



IOBC-NRS NEWSLETTER

INSIDE THIS ISSUE:

<i>From the President</i>	2
<i>Distance Education and Biocontrol</i>	3
<i>Biological Control Meetings</i>	4
<i>Announcements</i>	4
<i>Research Briefs</i>	5
<i>Newsletter wrap-up</i>	5

Governing Board

President

Marshall W. Johnson
UC-Riverside

President-Elect

Les Shipp
Agri-Food Canada

Past President

Robert Wiedenmann
Univ. of Arkansas

Vice President

Jean-Louis Schwartz
Univ. de Montreal

Secretary/Treasurer

Stefan Jaronski
USDA-ARS, Montana

Corresponding Secretary

Jonathan Lundgren
USDA-ARS
South Dakota

Board Members-At-Large

James Harwood
Univ. Kentucky

Ruth Hufbauer
Colorado State Univ.

William Overholt
Univ. Florida

Releasing Biocontrol Agents: Risk Assessment and Overdue Reform

Although the need for universally instituting formal risk assessment (RA) in the screening and approval process for non-native biological control (BC) agent releases has been widely acknowledged for the past several years, little seems to have been accomplished in terms of codifying this practice within a regulatory framework. Given the low success rate of classical BC and the documented environmental risks associated with previous releases, adopting standardized assessments of BC risks and benefits should not be further delayed.

Risk analysis (i.e., risk assessment, management, and communication) can be used to make better decisions about agent releases, and, at the same time, can improve public trust in BC, ensuring its viability as a tactic within IPM. The ultimate value of risk analysis is derived from the development of a rational framework whereby RA is integrated with social, economic, and political considerations to manage and communicate risk in policy decisions. This is clearly lacking today with respect to the evaluation process for releases of BC agents in the Nearctic region.

RA is a formal basis for the objective evaluation of risk in which assumptions and uncertainties are clearly considered and presented. RA flows in a logical fashion through the following steps: (1) problem formulation, (2) analysis [effect and exposure assessment], and (3) risk characterization [the joint probability of effect and exposure].

Not only do we advocate the presentation of risks in classical BC regulatory documents, but we also suggest that they include estimates of agent efficacy and comparative assessments of alternative management tactics. The lottery approach to BC is not acceptable; efficacy must first be evaluated in the host's native range using robust techniques, such as life tables. And if alternative tactics provide sustainable economic and environmental management of the exotic pest, is it appropriate to deliberately release another exotic, reproducing environmental stressor, adding biological pollution to an environment? A systematic RA can help answer these questions.

-continued page 3



***Harmonia axyridis*: when BC introductions become public disturbances.**

IOBC-NRS TEAMS UP WITH MEXICAN BIOCONTROL SOCIETY IN MERIDA, MEXICO

The IOBC-Nearctic and Neotropical Regional Sections and the Mexican Society for Biological Control would like to invite you to participate in an upcoming event. The collaborative symposium, entitled "Biological Control Without Borders" will happen on November 13-15, in Merida (Yucatan), Mexico. The venue is the Hyatt Regency Merida. The meeting will be held in conjunction with the Mexican Society's 30th Annual Congress of Biological Control, and immediately following the Mexican Society's National Short Course on Biological Control (Nov 11-13). In addition, the NCERA-125 regional Biological Control committee will meet (Nov 12-13) in conjunction with the Merida meeting.

The meeting will begin the evening of the 13th with an opening ceremony, special presentations, and a social. The meeting itself will run for two full days, concluded by a banquet the evening of the 15th. Three symposia sponsored by the IOBC-NRS are Ecological interactions of GM Crops and Biological Control; Biocontrol in Greenhouses; and Biological Control of Weeds. A number of other symposia will be organized by the Mexican Society. Additionally, Vanda Bueno (President of the -

-continued page 2



Advisors need to raise awareness of the IOBC to their students.

MESSAGE FROM THE PRESIDENT: NEW EMPHASIS ON STUDENT MEMBERS

Over the last two years, we have had poor response to our initial call for applicants for the IOBC Outstanding Graduate Student Awards. This may be the result of several factors including: poor communication between IOBC-NRS and qualified students, a low number of student members, disinterest among students in the awards we offer, and an extremely large number of very humble students within our ranks (perhaps the least important possibility). In the Spring 2007 Newsletter, Jonathan Lundgren wrote a small piece on why graduate students should become members of IOBC. He made several good points in his narrative. However, one factor that he did not focus upon was the importance of major professors being active in IOBC and these individuals emphasizing the value of IOBC membership to their students. As a graduate student at the University of California at Riverside during the late 1970's, my professors only referred to IOBC twice: once in the undergraduate class on biological control and once when I was searching for a journal to publish some of my dissertation research. If things have not changed substantially in 25 years, we may have an area in which we can make some improvements. I can honestly say that I have not emphasized membership in IOBC to my own graduate students to any substantial degree. I believe that it is time for a change, and I encourage all major professors with graduate students working in the area of biological control to talk to their students about IOBC and recommend that the students join. Another factor that may increase the number of applicants for the student awards is to allow faculty members to nominate deserving students for the awards. Currently, an interested student applies for the award as one might apply for a scholarship. To be nominated may be a way to bring attention to highly qualified and deserving students. I will suggest this idea to the awards committee for consideration. Any suggestions on increasing student membership in IOBC would be greatly appreciated. Thank you.

