

**Organización Internacional para el Control Biológico de Animales y Plantas
Perjudiciales (IOBC)**
**Organização Internacional para o Controle Biológico de Animais e Plantas
Nocivos (IOBC)**
**International Organization for Biological Control of Noxious Animal and Plants
(IOBC)**

Sección Regional Neotropical (SRNT)
Seção Regional Neotropical (SRNT)
Neotropical Regional Section (NTRS)



Newsletter of the IOBC - NTRS N° 20
June 2009

President: Prof. dr. V. H. Paes Bueno
 Department of Entomology, University of Lavras
 P.O. Box 37, 37200-000 Lavras MG, Brasil
 email: vhpbueno@ufla.br
Treasurer: Dr. Luis Devotto
 Instituto de Investigaciones Agropecuarias (INIA)
 Av. Vicente Méndez 515, Chillán, Chile
 email: ldevotto@inia.cl
General Secretary: Dr. G. Cabrera Walsh
 USDA/ARS/South American Biological Control
 Laboratory, Bolivar 1559, -B1686EFA-, Hurlingham,
 Bs. As., Argentina
 email: gcabrera@speedy.com.ar

Vicepresident: Dra. Maria Manzano
 Email: mrmanzanom@palmira.unal.edu.co
Vicepresident: Dra. Mary M. Whu Paredes
 E-mail: mwhu@senasa.gob.pe
Vicepresident: Dr. Leopoldo Hidalgo
 Email: lhidalgo@censa.edu.cu
President Elect: Prof.dr. F. Consoli,
 Email: fconsoli@esalq.usp.br
Former President: Dra. Raquel Alatorre, Mexico.
 Email: alatoros@colpos.mx

CONTENTS, NEWSLETTER NO. 20 – JUNE 2009

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Editorial 2. The IOBC/NTRS webpage, and other friendly webpages 3. Membership: instructions and regulations 4. IOBC global writing partnership 5. IOBC Global work groups 6. NTRS Regional Representatives 7. Courses, workshops and congresses 8. Current research at the NTRS 9. NTRS news and updates 10. IOBC online Biocontrol book 11. BioControl, the IOBC journal | <ol style="list-style-type: none"> 12. Recent biocontrol publications and books 13. Publicity and promotions 14. Acknowledgements <p>Anex I. Updated NTRS members Directory</p> <p>Anex II. NTRS members synthetic CVs</p> |
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1. EDITORIAL: BIOLOGICAL CONTROL VS. ACCESS AND BENEFIT-SHARING OF GENETIC RESOURCES

(Taken from IOBC global newsletter No. 85- May 2009)

The Convention on Biological Diversity (CBD), signed in 1992, promotes the equitable and respectful sharing of access and benefits to genetic resources. A primary goal is to protect genetic resources that potentially have commercial value for biomedical and agricultural applications. Parties to the Convention on Biological Diversity have agreed to develop an international Access and Benefit-Sharing (ABS) protocol that will be effective in 2010. In the mean time, several countries have restricted access to their often unexplored biological resources. Government policies and regulations on biological diversity can sometimes have critical disincentives to biological control. Research on biological diversity, discovery and exportation of new biocontrol agents are now on hold in some countries. The ABS is currently appearing as a constraint to developing and implementing appropriate biological control programmes worldwide. There is a need to reach an international agreement on ABS that would be acceptable to all parties. Attention must be given to the economic, environmental, social and cultural aspects related to the exploitation of biological resources. The ABS issue has recently captured the attention of the biological control community and in October 2008 IOBC Global put together a Commission on Biological Control and Access and Benefit-Sharing. Through this commission, IOBC Global shall provide scientific advice to oversee and advise the design and implementation of an ABS protocol that ensures practical and effective arrangements for the collection and use of biological control agents. The mandate of the Commission and its period of activity are provided in the Terms of Reference which are available on the IOBC web site. Members of the Commission are Jacques Brodeur (convenor), Barbara Barratt, Franz Bigler, Karel Blockmans, Matthew Cock, Fabian Haas, Joop van Lenteren, Peter Mason and Jose Parra. The mission of the IOBC Commission will be realized by:

- 1) Increasing the scientific knowledge in the area of biological control and access and benefitsharing;
- 2) Documenting the potential for negative consequences of adopting strict regulations about access and benefit-sharing of biocontrol agents;
- 3) Transferring the knowledge concerning the question of access and benefit-sharing to the scientific community, stakeholders and international parties;
- 4) Developing linkages/agreements with international partners;
- 5) Promoting the development and application of new international conventions on biological control and access and benefit-sharing which respect the Convention on Biological Diversity.

We, as biological control scientists and practitioners, have to find a convincing way to talk about the ABS issue to people and National governments around the world. They usually know little about the value of biological control and how it is delivered to our communities. The issues associated with ABS raised by the CBD are complex and could be controversial. The IOBC organization is a key body to providing the necessary scientific knowledge and to communicating that knowledge to the national and international decision-making parties. Fortunately, unlike some other parties exploiting genetic resources, biological control scientists and practitioners have a reputation of high standards in terms of ethical conduct when conducting biological control

programs, from surveying and collection in different countries to the introduction or commercialization of new biological control agents.

In late December 2008, the IOBC Commission was approached by the FAO Secretariat of the Commission on Genetic Resources for Food and Agriculture. This entity is dedicated to the development of policies related to biodiversity for food and agriculture. This is also the Commission which negotiated the International Treaty on Plant Genetic Resources for Food and Agriculture, so far the only ABS functional sector-specific system that is operational at the global level. Also of interest to us, they have undertaken seven sector-specific studies on genetic resources, including one on Invertebrates for Biological Control. Given that IOBC and FAO were planning to conduct similar analyses and that we share the common goals of achieving food security and sustainability, we decided to join forces and cooperate on the ABS issue. There is a long-standing tradition of cooperation between both FAO and IOBC, for instance the one leading to the adoption in 1997 of the Guidelines to ensure the safety of biological control introductions as an International Standard for Phytosanitary Measures. With regards to ABS, IOBC brings the scientific expertise while FAO contributes their expertise in policy-making, as well as financial support to conduct the activities of the IOBC Commission. Alvaro Toledo from FAO has become an ‘observer’ on our Commission. The IOBC Commission is finalizing a report to FAO on biological control and ABS. One purpose is to have a strong, well-documented paper that represents the position of IOBC. The document presents the nature and intent of biological control, describes and makes distinctions between ways of conducting biological control (classical, augmentative,...) and provides examples of situations related to ABS issues. The report also documents case studies describing how regulations favoured or not the search for and access to new candidate species for biological control agent worldwide. The Commission has also worked on recommendations on how biological control should be managed by governmental and non-governmental organizations, as well as the biological control industry, within the future ABS protocol. Finally, M. Cock and J. van Lenteren are currently working on two exhaustive lists of natural enemies that have been used for classical and augmentative biological control. These lists are valuable tools not only in the context of the present work of the Commission but also to document aspects of the history and outcome of biological control. The lists will eventually be made available to the biological control community. The IOBC Commission further accomplishes its mission by participating in and contributing to international workshops/conferences on ABS. As mentioned above, the CBD has established a roadmap to develop an International ABS Protocol that will be effective in 2010. The IOBC Commission is dedicated to improve the situation for biological control within the future ABS protocol. Members of the IOBC Commission have jumped into the debate and started to present the case for biological control on a number of national and international forums. For those of you who would like to learn more about the ABS issue, I would recommend a recent publication (2008) by the Secretariat of the Convention on Biological Diversity entitled “Access and benefit-sharing in practice: Trends in partnerships across sectors” (CBD Technical series No. 38). The document is available on line at www.cbd.int. The report from the IOBC Commission on biological control and ABS will also soon be available on line at www.iobc-global.org. The activities of the IOBC Commission on Biological Control and Access-Benefit Sharing have so far greatly benefited from the support of IOBC Global and FAO.

