



INTERNATIONAL ORGANIZATION FOR BIOLOGICAL CONTROL
OF NOXIOUS ANIMALS AND PLANTS (IOBC)

IOBC NEWSLETTER 77

[WWW.IOBC-GLOBAL.ORG](http://www.iobc-global.org)

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PDF files of previous newsletters can be found at www.iobc-global.org

1. EDITORIAL: Did IOBC change its viewpoint concerning Genetically Modified Organisms?

During the latest General Assembly of IOBC-Global in Brisbane, Australia in August 2004, several participants asked me what IOBC's viewpoint was regarding transgenic crops. Some were strongly against IOBC involvement in and use of GMOs, whereas others said that they would like to see IOBC more active in trying to take up GMOs in Integrated Pest Management programmes. After the General Assembly I have reread a number of recent reports on GMOs (see references below) and consulted several specialists in order to find out if IOBC's viewpoint on this issue needed to be reevaluated.

Before summarizing current viewpoints on GMO use for pest management, I refer to an editorial in Newsletter 67 in the Summer of 1998 by Jeff Waage, one of our former IOBC presidents, on “Biological control and transgenic plants”. He wrote, among others: “If transgenic crops are to realise their full potential in crop protection, there is a need to treat them as components of integrated pest management (IPM) systems and to engage the scientists working in these systems. Anyone experienced in crop protection today will be concerned about the presentation of new technologies as stand alone solutions to problems, and in this context transgenic crops are no different than chemical pesticides or resistant crop varieties.

The risk of resistance development to transgenic crops has already been the subject of some discussion. Other areas deserving research, which have recently come to light, are the impact of transgenic crops on the natural enemies of pests, their effect on changing the pest complex on crops (and the emergence of new pest problems requiring IPM solutions), and their overall impact and value in IPM systems on crops like rice, cotton and maize.

IOBC is in a unique position to help new, transgenic crops for crop protection find useful application in agriculture. As an authoritative, impartial and international body of experts on biological control and integrated pest management, IOBC can help small and widely scattered research initiatives to communicate, to share information and to develop common methods and approaches. It can encourage new research initiatives, and help to form links between researchers in developed and developing countries and between the public and private sector. IOBC members from a number of Regional Sections are presently discussing the development of a Global Working Group (WG) on Transgenic Crops in IPM, the objective of which would be to promote and progress scientific research on the impact and role of transgenic crops for crop protection as components of IPM systems around the world.” (end of citation). The creation of this WG on “Transgenic Organisms in IPM and Biological Control” was mentioned in Newsletter 68 (Winter 1998) and the group has been very active since.

Since the initiation of this WG, and particularly in the last two years, a number of reports have appeared providing a large body of information concerning health and environmental effects of GMOs (FAO, 2004; GM Science Review Panel, 2003; ICSU, 2003; Nuffield Council on Bioethics, 1999, 2003; Royal Society, 2003; WHO, 2002). I will summarize some of this information which relates to IOBC activities, and restrict myself to findings for insect resistant Bt transgenic plants that are used on a large scale today.

1. The use of Bt transgenic crops has resulted generally in a strong reduction of insecticide use, positive environmental impacts, a strong reduction of human pesticide poisonings and increased yields.
2. Currently available transgenic crops and foods derived from them have been judged safe to eat, have not shown any verifiable deleterious effects from consumption anywhere in the world, and the methods used to test their safety have been deemed appropriate (GM Science Review Panel, 2003; ICSU 2003; WHO 2002). Not enough is known yet about the long-term effects of transgenic food on health. There might be direct (e.g. improving nutritional quality) and indirect (e.g. reduced pesticide use) health benefits associated with transgenic foods, but these need to be more fully evaluated.
3. Environmental impacts of genetically transformed crops may be either negative or positive depending on how, when and where they are used (e.g. ICSU, 2003; GM Science Review Panel, 2003; Nuffield Council on Bioethics, 1999, 2003). A pre-release environmental risk assessment is therefore needed, as well as post-release ecological monitoring. The usage of transgenic crops may have the following potential effects:
 - a. Gene transfer to wild relatives or conventional crops. Gene flow from GM crops is possible in pollen from open-pollinated varieties crossing with local crops or wild relatives, but whether it will lead to any negative ecological effects is doubted (GM Science Review Panel, 2003)
 - b. Weediness. A cultivated transgenic plant or its hybrid could become established as a weed or invasive species. Also this is considered unlikely because Bt transgenic plants used up till now do not significantly increase fitness of plants in semi-natural habitats (ICSU, 2003; GM Science Review Panel, 2003). Future traits might form a higher risk, so this risk needs to be evaluated case by case.

- c. Trait effects on non-target species. Transgenic traits like the pesticidal toxins expressed by Bt genes may affect non-target species as well as the crop pests they are intended to control. Scientists disagree about how likely this is, and research of the past decade has shown how difficult it is to extrapolate from laboratory studies to field conditions. Possible impacts on non-target species should, therefore, be monitored. Better methods for field ecological studies need to be developed, including better baseline data with which to compare new crops (ICSU, 2003).
 - d. Insect resistance. Use of insect resistant transgenic crops may lead to resistance in the target organisms. Therefore, like in pesticide dominated agriculture, a resistance management strategy is advisable.
4. Transgenic crops may have positive or negative indirect environmental effects through changes in agricultural practices such as pesticide use and cropping patterns. Conventional, pesticide-based agriculture has damaged the environment and reduced biodiversity. Whether the net effect of using transgenic crops will be positive or negative for the environment can only be answered after more comparative analyses of transgenic technologies and current farming practices. Current knowledge suggests that the net effect of using transgenic crops might be positive for the environment, because reduced volume and frequency of pesticide applications is expected to result in less contamination of the environment and less damage to non-target organisms.
 5. The environmental impacts of transgenic organisms should be evaluated using science-based risk assessment procedures on a case-by-case basis depending on the particular species, trait and agro-ecosystem, and should be compared with other agricultural practices. There are no internationally agreed guidelines for assessing the environmental impacts of transgenic organisms yet, and a very important problem is what the appropriate basis for comparison should be: with current agricultural systems and/or with baseline ecological data. An FAO expert consultation (2004; mentioned in FAO, 2004) agreed that the impacts of agriculture on the environment were much greater than the measurable impacts of a shift from conventional to transgenic crops.

