

Maintaining Worldwide Connections for Quality Assurance in Arthropod and Nematode Rearing

Joint Meeting of:

Association of Natural Bio-control Producers
IOBC Global Working Group on Arthropod Mass Rearing and Quality Control
ASTM subcommittee E35.30 on Natural Multi-Cellular Biological Control Organisms
International Biocontrol Manufacturers Association Invertebrate Biocontrols Group

Hosted by: Biocontrol Network of Canada
Montreal 28 October – 1 November, 2007

ANBP Board Meeting 8 AM – 1:30 PM
ASTM Meeting 2 PM – 5 PM

Sunday October 28 Registration beginning at 3 PM
17:00 Welcome Reception

Monday, October 29

8:00 – 8:50 **Welcoming Partnerships in Biological Control**
Moderator: *Simon Grenier, INRA*

Welcome

Introduction of each partner organization in this conference:
Our host: Biocontrol Network, Jean-Louis Schwarz
ANBP: *Richard Ward*
IOBC AMRQC: ***Patrick DeClerq***,
IOBC Global: ***Marshall Johnson***
IBMA: *Karel J. F. Bolckmans*
ASTM: ***Carol Glenister***
INRA: ***Simon Grenier***
CFBC: *Kevin Floate*

8:50 – 9:10 International Organization for Biological Control of Noxious
Animals and Plants- IOBC, *Joop Van Lenteren, President of IOBC
Global, delivered by Marshall Johnson, President of IOBC NRS.*

9:10 – 9:40 Building dynamic partnerships to assure quality that extends from
producer to customer and includes active participation by the
research community, ***Norman L. Leppla***, University of Florida

- 9:40 – 10:00 How does the general public perceive biological control as a management practice? **Jean-Louis Schwartz**, *University of Montreal*
- 10:00 – 10:30
Poster **Break**
Insect Producer Database, *Peter Ebling*, Natural Resources Canada
- 10:30 – 12:00 **Quality Assurance: Concept to Product to Customer**,
Moderator, *Carol Glenister*
- Quality, cost and reliability: the basic challenges of commercial natural enemy production, **Karel J. F. Bolckmans**, *Koppert*
- The North American standardization efforts: a process driven by structure and key questions, **Carol Glenister**, *IPM Laboratories, Inc.*
- Integrating measures of fitness into the standardization process, **Anna Luczynski**, *Qadra Consulting*
- 12:00 – 13:00 Luncheon
International Organization for Biological Control of Noxious Animals and Plants- IOBC, Joop Van Lenteren, President of IOBC Global, delivered by Marshall Johnson
- 13:00 – 15:00 **State of the biological control industry-**
Moderator, *Jacques Brodeur*
- Establishment and status of natural enemy industry in Korea, **Kim Yong-Heon**, *Korean National Agricultural Science and Technology*
- A 10 year review of the biocontrol industry in Israel: challenges, drawbacks and prospects, **Shimon Steinberg**, *Bio-Bee Sde Eliyahu Ltd., Israel*
- State of the biological industry in Europe: production and commercial aspects, **Yves Arijs**, *BioBest*
- A Survey of the North American Industry Producing Beneficial Insects and Mites, **Sinthya Penn**, *Beneficial Insectary*
- Status of Mass Rearing facilities of Insect Parasitoids and Predator in Pakistan and the Efforts for Creating the Awareness of Bio-Control among the Farming Community, **Muhammad Ishtiaq***, *and Khuram Shehzad*,

Status and perspectives of commercial biocontrol agents in Argentina, **Miguel C. Zapater**, Universidad de Buenos Aires, Argentina

15:00 – 15:30

Poster

Break

Optimization of mass-rearing of the predator *Orius insidiosus* (Hemiptera: Anthocoridae): how far are we?, **Vanda Bueno**, Federal University of Lavras, Brazil

15:30 – 17:00

Rearing and quality assurance methods for

arthropods and nematodes, Moderator: *Eda Reinot*

Quality Assessment of Commercially Available Entomopathogenic Nematodes, **Raymond Cloyd**, *Kansas State University*