Marshall W. Johnson
Department of Entomology
University of California
Riverside, CA

IOBC-NRS MEETING, CONT.

Neotropical Regional Section of IOBC) will lead a roundtable discussion on production of natural enemies.

A call for papers and posters (either English or Spanish presentations are acceptable) will be made in June. Hotel reservations and meeting registration will be announced and updated on the web site listed in the sidebar. Meeting registration will be handled through the Illinois State University Conference Center, to avoid having to convert currency or send credit cards to Mexico. Details and the ISU web site for registration will be sent to all of you in June, as well as posted on the web.

I hope you will consider joining us in Merida. We have a great program filled with presentations about issues in common among Mexico and North, Central and South America. In addition, Me-

rida is in the heart of the Mayan world in the northern Yucatan, with numerous opportunities to see ruins as well as beaches. Spouse and guest programs are being planned, too, so be sure to bring a guest. Potential tours/programs include: Chichén Itzá and Uxmal (within an hour of Merida); the coast at Progreso (about 30 minutes north); and the Celestún Biosphere Reserve (concentration of thousands of flamingoes) (an hour east of Merida). There are also nearby markets, such as the one at Izamál (the Yucatan is well known for weavings and varied handcrafts). One web site with local information is: <http://www.yucatanoday.com/>



[index.php](#)

Please feel free to contact me for any questions or suggestions (even suggestions for guest program and tours) you may have. I truly hope to see you in Merida.

Robert Wiedenmann
Department of Entomology
University of Arkansas
Fayetteville, AR

More information on the meeting can be found at
<http://entomology.uark.edu/iobcsymp.html>

DISTANCE EDUCATION AND BIOLOGICAL CONTROL OF THE SOYBEAN APHID.

The soybean aphid has become the focus of soybean insect management programs throughout the north central United States. Although most soybean producers are aware of scouting techniques, economic thresholds, and insecticides for control of soybean aphids, the impact of natural enemies and the potential for classical biological control efforts are not widely understood. Consequently, research and extension entomologists developed a short course, to be delivered via distance education techniques, with the following objectives:

- Improve the level of knowledge about the role of natural enemies and their interactions with soybean aphids.
- Underscore the need to assess the impact of natural enemies before using an insecticide to control soybean aphids.
- Assess interest in the development of IPM guidelines that incorporate quantitative information about natural enemies and their impact.
- Determine the level of interest in cooperating with the soybean aphid biological control research project.

The short course—

Management of Soybean Aphids in 2007: How Will Biological Control Contribute?—was delivered via a teleconference in March, 2007. Approximately 350 people located at 142 sites in 14 states and two Canadian provinces attended the short course.

People who attended the short course were asked to complete an evaluation questionnaire to determine whether we met our objectives. Of the 198 questionnaires returned 92% of the individuals indicated that their knowledge about the role of natural enemies and their interactions with soybean aphids improved as a result of attending the short course. Approximately 90% of the respondents agreed that because they participated in the short course, they recognized the need to assess the impact of natural enemies before using an insecticide to control soybean aphids. Eighty-two percent of the respondents indicated that they would like to see biological control information incorporated into IPM guidelines for soybean aphids.

Many individuals who attended the short course also submitted questions that could not be answered during the time allotted. The questions are be-

ing answered by the research and extension entomologists who delivered the program, and both the questions and answers will be posted to one or more Web sites so that everyone will gain additional value from the short course. The feedback about the short course delivered with distance education techniques was overwhelmingly positive, and the positive impact of the program on the participants' level of knowledge was obvious.

This short course was a benchmark event, with feedback suggesting that many people can be reached effectively by expert researchers and educators to improve understanding about relatively complex ecological systems. Such cost-effective and efficient programming will become more commonplace as technology improves, so every effort should be made to continue development of educational programs for delivery via distance education techniques. Thanks are due the North Central Soybean Research Program for their foresight in funding such an educational event.