I thank all my colleagues from the Commission for their contribution, a special appreciation to M. Cock who took the responsibility of writing the report.

Jacques Brodeur
President IOBC Global
Université de Montréal, Québec, Canada

2. THE IOBC/NTRS WEBPAGE, AND OTHER FRIENDLY WEBPAGES

IOBC/SRNT: The IOBC-NTRS webpage is active right now at:

www.lef.esalq.usp.br/iobc-ntrs

At the moment it is in Portuguese and English, but the Spanish version is under construction.

We need your contributions to make it work, so they are more than welcome: they are **STRONGLY ENCOURAGED!**

The articles of this and other newsletters will also be uploaded.

Chilean biocontrol website: we also recommend you visit the website www.controlbiologicochile.cl, open to all. We are planning to update it every week. The page administrator is Hugo Rodríguez, journalist from CTCB.
Regards; Marcos Gerding, Chile, September 2008

World-wide database of insect cultures available for distribution
The Canadian Forest Service, Natural Resources Canada, is sponsoring the establishment of a comprehensive world-wide listing of producers who are willing to sell or donate live insects. We are currently soliciting the enrolment of insect producers. This database is intended to provide those in need with a current source for accessing live insect cultures and to give producers the opportunity to expand their client base. Our database is in the early stages of development, but will become more useful as additional insect producers decide to participate and have their cultures listed. We hereby solicit your enrolment and encourage you to make your colleagues and peers aware of the database:

www.insect.glf.cfs.nrcan.gc.ca

Contact: Peter Ebling, email: pebling@nrcan.gc.ca

3. MEMBERSHIP FEES

The IOBC fees for the NTRS for the 2008-2009 period remain as last year at 20 US\$.

We remind you that becoming a member would give you, among other benefits:

- Free access to specific information at the IOBC internet site
- Free access to online IOBC publications
- Free participation in the Global Writing Partnership
- Important discounts for proceedings, workshops and meetings
- 75% discount in publication fees for the journal biocontrol (the successor of the prestigious ENTOMOPHAGA)
- Discounts on the journal Biocontrol, and Science and Technology

For more information please visit our website: <http://www.unipa.it/iobc/>

As for Institutional memberships, IOBC Global is currently re-evaluating membership fees, however, in the mean time, it is Euros 200, and it includes a BioControl subscription.

4. IOBC-GLOBAL WRITING PARTNERSHIP

For starting scientists not born in an English speaking country, it appears often difficult and frustrating to prepare an article for a leading biological control journal. Some "starters" either have easy access to an English speaking colleague, or have funds available for translation and correction, but others do not have these possibilities.

Our concept is to help young IOBC members (<35 years) from developing countries where English is not the first language and who are the first author of an article, one time with the writing of a research paper. If you need help or if would like to assist one time in this IOBC partnerships for writing articles, please contact

Joop.vanLenteren@wur.nl

5. WORKING GROUPS OF IOBC GLOBAL

Only a list and contact information are provide for the IOBC work groups below, for a full account of their latest activities and plans see IOBC Global Newsletter Issue 85 – May 2009

As we have expressed many times, Work Groups are the heart of the NTRS. The WGs have the objective of bringing together three or more NTRS members who share a common interest in a field of biocontrol to exchange ideas, experience, literature and research projects. Once we organize a group we will propose a monthly appointment to chat and interact more directly. To begin with I propose the creation of the following WG: Biocontrol of white flies, Egg parasitoids, Entomopathogens, Mass rearing and quality control, Biocontrol agents trade, Biocontrol and conservation, Biocontrol of Crambidae. However, feel free to suggest different WG, according to your experience or field of interest.

I invite you to send me an e-mail specifying your WG of choice and willingness to coordinate it.

You are all welcome to take part in the NTRS's WGs.!!!

Maria Manzano

mrmanzanom@palmira.unal.edu.co

WG ARTHROPOD MASS-REARING AND QUALITY CONTROL

Dr. P. De Clercq, Laboratory of Agrozoology, Department of Crop Protection, Faculty of Bioscience Engineering, Gent University, Belgium. Email:

Patrick.DeClercq@ugent.be; **Dr. T. Coudron**, USDAARS, Columbia, Missouri, USA.

Email: coudront@missouri.edu

Membership in the Working Group is free, but members are strongly encouraged to join IOBC. Membership in the AMRQC Working Group is open to all individuals and institutions, both private and public, active in the field of arthropod mass rearing and

quality control. Members will be included in the mailing list and informed about events organized by the Working Group. Currently some 100 persons take part in this WG. Future activity: The next workshop of the AMRQC group is projected to be in 2010 in Vienna (Austria) in co-organisation with the International Atomic Energy Agency. See website for details on future activities and for proceedings of meetings:

www.amrqc.org

WG ECOLOGY OF APHIDOPHAGA

Convenor: IOBC Contact: **Dr. J.P. Michaud** (USA) Associate Professor of Entomology, Kansas State University Agricultural Research Center-Hays 1232 240th Ave. Hays, KS, 67601. Email: jpmi@ksu.edu; ipmi@ksu.edu. Co-convenors: Kris Giles, Nick Kavallieratos, Carlo Ricci, Wolfgang Weisser.

Current Membership is 112. This WG does not produce a newsletter but maintains a website (see below). The WG organizes a meeting every 3 years.

See website for future activities: www.aphidophaga.org

Next meeting: Perugia, Italy, fall of 2010

WG BIOLOGICAL CONTROL OF CHROMOLAENA ODORATA (SIAM WEED)

Convenor: Dr. Costas Zachariades, ARC-PPRI, Private Bag X6006, Hilton, 3245 South Africa; Tel 033-3559418, cell 0833152100, fax 033-3559423. Email:

ZachariadesC@arc.agric.za

Some 120 persons take part in the activities of this WG.

See website for future activities/newsletter:

<http://www.ehs.cdu.edu.au/chromolaena/siamhome.html>

Latest news: October 2010, Nairobi, Kenya: 8th International Workshop on Biological Control and Management of *Chromolaena odorata* and Other Eupatorieae: this workshop is organized under the auspices of the IOBC, and the 8th workshop will be hosted by CABI.

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

Future activity: the WG next meeting is scheduled for 2011 in Thailand.

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

WG BIOLOGICAL CONTROL OF WATER HYACINTH

Chairman: **Dr Martin Hill**, Department of Zoology and Entomology, Rhodes University, P.O. Box 94, Grahamstown, 6140, South Africa. Email: m.p.hill@ru.ac.za

Some 50 persons are active in this WG.