Quality control of the parasitoid *Cotesia flavipes* (Cameron) (Hym.: Braconidae) produced under mass-rearing system, *Hivizi, C. L., Bueno, V. H. P., Carvalho, L. M. & Carvalho, A. R.*, *Federal University of Lavras, Brazil*

Optimizing nutrition of *Orius insidiosus* for rearing and distribution, **Jeffrey Shapiro**, *US Dept. of Agriculture Agricultural Research Service*

Quality assessment for entomopathogenic nematodes, **Arne Peters**, *e-nema GmbH*

Effect Six Pyralid Host Species on Reproduction of the Parasitoid *Bracon hebetor* (Hymenoptera: Braconidae), **Mukti Ghimire**, *University of Oklahoma*

Dinner on your own

Tuesday. October 30

8:00 – 8:15

Housekeeping

8:15 – 10:00

Rearing entomophagous arthropods with artificial diets

Moderators: *P. De Clercq, S. Grenier*

Dynamics of Interactions between Diet Components
Allen C. Cohen, *Insect Diet and Rearing Research LLC*

Quality control of *Harmonia axyridis* (Pallas) (Coleoptera, Coccinellidae) fed on liver-based artificial diets.

Simon Grenier, INRA, France

Artificial diet for the production of *Macrolophus pygmaeus*,

Bjorn Vandekerkhove, University of Ghent, Belgium

Rearing the parasitoid *Exorista larvarum* (L.) (Diptera,

Tachinidae) on artificial media, **Maria Luisa Dindo**, University of Bologna-DISTA, Italy

Improving fruit fly nutrition and performance through Proteomics

Stella Chang, US Dept. of Agriculture Agricultural Research Service

10:00 – 10:30

Posters

Break

Development and reproduction of the anthocorid *Orius laevigatus* on factitious and artificial foods, **Marten Bonte**, University of Ghent

Egg disinfection of mass reared *Ceratitis capitata* (Weideman)

(Diptera: Tephritidae) Genetic Sexing Strain, **M. M'saad Guerfali**, **H. Hamden**, **S. Ayari**, **W. Marzouki** and **A. Raies**, National Centre of Nuclear Sciences and Technologies, Tunisia

Effect of DNA Gyrase Inhibitors on rearing of *Lygus hesperus*, **Douglas Streett**, USDA-ARS-BCPRU

Sterile insect technique-mass rearing & quality control - quality assurance system, **Gustavo Taret**, ISCAMEN, Argentina

10:30 – 12:00

Production of sterile insects and their quality assurance, Moderator: *Andrew Parker*

Biocontrol and SIT under the same roof. How can Quality Control benefit from maintaining the two disciplines within the same industrial entity, **Shimon Steinberg**, Bio-Bee, Israel

Development of a genetic sexing strain and studies on sterile male technique of Oriental Fruit Fly, *Bactrocera dorsalis* (Hendel), in Fujian, China., **Jiahua Chen**, Fujian Agriculture & Forestry University

Impact of mass rearing and irradiation on male *Eldana saccharina* moths used in SIT programmes, **Desmond Conlong**, South African Sugarcane Research Institute

Sterile Insect Technique against onion fly (*Delia antiqua* (Meigen)) in the Netherlands, **Thomas Groot**, *De Groene Vlieg, The Netherlands*

Effect of Rearing Strategy and Handling on the Quality of Mass-Reared Codling Moths, *Cydia pomonella* (Lepidoptera: Tortricidae), **Mustapha Jallow**, *Okanagan-Kootenay Sterile Insect Release Program, BC, Canada*

Sterile insect technique-mass rearing & quality control - quality assurance system, **Gustavo Garet**, *ISCAMEN, Mendoza, Argentina*

12:00 – 13:00

Luncheon

13:00 – 15:00

Future concepts for mass production of phytoseiid mites, Moderator: Anna Luczynski,

Recent advances in mass production of Phytoseiids, **Karel Bolckmans**, *Koppert, The Netherlands*

Developing "omic" diagnostic tools for phytoseiid mites, **Brian Ellis**, *University of British Columbia*

Population and ecological consequences of foraging traits, **David Margolies**, *Kansas State University*.