FAO (2004) states that thus far, there have been no verifiable reports of transgenic crops causing any significant health or environmental harm, and that some important environmental and social benefits are emerging. Insect resistant Bt crops have delivered large economic benefits in developed and undeveloped countries, and for small and large farmers. Fewer pesticides are used and more toxic pesticides are replaced with less harmful ones. Farm workers and the environment are less exposed to poisonous materials, and beneficial insects and birds are returning to agro-ecosystems and neighbouring areas. However, the lack of observed negative effects so far does not mean that they cannot occur. No technology can be declared risk free. The use of transgenic crops can reduce some environmental risks associated with conventional, pesticide based agriculture, but will also introduce new challenges that must be addressed.

Based on the evidence presented in FAO (2004), GM Science Review Panel (2003), ICSU (2003), Nuffield Council on Bioethics (1999, 2003), Royal Society (2003) and WHO (2002), I propose that IOBC should comply with FAO's statement on biotechnology (FAO, 2000), which reads: "FAO supports a science-based evaluation system that would objectively determine the benefits and risks of each individual GMO. This calls for a cautious case-by-case approach to address legitimate concerns for the biosafety of each product or process prior to its release. The possible effects on biodiversity, the environment and food safety need to be evaluated, and the extent to which the benefits of the product outweigh its risks assessed. The evaluation process should also take into consideration experience gained by national regulatory authorities in clearing such products. Careful monitoring of the post-release effects of these products and processes is also essential to ensure their continued safety to human beings, animals and the environment."

Considering these recent evaluations of GMOs that indicate potential positive effects of some forms of transgenic crops on health, the environment, biodiversity and biological control, IOBC-Global perceives the need to study the possibilities of integration of biological control with transgenic crops, in addition to studies performed by the IOBC-Global WG "Transgenic Organisms in IPM and Biological Control" that are related to the development of an environmental impact assessment, and resistance management".

Coming back to the title of this editorial I can be clear: IOBC does not need to change its viewpoint regarding transgenic crops, and should consider both positive and negative effects of its integration with biological control. IOBC is certainly not blindly supporting use of GMOs. GMOs are in many cases not needed and some GMO activities are considered unethical. Also, it is disappointing that the most interesting forms of GMOs for IPM are not being pursued, such as (1) plants indicating pest/disease attack for timely release of biological control agents, (2) increased production of volatiles that attract natural enemies when a plant is attacked by a pest, (3) adaptation of plant morphology/architecture to improve natural enemy effectivity, and (4) design of plants with easier access for natural enemies to (extra floral) nectar. Monocultures of transgenic crops are certainly not THE solution to develop environmentally friendly and sustainable agriculture. GMOs might even frustrate this development by making the search for new natural enemies and new production systems redundant during the time that they are used. Use of some forms of GMOs can be considered as just a phase in the evolution towards sustainability, which will ultimately have to result in agroecosystems in a landscape ecological setting that are inherently stronger and prevent pests from developing (e.g. Lewis et al., 1997). The inherent strength of such systems will always be based essentially on the presence of biological control agents.

Joop C. van Lenteren,

President IOBC-Global

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(www.int/foodsafety/publications/biotech/en/20questions_en.pdf)

2. NEW WEBSITE: WWW.IOBC-GLOBAL.ORG

In collaboration with Madeleine Bühler (Switzerland), we have developed a new website. The site allows you on each page to move to any Regional Section or Working Group. The site provides, among others, information about:

- IOBC-Global (statutes, membership, regions and working groups)
- The new membership fee system
- Recent newsletters
- The writing partnership
- The internet biocontrol book with regular updates
- Links to meetings

Try the site and tell us what we should do to improve it!

3. FINANCIAL SITUATION IOBC-GLOBAL

At the start of this year, the accounts were transferred from the previous treasurer to the current one, after a check of and agreement about the financial management during the previous IOBC Global Executive Committee by two persons who formed the auditing committee, Dr. H Berger (Austria) and C.Gessler (Switzerland). They are thanked for their auditing and hereby discharged from this function.

The financial situation of IOBC Global is slightly improving after several years with decreasing assets. Due to the new way of paying membership via creditcard and appointments with the publisher of BioControl, we might reach a stable situation this year, and even a slight increase of assets during the coming years. *You can help us to improve the financial situation by paying on time and by acquiring new members: see information on the website.*

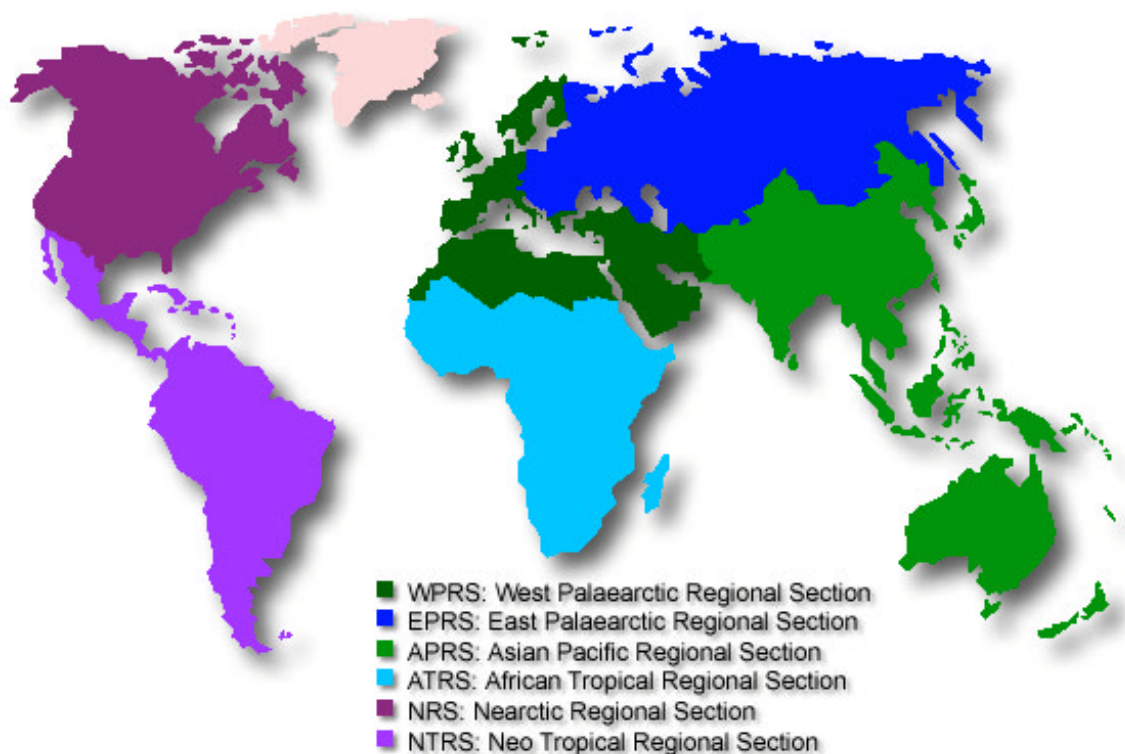
4. MEMBERSHIP FEE SYSTEM AND PAYMENT OF FEES*