Website: www.waterhyacinth.org

WG EGG PARASITIDS

Convenors: **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; **Dr. F.L. Cônsoli**, ESALQ/USP, Piracicaba, Brasil. Email : fconsoli@esalq.usp.br

Newsletter: Egg Parasitoid Newsletter

Website: <http://www.lef.esalq.usp.br/iobc-epwg>

WG BENEFITS AND RISKS ASSOCIATED WITH EXOTIC BIOLOGICAL CONTROL AGENTS

Convenors: Dr. P. Mason & Dr. G. Heimpel. Contact: Dr. Peter Mason, Agriculture and Agri-food Canada, Neatby Building Central Experimental Farm, 960 Carling Avenue, Ottawa, Ontario, K1A 0C6 Canada. Email: masonp@agr.gc.ca

A first meeting of this new WG is planned for 2009.

WG IWGO – OSTRINIA AND OTHER MAIZE PESTS

Convenors: Dr. U. Kuhlmann; CABI-BioScience; Head Agricultural Pest Research CABI Bioscience Switzerland Centre, Delémont; Switzerland, Email: u.kuhlmann@cabi.org. **Dr. C. R. Edwards;** Purdue University; Dep. of Entomology; Indiana; USA; Email: richedwards@entm.purdue.edu. **Prof. Dr. Wang Zhenying;** Institute of Plant Protection of the Chinese Academy of Agricultural Sciences, Beijing, P.R. China, Email: zywang@ippcaas.cn

Some 350 persons take part in the activities of this WG. The International Working Group on *Ostrinia* and other Maize Pests (IWGO) is a well-established, large Global-IOBC Working Group, which deals with integrated pest management options for all maize insect pests and pest resistance problems.

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

More than 100 persons take part in the activities of this WG. The WG operates as an umbrella to link funded projects and people interested in this topic area.

Newsletters: E-newsletters are sent out periodically by the WG co-convenors to members of the umbrella of projects linked to the WG.

Website: http://www.unipa.it/iobc/view.php?pg=iobc_global&id=9

6. REGIONAL REPRESENTATIVES OF THE NTRS

WE ARE LOOKING FOR VOLUNTEERS TO COVER THE POST OF REPRESENTATIVES FOR THE NTRS.

The Regional Representatives of the NTRS represent the Directive Board (DB) of the IOBC-NTRS in her/his country, and has the following duties:

- Send information for the biannual Newsletter (see annex below)
- Promote the goals of the organization through an active presence in scientific séances by means of communications, posters, brochures, etc.
- Promote memberships and charge the societal fees in the name of the NTRS.
- Inform the DB in December about the annual activities.

Information required from a Representative of the NTRS

- News on meetings, congresses, courses and symposia related to BC (name of the event, date and location, contact information)
- Brief summaries (ca. 60 words) on such meetings, and information on how to get proceedings or abstract books.
- Prizes and honours awarded to our members.
- New books, and book reviews.
- Ads on biological material wanted and offered.
- Brief (30 words) summaries of new biocontrol projects and other pertaining information.

This designation will be renewed every 1st of January, if you are willing.

7. COURSES, WORKSHOPS AND CONGRESSES

Production and use of entomopathogens and antagonists for control of agricultural pests

Instituto de Investigaciones de Sanidad Vegetal. (INISAV). Ministerio de la Agricultura. CUBA. 15 - 19 de June, 2009

Supported by: CATEC-INISAV-CNSV- CPA-UBPC "Vivero de Alamar"

Coordinator: Dra María Elena Márquez Gutiérrez

mmarquez@inisav.cu

[http:// www.inisav.cu](http://www.inisav.cu)

Address: Calle 110 No 514 e/ 5ta B y 5ta F. Playa. CP 11600. Ciudad de la Habana, Cuba

· XXXVI Congreso SOCOLEN

The entomological society of Colombia. Medellín, July 29, 30 and 31, 2009. Hotel Intercontinental

socolen.bustillo@gmail.com

Website: <http://www.socolen.org.co/portal/>

• XIII Congreso Forestal Mundial

Thirteenth international Forestry Congress. 18 - 23 October, 2009, Buenos Aires, Argentina

<http://www.wfc2009.org/>

More information on the congress and workshop agenda at:

www.IOBC-WPRS.org

IPMnet News at: http://www.ipmnet.org/IPMNews/main_page.html

Agenda for the rest of the year:

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22 - 25 June, 12th European Meeting of the IOBC/WPRS Working Group "Insect Pathogens and Insect Parasitic Nematodes"

Lugar: Pamplona, Spain.

Heike Kuhlmann info@iobc-pamplona-2009.com

Local organizer: Primitivo Caballero pcm92@unavarra.es

29 June - 02 de July, IOBC/WPRS Working Group on "Integrated Protection of Stored Products"

Lugar: Molise, Campobasso, Italy.

Convenor: Christos Athanassiou ceaz2atx@noc.aua.gr - athanas@aua.gr

Local organizer: Prof. Pasquale Trematerra trema@unimol.it

06 - 09 September, 1st Meeting IOBC/WPRS Study Group "Benefits and Risks Associated with Exotic Biological Control Agents Harmonia axyridis and Other Invasive Ladybirds"

Lugar: Engelberg, Switzerland.

Heike Kuhlmann info@iobc-harmonia-meeting.com

Marc Kenis m.kenis@cabi.org

06 - 11 September, IOBC/WPRS Working Group "Integrated Control in Protected Crops, Mediterranean Climate"

Lugar: Crete, Greece.

Dr. Cristina Castañé crisrina.castane@irta.es

Dr. Dionyssios Perdikis dperdikis@aua.gr

07 - 10 September, 2ND INTERNATIONAL CONFERENCE ON NOVEL AND SUSTAINABLE WEED MANAGEMENT IN ARID AND SEMI-ARID AGRO-ECOSYSTEMS, Santorini, GREECE. Contact: Organizing Committee, Economou@aua.gr. www.ewrs.org/arid/default.asp.

08 - 10 September, 8TH INTERNATIONAL CONFERENCE ON WEED BIOLOGY, Dijon, FRANCE. Contact: J. Gasquez, UMR Biol. et Gestion des Adventices, BP 86510, Cedex 21065 Dijon, FRANCE. Gasquez@dijon.inra.fr. www2.dijon.inra.fr/bga/conference2009.

30 September - 03 October, General Assembly of IOBC-WPRS

Lugar: Agadir, Morocco.

Prof. Dr. Mohamed BESRI m.besri@iav.ac.ma**04 - 07 October**, Meeting of the IOBC/WPRS Working group “Integrated Protection of Field Vegetables”

Lugar: Dubrovnik, Croatia

Dr. Rosemary Collier rosemary.collier@warwick.ac.uk**07 - 09 October**, IOBC/WPRS Working Group "Pesticides and Beneficial Organisms"

Lugar: Dubrovnik, Croatia.