Kevin L. Steffey
Department of Crop Sciences
University of Illinois
Urbana, IL

The short-course can be watched in its entirety at

*[www.ncipmc.org/
teleconference/
soybean2007/videos/](http://www.ncipmc.org/teleconference/soybean2007/videos/)*



Orius insidiosus attacking a soybean aphid. (Photo by John Obermeyer)

RISK ANALYSIS OF CLASSICAL BC, CONT.

Environmental Assessments (EAs) currently produced by petitioners are not acceptable; any document evaluating the release of a potential agent should be required to have within it a formal RA. How do we incorporate RA's into pre-release evaluations? It is unfair to expect individuals or groups petitioning for BC agent releases to conduct their own RA as part of a document. Their vested interest in the outcome also potentially jeopardizes the requisite objectivity expected in the process.

We stress that this document would not simply be a detailed description of non-target host screening results. Although we recognize improvements in host screening, a comprehensive RA would extend well beyond more thorough host screening.

In the U.S., if APHIS must approve all initial releases of non-native agents, then an Agency representative should be responsible for ensuring that an appropriately rigorous RA is included in each agent release petition, and that these docu-

ments are made available for public comment before a final decision is made.

A properly conducted RA will guide the public, decision makers, and other stakeholders through the necessarily complicated process of agent releases. Regardless of how RAs are incorporated into documents for releasing agents, the simple fact is that they must be part of these documents.

Bob Peterson
& Sharlene Sing
Montana State University
Bozeman, MT

“Risk analysis can be used to make better decisions about agent releases, and, at the same time, can improve public trust in BC, ensuring its viability as a tactic within IPM.”

IOBC Awards Announcements: Distinguished Scientist Award

Distinguished Scientist Award

The IOBC-NRS is soliciting nominations for the 2007 Distinguished Scientist Award. Nominees must have spent most of their career in the Nearctic Region, and have made significant contributions to biological control, but need not be members of IOBC. Nominations are restricted to one page in length and should include the names and current contact information of both nominator and nominee, as well as a thorough but concise summary of the principle contributions of the nominee.

This is our organization's main way of telling people how much their work is appreciated. The recognition of those scientists who have made outstanding contributions to the science and implementation of biological control over extended and illustrious careers is an important function of IOBC. Many members have expressed their enjoyment of seeing colleagues honored with our Distinguished Scientist Award. Help us honor our deserving colleagues!

Please send nominations electronically by June 30, 2007 to the IOBC-NRS President, Marshall Johnson (mjohnson@uckac.edu)

IOBC-NRS Symposium at the ESA Meeting in San Diego, Dec. 9-12, 2007: "Biocontrol: Economic, Social and Ethical Factors Shaping its Success"

Biological control of pests, weeds and diseases represents a proven and safe alternative to synthetic pesticides and herbicides. Despite its success in a number of areas (agriculture, forestry, recreation, urban dwellings, etc.), only 2-3% of money spent on pest management is devoted to biological control, and this strategy has not been adopted to any significant extent. The success of biological control is strongly influenced by socio-economic factors that have little to do with biological control science. This symposium analyzes the context in which biocontrol researchers conduct their work to help them understand what non-biological factors need to be addressed for individual projects to succeed, and for the kinds of public and industry support that is necessary to achieve the potential of this science. This symposium will examine the interplay of economic, business, policy, and ethical factors shaping the adoption and development of biological control, and will discuss how the IOBC-NRS could foster public trust in it.

*Jean-Louis Schwartz
University de Montreal
Montreal, Quebec*

Meetings for the Datebook

Association of Natural Bio-control Producers Annual Meeting

Montreal, Canada
October 28- November 1, 2007
www.anbp.org/joint_meeting.htm

Theoretical Population Ecology & Practical Biocontrol - Bridging the Gap

Warwickshire, UK
December 5-6
www.aab.org.uk/contentok.php?id=46&basket=wwsshowconfdets

International Workshop on Biological Control of Invasive Species of Forests in the United States and P.R. China

Beijing, China
September 21-26, 2007
svinetfc2.fs.fed.us/biocontrol

Society for Invertebrate Pathology

Quebec City, Quebec
August 12-17, 2007
www.sipweb.org



Gypsy moth infected with a NPV. Photo by Joseph O'Brien.

RESEARCH BRIEFS

Vectoring of Fungal Agents by Bumble Bees for Pest Control and Disease

The ability of the bumble bee, *Bombus impatiens*, to vector *Beauveria bassiana* (an entomopathogenic fungus) and *Clonostachys rosea* (plant health inoculum) was investigated for control of *Trialeurodes vaporariorum*, *Lygus lineolaris*, *Myzus persicae*, and *Botrytis cinerea* in greenhouse tomato and sweet pepper. The effects of these two fungal agents on insect and disease pests, as well as on bee activity and pollination efficiency, were investigated in cages and in a commercial greenhouse system. Three concentrations of *Beauveria*/g of inoculum were tested for controlling pest insects, and a mixture of *Beauveria* (the intermediate concentration) + conidia of *Clonostachys*/g of inoculum was evaluated for simultaneous control of insect pests and grey mould.

