
Commercial availability of biological control agents.
  J C van Lenteren
Mass production, storage, shipment and release of natural enemies.
  J C van Lenteren and M G Tommasini, Centrale Ortofrutticola, Italy
Regulation of import and release of mass produced natural enemies: a risk assessment approach.
  J C van Lenteren, D Babendreier and F Bigler, Swiss Federal Research Station, Switzerland, et al
Quality assurance in North America: merging customer and producer needs.
  C S Glenister, IPM Laboratories, Inc, USA, A Hale, Nature’s Alternative International, Canada and A Luczynski, Biobugs Consulting Ltd, Canada
State of affairs and future directions of product quality assurance in Europe.

K J F Bolckmans, Berkel and Rodenrijs, The Netherlands

The relationship between results from laboratory product control tests and large cage tests where dispersal of natural enemies is possible: a case study with Phytoseiulus persimilis.

S Steinberg and H Cain, Bio-Bee Biological Systems, Sde Eliyahu, Israel

Quality of augmentative biological control agents: A historical perspective and lessons learned from evaluating Tachyphantes.

R F Luck and L D Forster, University of California, USA

Towards the standardisation of quality control of fungal and viral biocontrol agents.

N E Jenkins and D Grzywacz, CAB/Bioscience, UK

 Guidelines for quality control of commercially produced natural enemies.


Basic statistical methods for quality control workers.

E Wajnberg, INRA, France

Other interesting publications brought to attention of Profile


The thesis presented here is the result of a joint European Research project “Biological Control of Thrips Pests”. Specific aims of the project were to collect, evaluate, mass produce and commercially apply natural enemies of thrips species. To evaluate natural enemies we applied specified selection criteria, which had proven its value in previous pre-introduction selection of natural enemies of several other greenhouse pests. In my part of the evaluation programme, I studied what prospects hymenopterous parasitoids might have as biological control agents of thrips, in particular the western flower thrips, Frankliniella occidentalis (Pergande).

First (Chapter 1) I summarised available information on the thrips pests which currently play a key role in protected cultivation in Europe. In particular I looked into F. occidentalis, Thrips tabaci Lindeman and two other species that I studied: Frankliniella schultzei Trybom and F. intonsa
(Trybom) and reviewed their geographical distribution, economic impact, followed by additional information on thrips biology, ecology and ways of control. Then the state of the art is discussed of the most important groups of natural enemies that are currently evaluated and/or applied as biological control agents: predatory mites, pirate bugs, entomopathogenic fungi and entomophilic nematodes. Specific emphasis is put on the current status of hymenopterous parasitoids attacking thrips, their biology, ecology and life-history and the prospects they might have for thrips control in European greenhouses. Finally, I present the aim of my research project and the outline of this thesis.

When the research project started, no parasitoid of western flower thrips was known. In our search for parasitoid candidates, presented in Chapter 2, a sampling programme was developed, surveying *F. occidentalis* populations in its original area of distribution (USA) and newly invaded areas (South of Europe). Parasitoids of closely related thrips species, distributed worldwide, preferably from areas with climatically conditions similar to northwest European glasshouses were collected as well. Based on the host and geographic distribution records in the literature, mainly species were collected within the genus *Ceranisus* (Walker), solitary larval endoparasitoids of thrips species closely related to *F. occidentalis*. Our collection efforts resulted in a number of parasitoid species and various geographical strains, the most important being *Ceranisus menes* (Walker) and *Ceranisus americensis* (Girault) (Hymenoptera: Eulophidae). Both are solitary koinobiont endoparasitoids of thrips larvae that reproduce asexually.