Dr. Božena Barić labecotox@cra.wallonie.be

Pesticides and Beneficial Organisms (pdf, 46 kb)

13 - 15 October, EPPO CONFERENCE ON COMPUTER AIDS FOR PLANT PROTECTION, Istanbul, TURKEY. See: tinyurl.com/opnncp.**18 - 23 October**, XIII Congreso Forestal Mundial

Lugar: Buenos Aires, Argentina

e-mail: info@cfm2009.org

Tel: ++ 54-11-4349-2104/2204/2195

01 - 04 October, IOBC/WPRS Working Group “Integrated Protection and Production in Viticulture”

Lugar: Staufen im Breisgau, Germany.

e-mail: [Agnès Calonnec calonnec@bordeaux.inra.fr](mailto:Agnès_Calonnec@bordeaux.inra.fr)**09 - 12 November**, 5TH INTERNATIONAL BEMISIA WORKSHOP, Guangzhou, P.R. CHINA. Contact: B.L. Qiu, fax: 86-20-852-80292. BaoLiQiu@yahoo.cn. www.ibws.org.

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October, 8TH INTERNATIONAL WORKSHOP ON BIOLOGICAL CONTROL AND MANAGEMENT OF *Chromolaena odorata* AND OTHER EUPATORIEAE; and WORKSHOP ON MANAGEMENT OF *Parthenium hysterophorus*, Nairobi, KENYA. Contact: C. Zachariades, ARC-PPRI, Private Bag X6006, Hilton, 3245, SOUTH AFRICA. ZachariadesC@arc.agric.za. Fax: 27-33-355-9423.

8. BIOCONTROL PROYECTS IN THE NTRS

(Translation of every abstract from its original in Spanish or Portuguese is very time consuming, so for most projects we will provide title and contact information. Non-Spanish speaking members can request full translations to Willie Cabrera, gcabrera@speedy.com.ar. The full versions can be found in the Spanish/Portuguese version of this newsletter.)

• LIFE HISTORY OF A NEW SPECIES OF THE GENUS *Balaustium* (Acari: Erythraeidae) UNDER CONTROLLED CONDITIONS

Karen Muñoz C., Luz Fuentes Q., Fernando Cantor
Universidad Militar Nueva Granada, ecologia@umng.edu.co

• POPULATION INCREMENTS OF A PREDATORY MITE OF *Tetranychus urticae* (ACARI: TETRANYCHIDAE) UNDER CONTROLLED CONDITIONS

Jessica Morales, Diana Pérez, Laura Muñoz, Alexander Bustos R, Daniel Rodríguez, Fernando Cantor y José Ricardo Cure.
Universidad Militar Nueva Granada, ecologia@umng.edu.co

• BIOASSAY TO EVALUATE PESTICIDES ON *Amblyseius* sp. (Acari: Phytoseiidae) ADULTS UNDER SEMI-CONTROLLED CONDITIONS

Jennifer J. Forero, Zulma P. Argüelles, Fernando Cantor R., Daniel Rodríguez
Investigadora C.I. Floramérica Ltda , zulma_arguelles@americaflor.com; Universidad Militar Nueva Granada, ecologia@umng.edu.co

• EFFECT OF THE PARASITOID *Encarsia Formosa* (Hymenoptera: Aphelinidae) ON A POPULATION OF *Trialeurodes vaporariorum* (Hemiptera: Aleirodyidae) IN A COMMERCIAL GREENHOUSE TOMATO CROP

Diana Pérez, Fernando Cantor, Daniel Rodriguez, José Ricardo Cure
Universidad Militar Nueva Granada, ecologia@umng.edu.co.

• LIFE CYCLE AND POPULATION PARAMETERS OF *Ceranisus nigrifemora* (HIMENÓPTERA: EULOPHIDAE).

Alexander Escobar, Alexander Bustos, Fernando Cantor, José Ricardo Cure, Luz Stella Fuentes
Universidad Militar Nueva Granada, ecologia@umng.edu.co, Investigadora CIAA, Universidad Jorge Tadeo Lozano, luz.fuentes@utadeo.edu.co.

• DISPERSION RADIUS OF *Encarsia formosa* (Hymenoptera: Aphelinidae) ON *Trialeurodes vaporariorum* (Westwood) (Hemiptera: Aleirodyidae) IN GREENHOUSE TOAMTO

Diana Elizabeth Pérez, Fernando Cantor, Daniel Rodríguez y José R. Cure,
Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **COMBINED ACTION OF SEXUAL PHEROMONES AND *Apanteles gelechiidivoris* (HYMENOPTERA: BRACONIDAE) FOR THE CONTROL OF *Tuta absoluta* (LEPIDOPTERA: GELECHIIDAE) ON TOMATO CROPS**

Laura Muñoz, Jessica Morales, Fernando Cantor, Daniel Rodríguez, José R. Cure
Universidad Militar Nueva Granada. Bogotá – Colombia. E-mail:
ecologia@umng.edu.co

• **SIMULATION MODEL FOR A PREDATORY MITE COLONY: I. HOST PLANT (*Phaseolus vulgaris*)**

Alexander Bustos, Daniel Rodríguez, Fernando Cantor, José Ricardo Cure
Universidad Militar Nueva Granada. Bogotá – Colombia. E-mail:
ecologia@umng.edu.co

• **EVALUATION OF THE SIMULTANEOUS USE OF TWO PREDATORY MITES FOR THE CONTROL OF *Tetranychus urticae* KOCH (ACARIFORMES: TETRANYCHIDAE) ON ROSES**

Paola Tello, Fernando Cantor y Daniel Rodríguez
Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **EVALUATION OF THE INTERACTIONS BETWEEN *Phytoseiulus persimilis*, AND *Amblyseius californicus* IN THE PRESENCE AND ABSENCE OF *Tetranychus urticae* (ACARI: TETRANYCHIDAE).**

Angélica Argüelles, Natali Plazas, Fernando Cantor, Alexander Bustos, Daniel Rodríguez, José Ricardo Cure
Universidad Militar Nueva Granada, ecologia@umng.edu.co.

• **EVALUATION OF THE ESTABLISHMENT OF *Amblyseius cucumeris* (PARASITIFORMES: PHYTOSEIIDAE) FOR THE CONTROL OF *Tetranychus urticae*– Koch (ACARIFORMES: TETRANYCHIDAE) IN ROSES**

Liliana Ruge, Alexander Bustos, Fernando Cantor, Daniel Rodríguez y Alejandra Hilarión
Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **EFFECT OF DIFFERENT COLD STORAGE TIME ON SOME PARAMETERS OF *Phytoseiulus persimilis* y *Amblyseius* (PARASITIFORMES: PHYTOSEIIDAE)**

Adriana de la Peña, Pilar Niño, Alexander Bustos, Fernando Cantor y Daniel Rodríguez

Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **EFFECTIVITY OF ENTOMOPATHOGENIC FUNGI AND PLANT EXTRACTS FOR THE CONTROL OF *Tetranychus urticae* – Koch (ACARIFORMES: TETRANYCHIDAE).**

Diego Amaya V., Andrés Barrera C., Alexander Bustos R. y Fernando Cantor
Universidad Militar Nueva Granada – Bogotá – Colombia. E-mail:
ecologia@umng.edu.co