We are happy to announce that quite a number of new membership applications have been received during the past months! And we are even more happy to see that these applications come from regions where membership was low. Particularly Latin America is on the increase. The new membership application form, and the extra information on the global website are clearly appreciated. We got a number of positive reactions.

1. Individual membership fee (country listing can be found on www.iobc-global.org):
 - Group C countries: 20 Euro (50% for Region, 50% for Global)
 - Group B countries: 8 Euro (50% for Region, 50% for Global)
 - Group A countries: no fee to be paid
 - Student membership (upon proof of student status): 12 Euro (33% for Region, 67% for Global)
2. Individual membership + Journal of BioControl (normal price 400 Euro/year)
 - Group C countries: 114 Euro (94 Euro for BioControl)
 - Group B countries: 102 Euro (94 Euro for BioControl)
 - Group A countries: 94 Euro (94 Euro for BioControl)
 - Student membership: 106 Euro (94 Euro for BioControl)
3. Supporting and institutional membership; we propose to keep the various regional systems as they are used now, in case of doubt contact Joop.vanLenteren@wur.nl
4. Fees will be adjusted annually according to changes in exchange rate. IOBC Global will propose adjusted fees to the regional sections each year in November and publish this information on our website.

5. Payments can now be made by credit card (Visa and Mastercard) to the treasurer of IOBC Global. We propose that from now on all payments are made directly to IOBC Global. Forms for payment can be found on www.iobc-global.org. ON THESE FORMS, THE FEES ARE MENTIONED IN EURO.
 6. The treasurer will transfer the contribution for regions to each regional treasurer. The global treasurer will contact the regional treasurers in due time to discuss details of checking membership, BioControl subscriptions and transfers of money; the treasurer will provide the regions with a clear schedule defining actions of Global and the Regions.
- * This proposal does not concern the Regional Sections WPRS and NRS as these sections apply higher fees

5. STATE OF AFFAIRS OF REGIONAL SECTIONS OF IOBC



Short information of all the Regional Sections, with a link to their websites, can be found on www.IOBC-Global.org.

During the past months, relationships with the NeoTropical Regional Section and the East Palaerctic Section have been intensified. One of the result of this better relationships is an increasing number of members in the NTRS region. Several national contacts in Latin America are active in acquiring new members. Next year, two IOBC meetings will be organized in this region, one in Colombia and another in Brazil. Dates and agenda's will be published in the IOBC Global newsletter later this year. Also activities in the EPRS have increased. A new Executive Committee will be elected in June 2005, during the General Assembly of EPRS in Budapest, Hungary.

In the other regions, the situation is similar to what was written in the previous newsletter.

6. STATE OF AFFAIRS WORKING GROUPS IOBC-GLOBAL

Short information of all the Global Working Groups, with a link to their websites, can be found on www.IOBC-Global.org.

Most of the 10 IOBC Global working groups are active and have planned meetings in the near future. We have received several proposals for new working groups, and these will be discussed during our next EC meeting. Proposals include: (1) Environmental benefits and costs of releasing exotic natural enemies, (2) Designing agroecosystems that nurture biological control, (3) Unisex (pure female lines) and biological control. We invite you to send other proposals to the Secretary General.

Because of our currently poor financial situation, we had to reduce the support for working groups. However, if a group succeeds in making a good number of new IOBC members, we will be able to support them with the full amount. Most working groups are very active and attract many participants to their meetings, but a rather low percentage of the participants is member of IOBC. We would appreciate working groups to motivate participants to apply for membership!

7. IOBC-GLOBAL SCIENTIFIC MEETINGS AND CELEBRATION OF 50TH ANNIVERSARY

Fifty Years IOBC in the New World: Montreal, Canada, 8-12 May 2005.



In collaboration with IOBC-NRS and the Canadian BioControl Network, we organize a combined meeting on various aspects of biological control. During the “IOBC day” the history, current situation and future developments will be sketched by IOBC members from Europe and North America. This will be followed by two day symposium on “Trophic and Guild Interactions in Biological Control”. The symposium will provide critical review of current knowledge and propose fresh

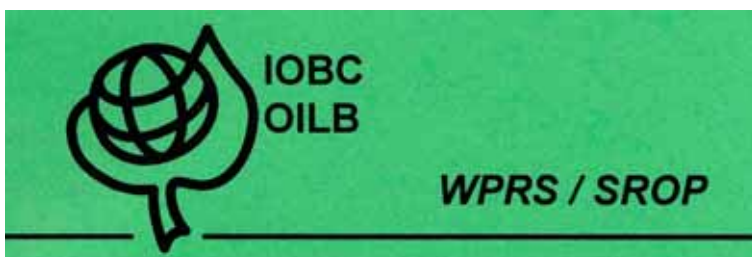
perspectives on trophic and guild interactions in the specific context of biological control.

For more information: www.biocontrol.canada, or via IOBC-Global.org to Region NRS

Fifty Years IOBC in Latin America: August 2006.

IOBC-Global has started discussions with members of the Latin American Region (NTRS) to organize a symposium in August 2006 concurrent with another Latin American meeting that is attended by many biocontrol workers. The aims of this symposium will be (1) to discuss successful cases of biological control in this region, (2) to evaluate the current situation, and (3) to develop a strategy for improvement of research collaboration. News about this symposium will be reported in the newsletter and on the IOBC-Global website.