A critical phase in any evaluation programme, is the development of an adequate and reliable rearing procedure, allowing a standardised supply of insects of a constant quality and large enough quantities. For laboratory bioassays on thrips and parasitoids, and eventually mass-production, it is essential that large cohorts of even aged groups of larvae are available. In Chapter 3 we describe and evaluate laboratory methods for rearing various species of thrips, such as *Frankliniella occidentalis*, *F. intonsa*, *Thrips palmi* (Karny) and *Thrips tabaci* Lind. (Thysanoptera: Thripidae) and their parasitoids. When using a method based on honey-solution and pine pollen, large numbers could be produced of high quality, with relatively little time investment. For rearing parasitoids the method proved adequate as well, but less efficient in yield and time.

A number of basic evaluation criteria for pre-introduction selection of useful natural enemies, is based on the outcome of behavioural and developmental interactions with their target host in laboratory experiments. Specific aspects of the parasitoid’s host selection process are evaluated in Chapter 4 (host age selection) and Chapter 5 (host
species selection). Results presented in Chapter 4 show that host acceptance by *C. menes* and *C. americensis* was negatively correlated with size, age and stage of the larval host. Observations on the parasitoid’s behaviour showed that the extent to which a wasp could complete and attack and oviposit significantly decreased with increasing size (age) of host larvae. The apparent preference for small sizes of larvae is largely caused by defensive reactions (walking away, wagging the abdomen, anal exudate production) upon an encounter to vehement resistance (wriggling, dragging) of the larvae when attacked and stung. In larvae smaller or equal to her own size, a wasp could manage its victim, whereas larvae larger than herself managed to escape prior or during an attack. The apparent preference for small and young host larvae is valuable for developing a mass-production system for thrips parasitoids, for the timing of releases in the greenhouse and, because only a small part of the population is prone to attack, has consequences for the population dynamics of the host and the parasitoid.

Although in a greenhouse grown crop *F. occidentalis* often is the major, but not the only thrips species around it is important to know the host preference of the parasitoids with respect to different species. No-choice tests, presented in Chapter 5 show that differences in the behaviour and biology of both the host and the parasitoid species strongly influenced their development and fitness. On the species level as well as on the population level parasitoids differed in host acceptance behaviour, parasitoid developmental time and size of their offspring. *C. americensis* preformed best on its original co-evolved host *F. occidentalis*. *C. menes* consists of a large complex of regional populations, that either reproduce sexually or asexually. They differ morphologically, geographically, behaviourally and physiologically in their response to different geographical populations of thrips species, each of them having its unique characteristics.

Life-history studies performed on *C. menes* and *C. americensis* in the laboratory (Chapter 6) shows that developmental and reproductive biology were significantly affected by temperature and characteristic for each species / strain. It was found that immature developmental time took much longer when temperature decreased, in particular for *C. americensis*. Pupal development times in *C. menes* varied greatly at both temperatures for certain types (yellow) but not for others (brown). Both species have different reproduction strategies: *C. americensis* has a higher daily reproduction, but a shorter reproduction period, compared to various strains of *C. menes*, that reproduce less during a longer period. The population growth rates differed per species / strain and temperature, but where in almost all cases lower than (literature) data of *F. occidentalis*.
In Chapter 7 it is shown that short-range host location by *C. menes* and *C. americensis* is positively affected by visual and chemical stimuli. Both species are attracted to yellow colours and were arrested on sites where larvae had been feeding. Wasps did react to the presence or damage inflicted by feeding of non-hosts, but arrestment did not seem to be very host specific: within a parasitoid species no difference was found in reaction to feeding spots of one host species, *Thrips tabaci* or another *F. occidentalis*. Parasitoid females were not attracted to the synthetic compounds of the alarm pheromone (decylacetate plus dodecylacetate) of western flower thrips in short-range flight tests, indicating a non-volatile effect.

In Chapter 8 evaluation studies were performed on a larger scale: experimental and commercial greenhouses. In spite of repeated introductions in infested crops, either vegetables like sweet pepper and cucumber, or ornamentals like rose and potted plants, very low levels of parasitism were found. Searching efficiency and dispersal ability in a greenhouse crop were very low and parasitoids performed poorly under (temperate) greenhouse conditions. Both parasitoid species could maintain themselves, dispersed and reproduced at Dutch glasshouse conditions, but they were unable to reduce thrips populations to sufficiently low levels.