• **EVALUATION OF THE EFFECT OF TWO ENTOMOPATHOGENIC FUNGI AND A PLANT EXTRACT ON PHYTOSEID MITES IN THE LABORATORY**

Stephanie Johana Numa V., Alexander Bustos R., Fernando Cantor R.
Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **INTERACTIONS BETWEEN TWO ENTOMOPATHOGENIC FUNGI AND A PLANT EXTRACT FOR THE CONTROL OF THRIPS**

Andrea Contreras Pardo. Alexander Bustos R., Fernando Cantor R.
Universidad Militar Nueva Granada. Bogotá - Colombia. E-mail:
ecologia@umng.edu.co

• **BIOLOGY AND LIFE CYCLE OF *Apanteles gelechiidivoris* (HYMENOPTERA: BRACONIDAE) PARASITOID OF *Tuta absoluta* (LEPIDOPTERA: GELECHIIDAE)**
Agronomía Colombiana 26(3), 417-426, 2008

Johanna Bajonero, Natalia Córdoba, Fernando Cantor, Daniel Rodríguez, José Ricardo Cure

Apanteles gelechiidivoris is a larvae parasitoid of *Tuta absoluta* (Lepidoptera: Gelechiidae), an important pest for crops such as tomatoes and potatoes. The use of this insect as a controller has not been implemented efficiently due to the lack of knowledge of their biology, specifically their life cycle and the effect of external factors, such as the temperature in its parasitic capacity. The development and reproductive capacity of *A. gelechiidivoris* was evaluated in four thermal conditions: 14, 20, 26 and 32 °C. For the development assessment a cycle description was performed to determine the total cycle duration. Thermal thresholds for each state were estimated using the Lactin model and day degrees were found. To assess the reproductive capacity, different densities of the host were offered to a pair of recently emerged wasp of 5 until 160. The number of emerged adults was counted, and longevity and fertility of the emerged wasp was evaluated. Additionally, an adjustment of a functional response model was made. Duration of the life cycle for temperatures was evaluated: from 39 days at 14 °C, 34 to 20 °C, 19 to 26 °C and 17 to 32 °C. The longevity was 7.5 (14 °C), 7 (20 °C), 5 (26 °C) and 2.4 (32 °C) days. The temperature at which you can optimize reproductive parameters of this wasp is between 20 and 26 °C.

• **CRITERIA FOR THE RELEASE OF *Phytoseiulus persimilis* ATHIAS HENRIOT**

(PARASITIFORMES: PHYTOSEIIDAE) IN ROSE CULTURE

Alejandra Hilarión, Angie Niño, Fernando Cantor, Daniel Rodríguez, José Ricardo Cure
 Agronomía Colombiana 26(1), 68-77, 2008

Phytoseiulus persimilis has been used in IPM programs as alternative to the use of acaricides in order to control the phytophagous mite *Tetranychus urticae*. The damages caused by *T. urticae* generate the cost of management about 4,500 dollars per hectare, which corresponds approximately to 30% of pesticide cost (Ceniflores, 2008). The implementation of this management strategy must consider the release criteria based upon the population levels of *T. urticae* in the crop estimated by means of appropriate sampling methods. In this research, a methodology for estimating the population density of *T. urticae* is proposed, in order to assess the quantity of *P. persimilis* to be released in the rose crop, and the effectiveness of control exerted by *P. persimilis* was evaluated. In the experimental area, 81 squares were taken, at each of them three rose plants were randomly selected and the number of individuals were counted taken three leaves on the stratum on the plant. The optimum number of sampling units for a biotopic sampling was assessed. The functional response was assumed as a criterion to set the release of *P. persimilis*. The population density of *T. urticae* after each release was divided by the population prior to the release, in order to obtain an index control, which was compared between the management strategies. By means of the biological control a greater reduction in the population density and its lesser variation in time were obtained.

· BIOCONTROL ACTIVITIES IN PERÚ.**Beneficial species introductions by the Centro de Control Biológico:**

- *Anagyrus pseudococci*, from Israel, to control *Planococcus citri*
- *Aphytis melinus*, from the USA, parasitoid to control *Chrysomphalus dyctiospermi*, on avocado pears
- *Citrostichus phyllocnistoides*, from Spain, parasitoid of *Phyllocnistis citrella*
- *Amblyseius largoensis*, predator of *Poliphagotarsonemus latus*, from Cuba
- *Euseius stipulatus*, predator of *Panonychus citri*, from Spain

The following biocontrol agents are available:

- *Lepidosaphes becki*, the parasitoid *Encarsia citrina*, has been recovered from citrus groves in the south
- Giant whiteflies, *Aleurodicus juleikai*, avocado whitefly, *Aleurotrachelus trachoides*, and nesting whitefly, *Paraleyrodes* sp.: parasitoids, apparently *Encarsia* sp., has been recovered, and observed to exert high control levels.

Entomopathogenic fungi that provide very good control levels

- *Pochonia chlamydosporia* for control of *Meloidogyne incognita*.
- A *Trichoderma viride* - *Trichoderma virens* combination to control the diseases *Rhizoctonia* sp. and *Fusarium* sp. In flowers (*Lysianthus* and *Gerbera*)

We are currently looking for solutions for the following pests:

- *Aphis citysorum*, broom aphid “
- *Siphoninus phillyreae*, ash whitefly, an important pest of olive trees. This whitefly species has an efficient suite of natural enemies, which, however, do not act as expected on olive trees.

Any information on these pests is welcome.

Mary Whu Paredes
Servicio Nacional de Sanidad Agraria
La Molina, Lima, Perú

**· BIOCONTROL PROJECTS RELATED TO THE MUSEO DE LA PLATA,
BUENOS AIRES**

(Presented at the XI Siconbiol – Tecnología e Conservação Ambiental 2009, Bento Gonçalves RS, Porto Alegre, Brazil):

- Collections and taxonomical studies on the microhymenopteran parasitoids of the Museo de la Plata: their importance for bicontrol projects.

Dra. Marta Loíacono. E-mail: loiacono@fcnym.unlp.edu.ar

- New geographic and host records for scelionid wasps (Hymenoptera: Platygastroidea) parasitoids of insect pests in South America.

Margaría, Cecilia, Marta Loíacono and Analía Lanteri. E-mail: cmargaria@fcnym.unlp.edu.ar

- *Szelenyopria pampeana* (Loíacono) n. comb., parasitoid wasps (Hymenoptera: Diapriidae) attacking the fungus growing ant, *Acromyrmex lobicornis* Emery (Hymenoptera: Formicidae: Attini) in La Pampa, Argentina.

Loíacono, Marta and Cecilia Margaría. E-mail: loiacono@fcnym.unlp.edu.ar

- Revision of the neotropical genera of *Polynema* (Hymenoptera: Mymaridae), with new distribution and host records.

Aquino, Daniel; Guillermo Logarzo and Erica Luft. E-mail: daquino@fcnym.unlp.edu.ar

- The types of Ichneumonidae and Braconidae (Hymenoptera: Ichneumonoidea) at the Museo de La Plata, Argentina.