Fifty Years of IOBC in West Europe and the Mediterranean: Dijon, France, 17-21 September 2005.



The region where IOBC was founded, West Europe, will organize an anniversary meeting in conjunction with the General Assembly of WPRS in Dijon, France from 17-21 September 2005. The programme of this meeting can be found on www.iobc-wprs.org, or via IOBC-Global.org to Region WPRS.

Fifty Years IOBC in Africa and Worldwide: Summer 2008.

In collaboration with the Organization Committee of the 22nd International Congress of Entomology, IOBC-Global will organize a one or more day symposium. The aims of this symposium will be: (1) to

give an overview of successful cases of biological control in Africa, (2) to discuss scientific and applied aspects of biological control research.

Fifty Years of IOBC in Central Europe and Asia

IOBC-Global is discussing opportunities for celebrating its 50 years anniversary in these regions with representatives of the regions. Progress will be reported in the newsletter and on the IOBC-Global website.

Ideas for honorary members

In 2005 - 2008 several festivities are organized to commemorate the start of IOBC 50 years ago. We intend to select and appoint an honorary member for each Regional Section. If you have a good suggestion, please mail the name of the person with a short motivation to the Secretary General (colazza@unipa.it). We prefer to honour “older” persons that have done much work for IOBC and biological control.

8. BIOLOGICAL CONTROL IN AFRICA

Dr. Peter Neuenschwander, who has been working for many years on various biological control projects in Africa, has recently written an important paper that summarizes several of these projects: “Harnessing nature in Africa: Biological pest control can benefit the pocket, health and the environment.” *Nature*, vol 432, 16 December 2004, p. 801-802.

9. IOBC GLOBAL JOURNAL BIOCONTROL



Over the past years *BioControl* has firmly established itself among the top scientific journals in our discipline. This has been achieved through a team effort involving biocontrol scientists submitting excellent manuscripts to their own journal – the IOBC official journal – and the superb devotion of our Associate Editors and all the reviewers in assuring the quality of published papers, as well as a highly professional and supportive publisher (Springer, previously Kluwer).

During the past months there have been several meetings with the publisher concerning the journal. We have reported in the previous newsletter that the number of pages of this year’s issue of *BioControl* will be increased in order to shorten the interval between acceptance and publication. Also, the publisher will put a paper that has been corrected and accepted immediately on its website.

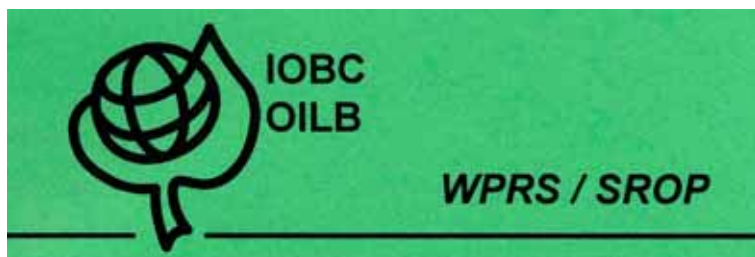
In addition to discussions about the scientific quality of the journal, we are also negotiating a new contract with the publisher which is more profitable for IOBC. We hope to sign a new contract during the coming month.

10. IOBC INTERNET BOOK ON BIOLOGICAL CONTROL

A start has been made with this internet book by summarizing the biological control situation in Latin America. This information will soon be put on our website.

We ask you to support this activity. The first priority is to receive summaries of the actual application of biological control in each country or region. The second priority is to document the history of biological control in each country, including some key references, so that it will be easier for all biocontrol workers worldwide to know what has been done and what is going on at this moment. This will help us to make clear **how important biological control is**.

11. AVAILABILITY OF PROCEEDINGS/BULLETINS IOBC-WPRS WORKING GROUPS



The working groups of WPRS are producing each year 10-20 bulletins containing the proceedings of their meetings. Bulletins that have appeared since 1993 are listed on the WPRS website, and copies of these bulletins can be ordered with a form available on this

website (via www.IOBC-Global.org to WPRS, go to publications etc.). Summaries of the contents of WPRS bulletins can also be found on the WPRS website and in Profile, the newsletter of WPRS.

12. IOBC-GLOBAL WRITING PARTNERSHIP

Since the start of the IOBC writing partnership programme, IOBC assisted in preparing 7 manuscripts for members from non-English speaking countries for the following journals: BioControl (1 paper), Biological Control (2 papers), European Journal of Entomology (1 paper), Journal of Insect Behaviour (1 paper), Bulletin of Insectology (1 paper), and Neotropical Entomology (1 paper). Also a number of contributions for IOBC bulletins were edited.

There were quite a number of applications for this service from non-IOBC members, but we had to inform the applicants that we can only do this very time consuming work for our members.

You can apply for a writing partnership if you are from a non-English speaking developing country and member of IOBC. See our website, IOBC-Global.org, for more details and an application form.

13. NEXT MEETINGS OF EXECUTIVE COMMITTEE IOBC-GLOBAL

- 3-4-5 June 2005, Copenhagen, Denmark
- 9-10 or 17-18 October 2005, Palermo, Italy

The agenda for the June meeting will be published in May on our website IOBC-Global.org, *we appreciate any input from members!*

14. SUMMARIES OF PHD THESES

Whitefly control potential of *Eretmocerus* parasitoids with different reproductive modes. PhD Thesis of Mohammad Javad Ardeh (Iran), Laboratory of Entomology, Wageningen University, February 2005.



Whiteflies (Homoptera; Aleyrodidae) are amongst the key pests of crops throughout the world. Failing and expensive chemical control of whiteflies has led to the development of biological control programs. The aim of my work was to compare the biology and effectiveness of a sexual- versus an asexual population of the hymenopteran parasitoid *Eretmocerus mundus* to control the whitefly *Bemisia tabaci*.

Males reacted to volatile and non-volatile pheromones of conspecific virgin females. However, the sexual- and asexual population did not produce any hybrid female offspring. Therefore, I studied the extent of genetic divergence between them using divergences of two nuclear genomic regions (ITS1 and ITS2) and a mitochondrial region (COII), to investigate whether the sexual and asexual strains could actually represent different species. Constructed trees, by using different clustering methods, and based on the three different sequence regions, were congruent and sexual and asexual populations of *E. mundus* formed two different groups.