Finally, in Chapter 9, I summarise and discuss the main results of my research, placed in perspective of the pre-introduction criteria we used. It is concluded that, based on behavioural (host selection and searching efficiency), biological (climatic adaptation, development and reproduction capacity) and practical (mass-production) characteristics, thrips parasitoids have very limited prospects for greenhouse biological control for both seasonal inoculative and inundative release programmes in temperate and in Mediterranean greenhouses.

A pdf version of this thesis can be obtained from:

a.j.m.loomans@minlnv.nl

---

**Bukovinszky, T. (2004):** Tailoring complexity: Multitrophic interactions in simple and diversified habitats. – PhD Thesis, Wageningen University, Laboratory of Entomology

Increasing vegetation diversity in agro-ecosystems by using plant-species mixtures, may suppress herbivore populations by reducing the apparency and quality of crop plants and increasing the success of natural enemies.
Unfortunately, as the mechanisms of pest-suppression at the behavioural level is largely untested, there is insufficient information to explain the variable responses of herbivores and natural enemies to plant-species mixtures. The aim of my thesis project was to understand the cause(s) of lower herbivore numbers in vegetationally diversified cropping systems compared with monocultures and to study the behavioural responses of natural enemies to vegetation diversity. The studied system included Brussels sprout (*Brassica oleracea* gemmifera), its herbivores, and *Dia-degma semiclausum*, a parasitoid of the diamondback moth. Vegetational diversity was characterised by mixing Brussels sprout with either barley (*Hordeum vulgare*) or mustard (*Sinapis alba*). Numbers of several herbivore species were reduced when Brussels sprout was mixed with barley. A study showed that the plant competition in the species mixture influenced herbivore responses by altering plant quality compared with the monocrop. Field and simulation studies showed that responses of herbivores in diversified habitats were influenced by species-related differences in foraging behaviour. Behavioural and analytical studies showed the importance of inter- and intraspecific variation in volatiles of both damaged and undamaged plants in the attraction of the parasitoid *D. semiclausum*. Plant mixtures interacted with the searching behaviour and time-allocation of wasps. Compared with pure sprout patches, mustard attracted and retained individuals longer, whereas barley reduced their tendency to enter the plant patch. Although both mustard and barley reduced the tendency of wasps to locate hosts on Brussels sprout, parasitoids improved their foraging efficiency through oviposition experiences and became equally efficient in finding further hosts. In conclusion, the results reported in my thesis demonstrate the importance of foraging behaviour in explaining variable responses of herbivores and parasitoids to plant-species mixtures.

A pdf-version of this thesis can be obtained at:

Tibor.Bukovinszky@wur.nl

---

**Reorganisation of the Austrian Agency of Health and Food Safety**

The former Institute of Phytomedicine at the Austrian Agency of Health and Food Safety in Austria has been reorganised in autumn 2003 and was substituted by the Institute of Plant Health.
The main activities of the Institute of Plant Health focus on:

- phytosanitary aspects (phytosanitary control, monitoring of quarantine pests, inclusive diagnostics for relevant pests),
- the evaluation of plant protection products for the implementation into integrated and biological production systems,
- R & D and consulting (e.g. efficacy testing of plant protection products, side effect testing of PPPs, phytotoxicity tests, forecasting, pest resistance; IP production systems)

More Information:
http://www13.ages.at/servlet/sls/Tornado/web/ages/content/C8C0A6C5A58420CEC1256E24006AC48D

Univ. Doz. DI Dr. Sylvia Blümel
Austrian Agency for Health and Food Safety (AGES)
Institute of Plant Health (PGH)
Head of Institute
Spargelfeldstr. 191
A-1226 Wien
Phone: ++43-0-50555-33300
Fax.: ++43-0-50555-33303
contact: pflanzengesundheit@ages.at, sbluemel@ages.at