Aquino, Daniel; Ana Laura Gaddi, Paulina Hernández, Juan José Martínez. daquino@fcnym.unlp.edu.ar

- A note on *Szelenyopria pampeana* (Loíacono) n. comb., parasitoid wasps (Hymenoptera: Diapriidae) attacking the fungus growing ant, *Acromyrmex lobicornis* Emery (Hymenoptera: Formicidae: Attini) in La Pampa, Argentina.

Marta Loíacono & Cecilia Margaría. E-mails: loiacono@fcnym.unlp.edu.ar, cmargaria@fcnym.unlp.edu.ar. 2015. Zootaxa: 63- 65.

Abstract:

Diapriids are predominately known as parasitoids of fly pupae. According to Huggert and Masner (1983), representatives of three subfamilies of ants (Myrmicinae, Formicinae and Dorylinae) are the known hosts of myrmecophilic diapriinae wasps (Diapriidae: Diapriinae); within the Myrmicinae, the genera known to be associated with diapriines are *Solenopsis* Westwood, *Tetramorium* Mayr and possibly *Myrmica* Latreille. *Acromyrmex ambiguus* (Emery) (Myrmicinae), is known as larval host of *Szelenyopria lucens* (Loíacono) (Loíacono 1987). Masner and García (2002) noted that this is the first member of the tribe Diapriini in the New World to be positively reared

from ants. *Gymnopia pampeana* Loíacono was reared from *A. lobicornis* Emery in Argentina (Loíacono et al. 2000). Fernández Marin et al. (2006) provided details of the biology of the diapriine wasps *Acanthopria* spp. and *Mimopriella* sp., both of which attack larvae of *Cyphomyrmex* fungus-growing ants. These minute diapiiid wasps are almost exclusively tropical, with the greatest diversity in lowland rainforests of Central and South America (Masner & García 2002), but little is known about their biology. The main objective of the present paper is to expand our knowledge about this diapiiids reared from *A. lobicornis* nests collected in La Pampa province, Argentina.

- First record of the genus *Gryonella* Dodd from Brazil, with the description of a new species (Hymenoptera: Platygasteridae).

C. Margaría and M. Loíacono. 2010. Entomological News, in press.

Abstract. A new species of *Gryonella* Dodd, 1914, is described and illustrated based on specimens from Brazil (Mato Grosso do Sul). *Gryonella matogrossensis* sp. nov. is similar to *G. bruesi* Dodd but can be distinguished mainly by its lighter color, rounded vertex, striated cheeks and large metanotal teeth. A key to the described species of *Gryonella* is provided. Taxonomic notes on the genus are included.

• **ENTOMOPATHOGENIC FUNGI SELECTION FOR *Varroa destructor* (ACARI: VARROIDAE) CONTROL**

Marta Rodríguez , Marcos Gerding, Andrés France

ABSTRACT

With the purpose to use entomopathogenic fungi against *Varroa destructor*, with tolerance to the temperatures present into the brood area of honey bees (*Apis mellifera*), 50 isolates of *Beauveria bassiana* and 48 *Metarhizium anisopliae* were evaluated at 30 and 35°C. For each isolate 5 mm colony discs were placed on the center of Petri dish with SDA media, laying the mycelium on contact with the media. The plates were incubated at 30 and 35°C, without light. The radial growth of each colony was measured daily. All the *B. bassiana* and *M. anisopliae* isolates presented lineal growth rate at temperatures of 30°C. However, at 35°C most of the isolates did not growth, except three *B. bassiana* and 14 *M. anisopliae* isolates ($p < 0,001$). These isolates were selected to evaluate the pathogenity on *V. destructor* by applying a suspension of 107 conidia mL⁻¹ concentration. The most effective isolate was Qu-M845 of *M. anisopliae* ($p=0.0033$), producing 85% of mortality. The pathogenic capacity of this isolate on *V. destructor* and its tolerance to the hive condition allowed considering this strain as an alternative to control this pest.

Instituto de Investigaciones Agropecuarias, Centro Regional de Investigación Quilamapu, Casilla 426, Chillán, Chile. E-mail: mgerding@inia.cl

• **EVALUATION OF *Metarhizium anisopliae* var. *anisopliae* ISOLATE Qu-M845 FOR CONTROL OF *Varroa destructor* (Acari: Varroidae) IN LABORATORY AND FIELD TRIALS**

Marta Rodríguez , Marcos Gerding, Andrés France, Ricardo Ceballos

ABSTRACT

The effectiveness of Qu-M845, *Metarhizium anisopliae* (Metschinkoff), isolate, was evaluated in laboratory and field trials. Previously, it was selected for thermal resistance (at 30 and 35°C), and pathogenicity on *Varroa destructor* Anderson y Trueman,.

At laboratory, the first evaluations were carried out spraying by increasing concentration of 0 to 108 conidia mL⁻¹ on varroa adults. Lethal concentration required for 50 and 90% mortality of mites (LC50 y LC90) were 3,8 x 10⁵ and 8 x 10⁷ conidia mL⁻¹, respectively ($\chi^2 = 2,03$).

In fall in field trials, there were evaluated three application methods (doses of 5 x 10¹⁰ conidia per hives). The treatments were: a) Stamped conidia on filter paper, located each two frames inside the hive; b) dry conidia powdered on /and between frames; and c) dry conidias in a dispenser path at the entrance of the hive. Furthermore, there were included untreated hives as control.

After 21 days of treatment, the dry conidia powdered on/and between frame showed a 67% less of mite infested bees, as compared with control ($p < 0,05$). The average bees mortality, observed were significantly different between treatments ($p < 0,05$). The dry conidia powdered caused the higher fall of bees. In spring, this treatment produced an increased mites mortality, without bees mortality. These results demonstrated that it is possible to develop a biological control of mites with these fungi, as an alternative control of *V. destructor*.

Instituto de Investigaciones Agropecuarias, Centro Regional de Investigación
Quilamapu, Av. Vicente Méndez 515, Chillán, Chile. E-mail: mrodrigu@inia.cl

• **BIOLOGY OF *Mastrus ridibundus*, A POTENTIAL BIOLOGICAL CONTROL AGENT FOR AREA-WIDE MANAGEMENT OF *Cydia pomonella*.**

L. Devotto, C. del Valle, M. Gerding

The codling moth *Cydia pomonella* (Linnaeus) (Lepidoptera: Tortricidae) is a serious pest of pome fruit crops. A natural enemy of codling moth, the larval ectoparasitoid *Mastrus ridibundus* (Gravenhorst) (Hymenoptera: Ichneumonidae) has been imported into South America from the USA but little is known about the biology and ecology of the wasp, knowledge that is needed to design an efficient strategy of release and establishment. Experiments were carried out to assess important traits of the biology of the parasitoid in relation to its possible use as a biocontrol agent for codling moth. Females laid more eggs on heavier hosts, and most of the additional eggs were females. When the adults were offered honey, diluted honey (10%) or pollen in paired choice tests, both males and females preferred honey over the other two foods. Females preferred 10% honey over pollen, while the males showed the opposite preference. Honey-fed females had a higher rate of reproduction and lived longer than starved females. Adults died rapidly at 35°C, while they lived 20 days at 25°C and 12-17 days at 15°C. Females had 25 ± 14 and 18 ± 11 progeny at 15°C and 25°C, respectively but they no had progeny at 35°C. The developmental time (egg to adult emergence) was 44 ± 7 and 24 ± 2 days at 15°C and 25°C, respectively. Immature insects did not reach the adult stage at 35°C.