Also the influences of asexuality on three fundamental aspects of foraging behavior - host handling behavior, host discrimination, and the competition - between the two populations were studied. No correlation was found between the durations of different phases of host handling, but some components showed significant differences. The actual oviposition had the longest duration of all host-handling behaviors, and was longer on third nymphal instars than on younger ones. I recorded a relatively long time for host feeding, especially for making wounds in the host. Host feeding eventually leads to the death of the host.

Experienced females avoided to oviposit under parasitized hosts, but naïve females did not. In the case of super-parasitism, the outcome shows that neither of the *E. mundus* populations is stronger.

All in all, I found (1) differences between the biology of the asexual and sexual strains of *E. mundus*; (2) a mate finding challenge in the sexual population, (3) genome sequence divergences between the sexual and the asexual populations; (4) no impact on host-handling behavior, host discrimination, and competition between them, and (5) while the sexual population of *E. mundus* produced more progeny, the intrinsic rate of population increase (r_m) did not differ a lot between the sexual and asexual populations. The asexual population of *E. mundus* is considered a good candidate for biological control of *B. tabaci*.

A pdf copy of this thesis can be obtained from mjardeh@hotmail.com

Chemical ecology and integrated management of the banana weevil *Cosmopolites sordidus* in Uganda. PhD Thesis of W. Tinzaara (Uganda), Laboratory of Entomology, Wageningen University, February 2005.



The study investigated whether an infochemical-based trapping system can be used to control the banana weevil *Cosmopolites sordidus* under Ugandan conditions. The weevil responded in an additive way to the combination of the fermented plant tissue and the aggregation pheromone. Factors such as the pest biology, pheromone efficacy, trap parameters, cropping system and environmental factors were found to influence the effectiveness of the pheromone traps. The effects of doubling pheromone trap densities on *C. sordidus* population density and plant damage were negligible. The predators *Dactylosternum abdominale* and *Pheidole megacephala* were found to discriminate between fermenting pseudostem tissue and clean air in a two-choice olfactometer. The study showed that the pheromone could be used to enhance the dissemination of *Beauveria bassiana* for the control of *C. sordidus*. The

next strategy for use of the aggregation pheromone is to further exploit the potential to integrate entomopathogenic fungi and nematodes in the trapping system.

A pdf copy of this thesis can be obtained from william.tinzaara@wur.nl

For information about the following PhD theses, see Global Newsletters 75 and 76 (pdf file on website):

Semiochemicals used by scale insects and their parasitoids: behavioral and chemical ecology investigations. PhD thesis Paolo Lo Bue, Palermo University, Italy; February 2004. *A pdf version of this thesis can be obtained from paololobue@hotmail.com*

Tailoring complexity: Multitrophic interactions in simple and diversified habitats. PhD thesis T. Bukovinszky (Hungary), Wageningen University, Laboratory of Entomology, The Netherlands; June 2004. *A pdf-version of this thesis can be obtained at: Tibor.Bukovinszky@wur.nl*

Semiochemical relationships in the tritrophic system Leguminous plants, *Nezara viridula* (L.) and *Trissolcus basalis* (Woll.). PhD thesis Alessandro Fucarino, Palermo University, Italy; February 2004. *A pdf version of this thesis can be obtained from elfucaro@hotmail.com*

Biological control of plant bugs, *Lygus* spp., PhD thesis T. Haye, Department of Zoology, Christian-Albrechts University, Kiel, Germany, 2004. *The full version of this thesis can be obtained at: http://e-diss.uni-kiel.de/diss_1133*

Parasitoids as Biological Control Agents of Thrips Pests. PhD thesis A.J.M. Loomans (The Netherlands), Wageningen University, Laboratory of Entomology, The Netherlands; September 2003. *A pdf version of this thesis can be obtained from a.j.m.loomans@minlnv.nl*

The entomopathogenic fungus *Metarhizium anisopliae* for mosquito control, PhD thesis E-J. Scholte, Laboratory of Entomology, Wageningen University, The Netherlands, November 2004. *A pdf version of this thesis can be obtained from ErnstJan.Scholte@wur.nl*

Evaluation of *Orius* species for biological control of *Frankliniella occidentalis* (Pergande) (Thysanoptera: Thripidae). PhD thesis M.G. Tommasini (Italy), Wageningen University, Laboratory of Entomology, The Netherlands; September 2003. *A pdf version of this thesis can be obtained from tommasini@crpv.it*

15. RECENT PUBLICATIONS AND BOOKS ON BIOLOGICAL CONTROL AND IPM

If you miss important and recent books on biological control or IPM, send us (colazza@unipa.it) a jpeg picture of the front page, a short summary and information on how and where the book can be ordered. Also, please send us pdf files or reprints of important new biocontrol publications and they will be mentioned in the next issue of our newsletter.

Information about biology and availability of natural enemies

The manual of Biocontrol agents. Third Edition. Editor: L.G. Copping. BCPC, Alton, Hampshire, 2004: 702 pp. ISBN 1 901396355. Info: www.bcpc.org.



This third edition of The Manual of Biocontrol Agents contains many new entries compared to the second edition of 2001, showing that biological control of pests, diseases and weeds is undergoing a strong growth. In this edition there are 112 entries for micro-organisms, 58 entries for natural products, 56 entries for semiochemicals, 20 entries for genes and 127 entries for macro-organisms. The strongest increase in the number of “products” took place in the category of macro-organisms and this, indeed, coincides with the growth of this sector of biological pest control. The manual provides specific information about each of the listed natural enemies / products.

The IPM Practitioner. Annual Directory of Least-Toxic Pest Control Products. For information, contact BIRC, POBox 7414, Berkeley, California, 94707, USA.



The November/December issue of the IPM Practitioner is producing an overview of more than two thousand useful pest control items each year. The directory is compiled by IPM technical experts and is divided in four sections: Insects, Plant Diseases, Vertebrates and Weeds. For each product, specific information is provided, followed by the company name, the product name and information for ordering.