Influence of RH on the prey/predator relationship, **Jan Nyrop**, *Cornell University, US*

15:00 – 15:30

Posters

Break

Host Plant Extra-Floral Nectaries as a Food Source for *Phytoseiulus persimilis* (Mesostigmata: Phytoseiidae) and their Impact on Predator Fitness, **Juan A. Morales-Ramos**, *USDA ARS MSA NBCL*

A Method to Determine Fecundity of Predatory and Herbivore Mite Adult Females Using Biological Colorants, **M. Guadalupe Rojas**, *USDA ARS MSA NBCL*

15:30 – 17:00

Education and training in arthropod rearing and quality control, Moderator: *Norm Leppla*

Practical education and training in insect rearing and quality assurance in Brazil. **Jose Parra**, *University of Sao Paulo, Brazil*

U.S Insect Rearing Educational Opportunities at Mississippi State University, **Frank Davis**, *Mississippi State University*

The vision for rearing education at the Insect Diet and Rearing Research, LLC, **Allen Cohen**, *Insect Diet and Rearing Research, LLC*

Academic training for competent users of biological controls, **Jean-Louis Schwarz**, *University of Montreal*

18:00

Banquet

Wednesday, October 31

8:00 – 8:15

Housekeeping

8:15 – 10:00

Fitness, Cold Storage, and Effectiveness, Moderator: *Marshall Johnson*

Effect of some diets on omnivore predatory bug, *Macrolophus pygmaeus* fitness, **A. Ashouri** and *F. Maleki*, University of Tehran.

The expression of chilling injury in the progeny of the parasitic wasp, *Gonatocerus ashmeadi*, **Roger A. Leopold** and *Wenlong Chen*, US Department of Agriculture Agricultural Research Service Biosciences Research Laboratory

Improving Long-Term Cold Storage of Insects, **Thomas Coudron**, *US Department of Agriculture Agricultural Research Service Biological Control*

General Discussion: How relevant are laboratory quality assurance tests to field performance?

10:00 – 10:30

Poster

Break

How plant quality can affect the intensity of intraguild predation among aphidophagus, *Mojtaba Hosseini*, Tehran University, Iran

10:30 – 11:30

Microorganisms, Genomics, and Insect Quality

Moderator: *Kevin Floate*

Relevance of *Wolbachia* bacteria in biocontrol programs,

*Kevin Floate, Agriculture & Agri-Food Canada, Lethbridge
Research Centre, Alberta, Canada*

Microsporidia of phytoseiid mites used for biological pest control.
Susan Bjornson, Saint Mary's University, Nova Scotia, Canada

Characterization of a novel virus from mass-reared tsetse flies
Andrew Parker, IAEA, Austria

The genome sequence of the parasitic wasp *Nasonia vitripennis*:
progress and implications for biological control,
Christopher Desjardins, University of Rochester, NY, USA

11:30 Pick up boxed lunch and board buses for tour of greenhouses and
their biological control programs

17:00 Return to hotel and dinner on your own

Thursday, November 1

8:00 – 8:15

Housekeeping

8:15 – 10:00

Round table on industry needs for research

Moderator: *Angela Hale*

The Role of Trade Associations and Commodity Groups in
Identifying Research Projects, *Angela Hale and Amandeep Bal*

ARS Biological Task Team to Improve Liaison with Industry,
Douglas Street, Guadalupe Rojas and Juan Morales

Main Research Needs in Mass rearing and Quality Control: A
European perspective, *Karel Bolckmans*

Discussion with participation of audience.

10:00 – 10:30

Break

10:30 – 12:00

Wrap up, business meeting

12:00 – 13:00

Luncheon

13:00 – 17:00

Individual organization meetings

PostConference Activities

ANBP Annual General Meeting 1 PM Thursday

ANBP New Board Meeting Approximately 2 PM

Workshop on

Sterile Insect Production and Quality Control hosted by IAEA

(contact Andrew Parker at A.G.Parker@iaea.org)
Thursday and Friday November 1 and 2