Results showed that the intermediate concentration of *Beauveria* killed similar numbers of insect pests as did the high



A *Lygus* bug infected with bee-vectored *Beauveria*.

concentration (70 % *Lygus* and 54% whiteflies) but more than the low concentration (33% *Lygus* and 18% whiteflies). The fungal mixture killed the same percentage of pests as did the middle concentration of *Beauveria* when used alone, and suppressed 58 and 45% of the grey mould in

the flowers and leaves of both crops respectively. Bee mortality was greater in the high versus the middle *Beauveria* concentration (44% vs 13%), but no significant difference was found between the latter and the low concentration or controls.

The concentration of 6.24×10^{10} conidia of *Beauveria* was deemed to be the most efficacious; it killed high levels of pests, while having less effects on the bees compared with the highest concentrations. This study has demonstrated that bee vector technology could be a new integrated pest management tool that can be used to deliver microbial fungal control agents and plant health inocula, singly or in combination, for insect pest control and plant disease suppression for greenhouse tomato and sweet pepper.

Jean Pierre Kapongo,
Peter Kevan and Les Shipp
University of Guelph

Use of Predatory Mites in Strawberry Production

The two-spotted spider mite (TSSM) is a key pest affecting field and greenhouse commercial strawberry production worldwide. Foliar damage by TSSM feeding often results in reduced plant vigor and production. Reliance solely on miticides is difficult because spider mites frequently develop resistance to these chemicals. Researchers at the University of Florida and Clemson

University have demonstrated the effectiveness of using biological agents to control the TSSM. Releases of the predatory mite species, *Phytoseiulus persimilis* and *Neoseiulus californicus*, at various sites in Florida and South Carolina have been successful in reducing the impact of TSSM. The success of these natural enemies is related to the fact that they have a more rapid growth rate than

their prey, and these predatory mites have a high dispersal rate and capacity to find prey infestations in strawberry fields. For more information on TSSM biological control, visit: <http://edis.ifas.ufl.edu/hs245>

Silvia Rondon
Oregon State University
Oscar Liburd & James Price
University of Florida
Roger Francis
Clemson University

NEWSLETTER WRAP-UP

Some of the articles and events highlighted in this newsletter support an underlying theme of trust: who is it that biological control scientists need to earn trust from, and how do we go about gaining this trust.

As Bob Peterson and Sharlene Sing point out, the scientific community recognizes the ecological risks associated with tactics such as classical biological control. I don't believe that the criticism of ecological risk posed by BC is a paradigm shift by any means. However, biological control scientists need to be aware that the greater scientific community and the general public is watching us. In the current societal climate,

any releases of biological control agents that result in environmental harm are going to damage the science of biological control much more than a quietly successful program that poses minimal or no environmental risk.

So how do we maintain our credibility as a discipline? Conducting research in field crops, I can speak to the fact that biological control is not always an easy sell to farmers. The use of distance education to reach broad and diverse audiences, as summarized by Kevin Steffey, seems like a good starting place. This group's use of transparent educational tools is something that

many in our discipline will need to embrace and perfect if our science is going to retain its place of legitimacy.

I look forward to the IOBC-NRS symposium at ESA this summer, which will highlight some of the socio-economic factors that biological control scientists face as we head toward the future.

Jonathan Lundgren
IOBC-NRS Newsletter Editor
jlundgren@girl.ars.usda.gov

International Organization for Biological Control of Noxious Animals and Plants
Nearctic Regional Section
Organisation Internationale de Lutte Biologique Contre Les Animaux et Les Plantes Nuisibles: Section De La Region Nearctic

<http://www.entomology.wisc.edu/iobc.nrs.htm>
IOBC website: www.iobc.agropolis.fr



The International Organization for Biological Control—Nearctic Regional Section Newsletter is published 3 times a year in February, June, and October to provide information and further communication among members of the Region (Bermuda, Canada, and the United States).

Send items for the IOBC-NRS Newsletter

to:

Jonathan Lundgren

North Central Agricultural Research

Laboratory

USDA-ARS

2923 Medary Avenue

Brookings, SD, 57006

E-mail: jlundgren@ncarl.ars.usda.gov

International Organization for Biological Control
Nearctic Regional Section
c/o Jonathan Lundgren
NCARL, USDA-ARS
2923 Medary Avenue
Brookings, SD, 57006