Other recent books and papers on biological control

Biological Control of Invasive Plants in the United States. E. M. Coombs, J. K. Clark, G. L. Piper & A. F. Cofrancesco (Eds). Oregon State University: 476 pp. ISBN 0-87071-029-X. Ordering info at: <http://oregonstate.edu/dept/press/a-b/BioControl.html>



In this volume, leading experts review the discipline of biological control of invasive terrestrial and aquatic plants. Topics addressed include ecology, safety testing, nontarget impacts, and the processes of identifying, introducing, distributing, and monitoring biological control agents. The book also describes 39 target plants in the continental U.S. and 94 agents, including their origin, biology, habitat, impacts, and distribution. The book concludes with information about invasive plants targeted for biological control in the future. This book provides practical, science-based information needed for understanding and using biological control as part of an integrated invasive-plant management strategy.

Discovery of the Parasitoid Lifestyle.

Special feature in Journal of Biological Control Vol 32, No. 1, January 2005



Conclusion: The Chinese discovered the parasitoid lifestyle 600 years before the Dutch.

The Antoni van Leeuwenhoek Symposium (October 2000, The Netherlands) was initially planned to commemorate the discovery of insect parasitism 300 years earlier by the Dutchman van Leeuwenhoek. When asking colleagues from various countries to present a paper on the discovery of insect parasitoids in their country, and while researching this topic, we soon realized that Van Leeuwenhoek might not have been the first to understand the parasitoid life cycle.. Due to the confusing situation in the scientific literature of the past 100 years concerning the discovery insect parasitism, and because of new findings as a result of the Van Leeuwenhoek Symposium, I invited scientists from countries with a long history in entomology (Britain, China, France, Germany, Italy, Japan and The Netherlands) to write a paper about the first publication on insect parasitism in their country. This turned out to be a rather complicated and time-consuming task as the original texts had to be traced and studied. But all this work resulted in quite spectacular results. Insect parasitism in Europe could be pre-dated by more than two decades with respect to conventional wisdom, and it became clear that the Chinese had already discovered parasitism in 1096, so about 600 years earlier than the Europeans. The discovery of insect parasitism has not only resulted in very interesting pure scientific research, but was also extremely important for applied

biology and has led to the highly successful and environmentally-safe use of hundreds of species of parasitoids in biological control today.

In this issue of Biological Control, the papers on the discovery of insect parasitism are presented. Publication of this special volume of Biological Control is particularly appropriate in the year 2005 because the International Organisation for Biological Control of Noxious Animals and Plants (IOBC) is celebrating its 50th anniversary!

Book for children on biological control of whitefly in tomatoes and cucumber



Our colleagues from the IRTA research institute in Spain assisted in producing a book for children on biological control. Publisher Selmar, ISBN 84-607-8045-7. Beautiful drawings tell children how researchers find natural enemies for control of whitefly and, as a result, produce cleaner food. For information, contact Judit.Arno@irta.es or Cristina.Castane@irta.es.

Do you know any other good children books on biological control? Please send us a jpeg of the front page, a summary and book publisher details and we will announce it in the next issue of our newsletter.

For information on the books below: see IOBC Global Newsletter 75 and 76 (pdf file on iobc website).

Integrated Pest and Disease Management in Greenhouse Crops. Editors: Ramon Albajes, M. Lodovica Gullino, Joop C. van Lenteren and Yigal Elad. Kluwer Academic Publishers, Dordrecht, Hardbound, ISBN 0-7923-5631-4, 568 pp.

Crop protection in biological agriculture in Italy. M. Benuzzi and V. Vacante, in Italian. Information about this book can be obtained from M. Benuzzi (benuzzi@intrachem.it).

Ecological Infrastructures: Ideabook on Functional Biodiversity at the Farm Level. Boller, E., Häni, F. & Poehling, H.-M., 2004. ISBN 3-906776-07-7. 230 pp.

Quality Control and Mass Production of Natural Enemies. V.H.P. Bueno (ed.), in Portuguese. Information about this book can be obtained from V. H.P. Bueno (vhpbueno@ufla.br).

Genetics, Evolution and Biological Control. L.E. Ehler, R. Sforza and T. Mateille (eds.). CABI, UK, Wallingford, UK, Hardback, 288 pp., ISBN 0 85199 735 X

Natural Enemies: An Introduction to Biological Control. Ann Hajek. Cambridge University Press, Cambridge, UK, Hardback and Paperback, 378 pp., ISBN 0 521 65295 2

Biological Control in Protected Culture. Editors: Kevin M. Heinz, Roy G. Van Driesche and Michael P. Parrella. Ball Publishing, Batavia, Illinois, Hardbound, ISBN 1-883052-39-4, 552 pp

Quality Control and Production of Biological Control Agents: Theory and Testing Procedures. J C van Lenteren (ed.), CABI, Wallingford, UK, Hardback, 327 pp., ISBN 0 85199 688 4

Biological Control in IPM Systems in Africa. P. Neuenschwander, C. Borgemeister and J. Langewald (eds.), CABI, Wallingford, UK, Hardback, 448 pp., ISBN 0 85199 639 6

Biological Control in Brazil (in Portuguese). Information about this book can be obtained from the senior editor, Prof. dr. J.R.P. Parra (jrpparra@esalq.usp.br).

16. REGIONAL SECTIONS OF IOBC

Information provided below about regional sections of IOBC is limited, most information is regularly updated on our website.

ASIA AND THE PACIFIC REGIONAL SECTION (APRS)

President: Dr. Eizi Yano, National Agricultural Research Center for Western Region, Fukuyama, Hiroshima, 721-8514, Japan. Email: yano@affrc.go.jp



Vice Presidents: Dr. Fang-Hao Wan, Biological Control Institute, Chinese Academy of Agricultural Sciences, Beijing, P.R. China. Email: wanfh@cjac.org.cn
 Dr. Suasa-Ard, Director of the National Biological Control Research Center (NBCRC), Central Regional Center (CRC) at Kasetsart University, Nakhon Pathom, Thailand. Email: agrwis@ku.ac.th
Secretary/Treasurer: Dr. Takeshi Shimoda, Insect Biocontrol Lab., National Agricultural Research Center, 3-1-1, Kannondai, Tsukuba, Ibaraki, 305-8666 Japan. Tel:+81-29-838-8846, Fax:+81-29 838-8837. Email: oligota@affrc.go.jp
Past President: Dr. Rachel McFadyen, Australia. Email: Rachel.mcfadyen@dnr.qld.gov.au

For a meeting organized by this section, see working group Biological control of aphids and coccids

AFROTROPICAL REGIONAL SECTION (ATRS)