---

**Time-Table of forthcoming events**

For the Meetings of the IOBC/wprs Working Groups see also the IOBC/wprs homepage: http://www.iobc-wprs.org

01 - 06 August, 2004: 37th Annual Meeting of the Society for Invertebrate Pathology, Helsinki (Finland). – Mark Goettel, e-mail: goettel@em.agr.ca
07 - 12 August, 2004: 12th International Symposium on Insect-Plant Relationships, Berlin (Germany). – Prof. Dr. Monika Hilker, FU Berlin, Biologisches Institut (Angewandte Zoologie / Tierökologie), SIP Conference Bureau, Haderslebener Str. 9, 12163 Berlin, Tel 030/8385-3918, Fax 030/8385-3897, e-mail: sip12@zedat.fu-berlin.de, http://www.biologie.fu-berlin.de/SIP12-Berlin
06 - 10 September, 2004: 9th International Symposium "Ecology of Aphido- 
phaga", Ceske Budejovice, Czech Republic. – Dr. Ivo Hodek, Institute of 
Entomology, Academy of Sciences, Branisovska 31, Ceske Budejovice, 
370 05 Czech Republic. e-mail: hodek@entu.cas.cz, 

16 - 19 September, 2004: IOBC Conference on "Breeding for Plant Resis-

Protection in Fruit Crops", Baselga di Piné, (Italy: Trento). – Jerry Cross, 
Entomology and Plant Pathology, Department, East Malling Research, 
East Malling, West Malling, Kent, ME19 6BJ, UK, e-mail: jerry.cross@emr.ac.uk

26 - 30 September, 2004: IOBC/wprs Working Group "Pheromones and 
other semio-chemicals in integrated production", Baselga di Piné 
(Trentino, Italy). – Peter Witzgall, SLU, Box 44, S-230 53 Alnarp, 

26 - 30 September, 2004: 8th International Symposium on the Biosafety of 
GMOs, Montpellier (France). – Mark.Tepfer@versailles.inra.fr

Insights into Risk Assessment and Registration of Microbial Biocontrol 
Agents in Europe”, Brussels (Belgium). – Dr. Anke Skrobek, School of 
Biological Sciences, UWS Swansea, Singleton Park, Swansea, SA2 
8PP, UK, Tel +44/(0)1792 295362, Fax +44/(0)1792 295447, e-mail: 
a.skrobek@swansea.ac.uk, Web: www.rafbca.com

Dr. Stephan Brückner, Prophyta GmbH, Inselstrasse 12, 23999 Malchow 
/ Poel (Germany). Tel: +49 38425 2324, Fax: +49 38425 2323, e-mail: 
sbrueckner@prophyta.com

30 September - 1 October, 2004: 3rd International Conference on Biological 
Invasions "Neobiota". From Ecology to Control. Bern (Switzerland). – 
Wolfgang Nentwig and Sven Bacher (Bern), Matthew Cock and Rüdiger 
Wittenberg (Delémont), Hansjörg Dietz, Andreas Gigon and Ewald 
Weber (Zürich), www.neobiota.unibe.ch

05 - 09 October, 2004: 2nd European Whitefly Symposium, Cavtat, Croatia. – 
H. Aras, Inst. for Adriatic Crops and Karst Reclm., PO Box 288, 21000 
Split, Croatia. Tel ++385-213-16579, Fax ++385-213-16584, e-mail: 
Helenka@krs.hr. Web: http://www.whitefly.org/EWSII-info.htm.