Centro Tecnológico del Control Biológico, Centro Regional de Investigación
Quilamapu, Instituto de Investigaciones Agropecuarias (INIA), Av. Vicente Méndez
515, Chillán, Chile.

· PREDATION POTENTIAL OF THREE FLATWORM SPECIES (PLATYHELMINTHES: TURBELLARIA) ON MOSQUITOES (DIPTERA: CULICIDAE)

María C. Tranchida, Arnaldo Maciá, Francisco Brusa, María V. Micieli, Juan J. García

We conducted a field survey for flatworms to select species as potential biological control agents against *Aedes aegypti* and *Culex pipiens* (Diptera, Culicidae) breeding in artificial containers. Laboratory experiments were performed to determine the daily predation rate, differential predation on each mosquito larval instar, selective predation on either *A. aegypti* or *C. pipiens*, and predator tolerance to water from artificial containers. *Girardia anceps* (Tricladida, Paludicola, Dugesiidae), *Mesostoma ehrenbergii* and *Bothromesostoma cf. evelinae* (Rhabdozoa, Typhloplanida, Typhloplanidae) were found in temporary puddles and permanent pools. In the laboratory, they killed between 52% and 100% of immature mosquitoes coexisting in the same habitat. No preference of flatworms for mosquito preys was detected. Predation rate was related to predator size and instar of preys. *Girardia anceps* and *B. evelinae* survived after a dry period and when re-flooding occurred, they laid eggs. Tolerance to water from artificial containers was highest in *G. anceps* and this species could be a suitable predator to reduce mosquito populations from artificial containers using an inoculative approach.

Centro de Estudios Parasitológicos y de Vectores, CEPAVE (CONICET – CCT La Plata – UNLP), calle 2 No 584, (1900) La Plata, Buenos Aires, Argentina

· BIOLOGICAL CONTROL OF *Trialeurodes vaporariorum* Westwood (HEMIPTERA: ALEYRODIDAE) BY *Amitus fuscipennis* MacGown & Nebeker (HYMENOPTERA: PLATYGASTERIDAE) ON BEANS: UNDERSTANDING THE ROLE OF THE ECOSYSTEM

¹ Luis Miguel Hernández M.; ¹ María R. Manzano; ² J. Tupac Otero.

¹Departamento de Ciencias Agrícolas, Universidad Nacional de Colombia sede Palmira. lmhernandezm@palmira.unal.edu.co, mmanzanom@palmira.unal.edu.co,

²Departamento de Ciencias Biológicas, Universidad Nacional de Colombia sede Palmira jtoteroo@palmira.unal.edu.co

Trialeurodes vaporariorum Westwood is key pest of bean crops (*Phaseolus vulgaris* L). Among the promising natural enemies for biocontrol we find the parasitoid *Amitus fuscipennis* MacGown & Nebeker (Fig. 1). So far we did not know what food sources allowed its survival in the field. For this reason we set out to determine which plants of the agroecosystem offer refuge and food to this parasitoid through specialized structures like extrafloral nectaries, and others. Research was performed Regaderos, Cerrito, Valle del Cauca, between 1500-2000 m.a.s.l, in the central Cordillera of the Colombian Andes. Quantitative and qualitative samplings were performed on these plants.

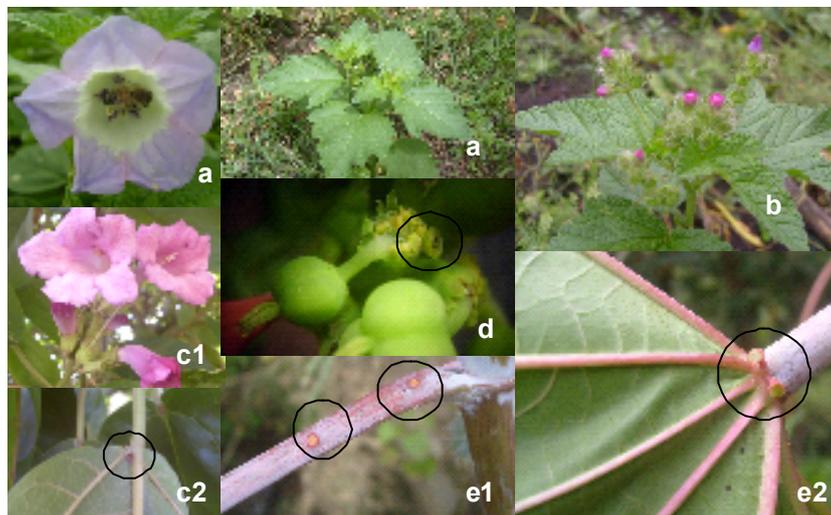
We found 107 plants grouped in 38 families, of these, adult parasitoids were recorded on 23 plants from 13 families. The main species were: *Mikania banisteriae* D.C.M., *Delostoma roseum* (H. Karst & Triana) K. Schum., *Critoniella acuminata* (H.B.K.) R. M. King & H. Robinson, *Nicandra physalodes* (L.) Gearth, *Cucurbita ficifolia* Bouché, *Verbesina arborea* Kunth, *Malvastrum peruvianum* L. e *Iresine celosia* L., *Ricinus communis* L., *Ipomoea hederifolia* L. Morphological descriptions of these plants reveal the presence of extrafloral nectaries (NEF) (Fig. 2) from which the

parasitoids could feed. We also found that *Siegesbeckia jorullensis* H. B. K, *V. arborea*, *Sida acuta* Burm f., *Verbena littoralis* H. B. K. and *Sonchus oleraceus* L. are alternative hosts of *T. vaporariorum*, and allow reproduction of *A. fuscipennis*. We can thus confirm that the ecosystem surrounding bean cultures play an important role in the performance of biological control agents like *A. fuscipennis*. Preserving these plants in agroecosystems could improve the performance of the parasitoid as a bicontrol agent against *T. vaporariorum* obtaining reductions in the costs and impact that conventional agriculture generates.

Different development stages of *A. fuscipennis*



Some of the host plants of *A. fuscipennis*. NEF :extrafloral nectaries



a. *N. physalodes* b. *M. peruvianum* c. *D. roseum* 1: Flor, 2: NEF en envés de hoja. d. *E. heterophylla* e. *R. communis* 1: NEF en peciolo, 2: NEF en base de hojas.