President: Dr. James A. Ogwang, Biological Control Unit, Namulonge Agricultural Research Institute, Kampala, Uganda. Email: jamesogwang@hotmail.com
Past President: Dr. H.G. Zimmermann, Agricultural Research Council, Plant Protection Research Centre, Weeds Research Division, Pretoria, South Africa. Email: riethgz@plant2.agric.za
Vice-President: Dr. Charles O. Omwega, International Centre of Insect Physiology and Ecology, Nairobi, Kenya. Email: comwega@icipe.org
General Secretary: Dr. M.P. Hill, ARC PPRI, Private Bag X 134, Pretoria 001, South Africa. Email: riethgz@plant2.agric.za
Treasurer: Dr. J. Ambrose Agona, Post Harvest Program, Kawanda Agricultural Research Institute, Kampala, Uganda. Email: karihave@starcom.co.ug



EAST PALEARCTIC REGIONAL SECTION (EPRS)

President: vacant
Vice Presidents: Dr. S. Pruszyński, Plant Protection Institute, 60-138 Poznań, Mieczurina Str. 20, Poland. Tel:+48-61-679-222. Fax:+48-61-676-301. Email: margot@ior.poznan.pl
 Dr. I. Eke, Budapest, Hungary
General Secretary:
 Dr. E. Sodomov, Russia



A General Assembly of this Region will take place from 7-12 June in 2005 Budapest, Hungary. For information, contact Dr. Pruszyński.

NEARCTIC REGIONAL SECTION (NRS)

President: Robert N. Wiedenmann, Center for Economic Entomology, Illinois Natural History Survey, 607 East Peabody, Champaign IL 61820, USA. Email: rwieden@uark.edu
Vice-President: Nick Mills, University of California, Berkeley, CA 94720, USA. Email: nmills@nature.berkeley.edu
Secretary-treasurer : Stefan T. Jaronski, USDA ARS NPARL, 1500 N. Central Ave., Sidney, MT 59270 USA. Email: sjaronski@sidney.ars.usda.gov
Corresponding Secretary: Susan Mahr, Dept. of Entomology, University of Wisconsin, Madison WI 53706, USA. Email: smahr@entomology.wisc.edu
Past-President: Molly S. Hunter, Department of Entomology, University of Arizona, Tucson AZ, USA. Email: mhunter@ag.arizona.edu
Members-At-Large: Jacques Brodeur, Dept de Phytologie, Université Laval, Sainte-Foy, Quebec, Canada. Email: jacques.brodeur@plg.ulaval.ca; George Heimpel, Department of Entomology, St. Paul, MN 55108, USA. Email: heimp001@tc.umn.edu; Sujaya Rao Department of Entomology, Oregon State University, Corvallis, USA. Email: sujaya@science.oregonstate.edu





In collaboration with IOBC-NRS and the Canadian BioControl Network, a combined meeting on various aspects of biological control will be held from 8-11 May 2005 in Canada. During the “IOBC day” the history, current situation and future developments will be sketched by IOBC members from Europe and North America. This will be followed by two day symposium on “Trophic and Guild Interactions in Biological Control”. The symposium will provide critical review of current knowledge and propose fresh perspectives on trophic and guild interactions in the specific context of biological control. For more information: www.biocontrol.canada, or via IOBC-Global.org to Region NRS

NEOTROPICAL REGIONAL SECTION (NTRS)

President: Dra Orietta Fernandez-LarreaVega. Instituto de Investigaciones de Sanidd Vegetal. Calle110 #514 E/5ta E y 5ta F Playa, Ciudad La Habana, Cuba. Email: oflarrea@inisav.cu

Secretary: Dr.Luis Vazquez Moreno; same address, Cuba. Email: lvazquez@inisav.cu

Treasurer: Dra Esperanza Rijo Camacho; same address, Cuba. Email: erijo@inisav.cu



During the past months, relationships with the NeoTropical Regional Section have been intensified. One of the result of this better relationships is an increasing number of members in the NTRS region. Several national contacts in Latin America are active in acquiring new members. Next year, two IOBC meetings will be organized in this region, one in Colombia and another in Brazil. Dates and agenda's will be published in the IOBC Global newsletter later this year.

WEST PALEARCTIC REGIONAL SECTION (WPRS)

President: Dr. P. Esbjerg, Zoology Section Royal Veterinary and Agricultural University, Frederiksberg, Denmark. Email: peter.esbjerg@ecol.kvl.dk

Vice Presidents: Prof. Dr. R. Albajes, Universita de Lleida, Centre UdI-IRTA, Lleida, Spain. Email: ramon.albajes@irta.es

Dr. J. Huber, Institute for Biological Control, BBA, Darmstadt, Germany. Email: j.huber@bba.de

Prof. Dr. L Tirry, University of Gent, Laboratory of Agrozoology, Department of Crop Protection, Gent, Belgium. Email: luc.tirry@ugent.be

Secretary General: Dr. C. Alabouvette. INRA, Laboratoire de recherches sur la flore pathogène du sol, 17, rue Sully BP 86510, F-21065 Dijon CEDEX, France. Email: ala@dijon.inra.fr

Treasurer: Dr. C. Gessler, Ecole Polytechnique Fédérale de Zurich, Phytomedizin-Pathologie, ETH Zentrum / LFW, Universitätstr. 2, 8092 Zurich, Switzerland. Email: cesare.gessler@ipw.agrl.ethz.ch



This Section of IOBC has always been one of the most active and has an excellent website with all information on working groups, meetings and bulletins: www.iobc-wprs.org. In addition to many working group meetings which will be hold this and next year (see website), WPRS will organize its General Assembly in September 2005.

17. WORKING GROUPS OF IOBC GLOBAL

Information provided below about working groups is limited, most information is regularly updated on our website.