11 - 13 October, 2004: Working Group "Entomopathogens and Entomo-
parasitic Nematodes", Sub Group Melolontha, Innsbruck (Austria). – Dr. 
Hermann Strasser, Institut für Mikrobiologie, Leopold-Franzens-
Universität, Technikerstrasse 25, 6020 Innsbruck (Austria), Tel: +43 
(0)512 507 6008 (H. Strasser), Fax: +43 (0)512 507 2938, e-mail: 
hermann.strasser@uibk.ac.at, http://bipesco.uibk.ac.at/iobc/ – see also 
Workshop on induced resistance, 2-4 November 2004

The IOBC/wprs working group “Induced resistance in plants against insects and diseases” is organising a workshop dedicated to methods in research on induced resistance, which will be held from 2nd to 4th November 2004 in Delémont, Switzerland. The workshop can host up to 100 participants and is aimed at fostering cross-disciplinary communication and exchange between scientists of different disciplines, including entomologists, plant pathologists and plant physiologists.

The following topics will be addressed:

1. Methods on induced resistance/tolerance against insects
2. Methods on induced resistance/tolerance against diseases
3. General aspects of induced resistance/tolerance

Arrangements have been made in the centre St. Francois in Delémont, which offers meeting room, lunches and dinners and overnight accommodation at a very reasonable price. Additional hotel rooms nearby in Delémont have also been reserved.

For further details and for registration, please visit our website at:

http://www.unine.ch/bota/IOBC/
2005

30 January - 03 February, 2005: International Symposium „Ecology and Management of *Lygus* Plant Bugs“, Ottawa (Canada). – e-mail: Lygus_Symposium@hotmail.com, additional informations in the Web: www.Lygus-Symposium.org

21 - 24 March, 2005: German Congress of Entomology, Dresden. – Dr. U.M. Ratschker, TU Dresden, Forstzooologie, Pierrer Str. 9, 01737 Tharandt, Tel 035203/38-31351, Fax 035203/38-31317, e-mail: dgaae@snsd.de, http://www.snsd.de/ dgaae/

10 - 14 April, 2005: IOBC/wprs WG “Integrated Control in Protected Crops, Temperate Climate”, Naantali (Finland). – Irene Vanninen, Agrifood Research Finland (MTT), Plant Production Research, Plant Protection, 31600 Jokioinen, Finland, tel. +358-3-4188 2580, fax +358-3-4188 2584, e-mail: Irene.Vanninen@mtt.fi

01 - 03 June 2005: IOBC/wprs WG “GMOs in Integrated Production”: “Ecological Impact of Genetically Modified Organisms”, Lleida (Spain). – Dr. Jörg Romeis, Agroscope FAL Reckenholz, Eidgenössische Forschungsanstalt für Agrarökologie und Landbau, Reckenholzstr. 191, 8046 Zürich (Switzerland), Tel: +41-1-3777299, Fax: +41-37777201, e-mail: joerg.romeis@fal.admin.ch

09 - 11 June, 2005: 1st International Conference of Plant Protection and Plant Health in Europe „Introduction and Spread of Invasive Species“, Berlin (Humboldt University). – DPG and BCPC, e-mail: DPG-BCPC@dpg.phytomedizin.org

12 - 16 September, 2005: International Symposium on Biological Control of Arthropods, Davos, Switzerland. – ISBA-Sekretariat: e-mail: ISBCA@bluewin.ch, additional informations: www.cabi-bioscience.ch/

17 - 21 September, 2005: IOBC/wprs General Assembly, Dijon (France). – Dr. Claude Alabouvette, UMR INRA Université de Bourgogne, Microbiologie, Géochimie des Sols (MGS), 17 rue Sully, BP 86510, F-21065 DIJON CEDEX, tel: +33 (0) 380693041, fax: +33 (0) 380693224, e-mail: ala@dijon.inra.fr, Web: http://www.iobc-wprs.org

2006


Next Issue of Profile

The winter-issue of Profile (number 38) will be edited in January 2005. Please send your contributions for this issue of Profile to me at the latest:

3 January, 2005

but don’t hesitate to contact me long before this deadline! Please send your contributions by e-mail (preferably), mail or fax to:

Dr. Horst Bathon
Institute for Biological Control
Heinrichstrasse 243
D-64287 Darmstadt (Germany)
e-mail: h.bathon@bba.de
Tel ++49-6151-407-225, Fax ++49-6151-407290