9. NTRS NEWS AND ACTIVITIES

• II Meeting on Diseases and Pests of Greenhouse Crops

During June from the 3rd through June 5 2009 the CIDEFI (Centro de Investigaciones en Fitoatología -Center of Research on phytopathology-) and INTA organized the second Technical meeting of Diseases and Pests of Greenhouse Crops. The meeting was held at the Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, at the city of La Plata (Province of Buenos Aires, Argentina). The meeting gathered outstanding researchers and professionals from Argentina and other countries such as Mexico, Brasil, Holland, whose activity is related with keeping the production in greenhouse free of pests and diseases leading this to a sustainable management of the system. By means of lectures, discussion sections and poster presentations, the development of new diseases and pests, environmental impact of chemical control, the use of alternative methods for disease and pest control, the threshold levels that justify the control and knowledge of the biology and ecology of pathogens and pests and their population dynamics and monitoring in protected crops, were discussed. In addition to this there was a specific section devoted to the explanation of the activities of the IOBC (International Organization of Biological Control) and the products and equipment developed for testing the environment and control pest and diseases in greenhouses by companies such as Bayer, Bioagro, Syngenta and Seedmech. The conference was attended by more than 200 people that included researchers, experts, producers, professionals, and students from Argentina and other countries of Latin America, which is reflecting the increasing importance of the greenhouse crops production and their economic impact on the market either national or international. Because of this and aimed at increasing the discussion of new scientific and technological developments and findings that may contribute to a sustainable management of vegetable and flower production in the greenhouse, it is already under way the organization of a new edition of this technical meetings that is the III Jornadas de cultivos protegidos, which we hope will be held in 2011 at the City of La Plata.

Ing. Gustavo Dalbello

Facultad de Ciencias Agrarias y Forestales de la Universidad Nacional de La Plata,
Argentina

(NOTE: at this meeting we had talks by the president of the NTRS, Vanda Paes Bueno, the General Secretary of IOBC Global, Joop Van Lenteren, and NTRS member Eduardo Botto)

· **Job opportunity, Instituto Humboldt**

EL INSTITUTO DE INVESTIGACION DE RECURSOS BIOLÓGICOS
ALEXANDER VON HUMBOLDT ESTA INTERESADO EN RECIBIR HOJAS DE
VIDA CON LOS SIGUIENTES REQUISITOS BÁSICOS:

Perfil 2 (Coordinador uso y valoración)

View full offering and application form at:

http://www.humboldt.org.co/humboldt/homeFiles/oportunidades/resultados/COORD_USO_VALORACION.pdf

The FIFTH EDITION of the IOBC INTERNET BOOK OF BIOCONTROL IS AVAILABLE ON IOBC-Global.org

IOBC Internet Book of Biological Control

Aim: to present the history, the current state of affairs and the future of biological control in order to show that this control method is sound, safe and sustainable

The fifth edition of the book (2008) contains more than 130 pages with information about biocontrol is available for free on our website. We ask you to support the preparation of this book. 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**. We have received several very good contributions during the past months, which will be included in the sixth edition, THANK YOU !!!!

11. BIOCONTROL, THE JOURNAL OF IOBC GLOBAL

BioControl is the official journal of the International Organization for Biological Control (IOBC). It includes original papers on basic and applied research in all aspects of biological control of invertebrate, vertebrate and weed pests, and plant diseases. Subject areas covered in **BioControl** comprise biology and ecology of organisms for biological control, and various facets of their use including any biological means of control for integrated pest management (IPM) such as plant resistance, pheromones and intercropping. Developments in molecular biology and biotechnology that have direct relevance to biological control will also be considered for publication. **BioControl** also publishes forum papers and reviews (solicited by the Editor-in-Chief), Letters to the Editor on critical issues, and research notes relevant to biological control.

BioControl does not have page charges (except for colour pages).

BioControl no tiene costo de publicación (excepto para ilustraciones a color).

5-Year Impact Factor: 1.267

Impact Factor: 1.103 (2007) *

* Journal Citation Reports®, Thomson Reuters

Abstracted/Indexado en:

Biological Abstracts, BIOSIS, CAB Abstracts, CABS, Chemical Abstracts Service, Current Contents/ Agriculture, Biology & Environmental Sciences, Entomology Abstracts, Geobase, Pest Management Focus, SCOPUS

<http://www.springerlink.com/content/102853>

13. PUBLICACIONES Y LIBROS DE CONTROL BIOLÓGICO

Si faltaran comentarios sobre libros recientes de control biológico o IPM, envíenos (Joop.vanLenteren@wur.nl; o gcabrera@speedy.com.ar) una foto .jpeg de la carátula,

un sumario breve de su contenido, y datos sobre cómo y donde conseguirlo. Envíenos asimismo archivos .pdf o separatas de nuevas publicaciones en control biológico y serán incluidas en nuestro próximo boletín.

· The book “**Controle biológico de pragas: produção massal e controle de qualidade**” has been published recently



The second edition of this book strives to integrate current knowledge on natural enemy mass rearing. It has 10 chapters devoted to emphasizing selection criteria involved in the production of some natural enemies that present great potential for use as biocontrol agents. R\$ 70. <http://www.editora.ufla.br/>

Conservación y manejo de enemigos naturales de insectos fitófagos en los sistemas agrícolas de Cuba

Luis L. Vázquez, Yari Matienzo, Marlene Veitía, Janet Alfonso. Correo electrónico: lvazquez@inisav.cu

CIDISAV, Ciudad de La Habana. Cuba. 2008. ISBN 978-959-7194-17-0



New IPM book

Edited by: Editorial Nuevo Milenio y CIDISAV. Ciudad de La Habana, Cuba. 2008.

ISBN: 978-959-05-0543-0

Author: Luis Ladislao Vázquez Moreno. Instituto de Investigaciones de Sanidad Vegetal (INISAV). Ciudad de La Habana, Cuba. Correo electrónico:

lvazquez@inisav.cu

Contents: this book is organized in the form of questions and answers. It has 486 pages, including figures and tables. It is written for farmers and agronomists working directly in the field. Chapter 1. Agriculture, plant protection, and pest control; Chapter 2. Research for pest management; Chapter 3. Agroecological basis of pest management; Chapter 4. Follow-up and decision rules for pest management; Chapter 5. Agroecological management in the farm; Chapter 6. Bioregulators and biological control; Chapter 7. Uses and risks of synthetic pesticides; Chapter 8. Recomendations for control of the main pest types; Chapter 9. Cuban experience in the transition toward sustainable agriculture

**14. PUBLICITY AND PROMOTIONS****SANOPLANT**

We invite you to visit our WEBPAGE to see our catalogue of biological supplies.

HTPP/

www.sanoplant.com.co**Companies commercializing natural enemies in Brazil:**

- **Biocontrole Métodos de Controle de Pragas** (<http://www.biocontrole.com.br/>) has a number of bioproducts available to be used in IPM programs, mainly insect pheromones. They sell a number of pheromone traps that are commonly used in Europe and USA. They have products available to many crops, such as tomato, cotton, citrus, tobacco, and corn among others.

- **BUG Agentes Biológicos** (<http://www.bugbrasil.com.br/>) is a company located in Piracicaba/SP which produces and sells *Trichogramma* species for the biological control of tomato, corn and sugarcane pests. This company also has other bioproducts available and a line of traps suitable to a variety of agroecosystems. They complement their line of products making available literature in the field of biological control.

- **Itaforte Bioprodutos** (<http://www.itafortebioprodutos.com.br/>) is a company located in Itapetininga/SP which produces and sells a number of entomopathogenic fungi, such as *Beauveria*, *Metharizium*, *Lecanicillium* and *Trichoderma*.

15. ACKNOWLEDGEMENTS

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 Willie Cabrera Walsh (gcabrera@speedy.com.ar), 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.

Editor: Willie Cabrera Walsh, junio de 2009