WG ARTHROPOD MASS-REARING AND QUALITY CONTROL

Convenors: Dr. S. Grenier, UMR INRA/INSA de Lyon, Biologie Fonctionnelle, Insectes et Interactions (BF2I), INSA, Bâtiment Louis Pasteur, 20 av. A. Einstein, 69621 Villeurbanne Cedex, France. Tel: +33 (0)4 72 43 79 88. Fax: +33 (0)4 72 43 85 34. Email: sgrenier@jouy.inra.fr. **Dr. N.C. Leppa**, University of Florida, Institute of Food and Agricultural Sciences, Department of Entomology and Nematology, Gainesville, Florida, USA. Email: ncl@gnv.ifas.ufl.edu. **Dr. P. De Clercq**, Laboratory of Agrozoology, Department of Crop Protection, Faculty of Agricultural & Applied Biological Sciences, Ghent, Belgium. Email: Patrick.DeClercq@rug.ac.be

See website for future activities: <http://www.amrqc.org>

WG BIOLOGICAL CONTROL OF APHIDS AND COCCIDS

Chairman: Prof. J.-L. Hemptinne, Laboratoire d'Agroécologie, Ecole nationale de Formation agronomique, BP 87, 31326 Castanet-Tolosan, France. Email: jean-louis.hemptinne@educagri.fr

The next symposium of IOBC WG of Biological Control of Aphids and Coccids will be held in Tsuruoka, Yamagata, Japan, September 25-29, 2005. The final circular can be found in <http://www.net.sfsi.co.jp/shoko-travel/symposium/UntitledFrameset-6.htm>. The deadline for registration and abstract submission will be 31 May. Selected papers of the symposium will be published as the special issues of Population Ecology in 2006. Those who are interested in attending the symposium, please contact Dr. Hironori Yasuda, (biocont@tds1.tr.yamagata-u.ac.jp), Department of Agriculture, Yamagata University, 1-23, Tsuruoka, Yamagata, 997-8555, Japan

WG BIOLOGICAL CONTROL OF CHROMOLAENA ODORATA (SIAM WEED)

Chairman: Dr. R. Muniappan, Agricultural Experimental Station, University of Guam, Mangilao, Guam 96923 USA. Fax: +1-671-734-6842. Email: rmuni@uog9.uog.edu

See website for future activities/newsletter: <http://www.ehs.cdu.edu.au/chromolaena/siamhome.html>

WG BIOLOGICAL CONTROL OF PLUTELLA

Convenors: Dr. A.M. Shelton, Department of Entomology, Cornell University, New York State Agricultural Experimenta Station, 416 Barton Lab Geneva, NY 14456, USA. Tel: +1-315-787-2352. Fax: +1-315-787-2326. Email: ams5@cornell.edu. **Dr. A. Sivapragasam**, Strategic, Environment and Natural Resources Centre, MARDI, Kuala Lumpur, Malaysia. Email: sivasam@mardi.my. **Dr. D.J. Wright**, Department of Biology, Imperial College at Silwood Park, Ascot, Berkshire, UK. Email: d.wright@ic.ac.uk

See website for future activities: <http://www.nysaes.cornell.edu/ent/dbm/>

WG BIOLOGICAL CONTROL OF WATER HYACINTH

Chairman: Dr Martin Hill, Agricultural Research Council, Plant Protection Research Centre, Weeds research Division, Private bag X134, Pretoria 0001, South Africa. Tel: +27 12329-5743. Fax: +27 12329-3278. Email: rietmh@plant2.agric.za

WG EGG PARASITIDS

Convenors: Prof.dr. F. Bin, Department of Arboriculture and Plant Protection, University of Perugia, Borgo XX Giugno, 06121 Perugia, Italy. Tel: +39-075-585-6030. Fax: +39-075-585-6039. Email: fbn@unipg.it. **Dr. E. Wajnberg**, Ecologie Comportementale, I.N.R.A., Sophia Antipolis, France. Email : wajnberg@antibes.inra.fr. **Dr Guy Boivin**, Research Station, Agriculture Canada, St-Jean-sur-Richelieu, Québec, Canada. Email: boiving@agr.gc.ca

WG FRUIT FLIES OF ECONOMIC IMPORTANCE

Chairman: Dr. B.A. McPheron, Dept. Entomology, 501 ASI Bldg., Pennsylvania State University, Univ. Park, PA 16802, USA. Tel: +1-814-865-3088. Fax: +1-814-856-3048. Email: bam10@psu.edu

WG IWGO – OSTRINIA AND OTHER MAIZE PESTS (BY H. BERGER)

Convenors: Ulrich Kuhlmann; CABI-BioScience; Head Agricultural Pest Research CABI Bioscience Switzerland Centre, Delémont; Switzerland, Email: u.kuhlmann@cabi.org. **C. Richard Edwards**; Purdue University; Dep. of Entomology; Indiana; USA; Email: richedwards@entm.purdue.edu. **Harald K. Berger**; AGES, Spargelfeldstraße 191; 1226 Wien; Austria; Tel.: # 43 /664/56-42-885. Fax: # 43/1/732-16-2106. Email: harald.berger@ages.at.

All relevant data, reports and future meetings are published on the IWGO website:
<http://www.iwgo.org>

GLOBAL WG ON TRANSGENIC ORGANISMS IN IPM AND BIOCONTROL

Convenors: Dr. Angelika Hilbeck, Swiss Fed. Inst. of Technology, Geobotanical Institute, Zurichbergstr. 38, CH-8044, Zurich. Tel: +41 (0) 1 632 4322. Fax: + 41 (0) 1 632 1215. Email: angelika.hilbeck@env.ethz.ch. **Dr. Salvatore Arpaia**, Italy. Email: arpaia@trisaia.enea.it. **Dr. Nick Birch**, UK. Email: n.birch@scri.sari.ac.uk. **Dr Gabor Lovei**, Denmark. Email: gabor.lovei@agrsci.dk;

For more information goto: www.gmo-guidelines.info or contact evelyn.underwood@env.ethz.ch.

18. MEETINGS ON BIOLOGICAL CONTROL AND IPM

Please consult the IOBC-WPRS website (www.iobc-wprs.org) for future meetings on biological control. The IOBC-WPRS newsletter PROFILE can also be found at this website and contains a lot of information about working group activities and meetings.

Newsletter contributions: We would like to thank all members who provided items for this edition of the IOBC Newsletter. If you have not previously sent anything, please consider doing so. Remember that this is your opportunity to let others know what is going on in biological control. Take a few minutes and email items concerning biological control to Stefano Colazza (Colazza@unipa.it), so they can be included in the next issue.

Any comments on this newsletter are welcome. Do not hesitate to contact us if there is any further information on biological control that you would like to see here.

Editors: Joop C. van Lenteren and Stefano Colazza, IOBC Global, April 2005