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The Professional Pest Management Association of B.C.

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Past President's Message

Shannon Buckshaw

I would like to start by saying that it has been a great pleasure getting involved with the PPMABC and working on the executive. It has also been a great learning experience, as it is the first executive board I have sat on! So I thank the other members for supporting me and showing me the ropes. Since I did not write a "Presidents Message" for last season's Pesticulars I should probably introduce myself…

I graduated from the UBC Department of Agriculture with a BSc. In Global Resource Systems. Global Resource Systems is an interdisciplinary degree which allowed me to take a mixture of agriculture, conservation biology and international development related courses. After graduation I really wanted to gain some practical field experience so I took a summer field position with E.S. Cropconsult Ltd. working as an integrated pest management consultant in cranberries and blueberries. It is a great balance of field work and research, gaining experience and learning new things about pest management. This past year I learned a lot about biological controls used in different sectors and in different parts of the world.

Last spring, I went on a biological control tour in Cuba, where we visited several regions of the country learning about agriculture in Cuba and the production and use of biological controls for pest management. We visited amazing urban gardens or organoponicos, which produce a variety of products for the local community such as fruit, vegetables, herbs, medicinal plants, and flowers. We had the opportunity to visit some national and provincial research and biocontrol production facilities as well as some smaller CREE's (Centre for Research of Entomopathogenic and Entomophagous Agents) that produce biological control products for local growers. It was really inspiring to see how prolific the use and production of biocontrols were here. The systems approach I had learned so much about in university seemed to be a reality here.

This winter I assisted in the coordination for the Kwantlen University College Biological Control Workshop and Seminar Series. It was a great opportunity to learn about the biology, history and research into biological control agents both locally and internationally. The Institute for Sustainable Horticulture Chair, Deborah Henderson invited the PPMABC to hold their AGM in conjunction with the Kwantlen seminar. The PPMABC executive thought it would be an interesting opportunity not only because of the

content of the seminar, but we also saw it as a chance to present ourselves at Kwantlen and perhaps to a different audience. I think it was successful in that respect. Kwantlen students and faculty were introduced to the PPMABC as well as people from other industries, like the greenhouse and nursery sector. A disappointment was not having the student presentation component. A student poster presentation was planned, but we were not able to gather enough participants in time. The student presentations are an important component of the PPMABC AGM and a tradition we are planning to continue with.

Again, I have really enjoyed getting to know members of the executive and meeting various members at annual AGM's. It is really great to keep informed about pest management research going on in the different sectors and at the Universities. I look forward to being a long-time member!

Sincerely,
Shannon Buckshaw

2007 AGM

This year's PPMABC Annual Conference and General Meeting, themed 'IPM on the Frontlines', was held on February 2, 2007 in conjunction with Kwantlen University College's Biocontrol and Seminar Workshop series.

Abstracts
Parasitoid Biocontrol Seminar Abstracts

Efficacy of biologicals and low-toxic chemicals for control of rose midge and other pests of hybrid roses and evaluation of black vine weevil traps and a predictive degree-day model for BVW larvae at an ornamental nursery
Dr. Janice Elmhirst, Elmhirst Diagnostics & Research

Steinerema feltiae nematodes and *Hypoaspis* sp. predatory mites had no effect on rose midge (*Dasineura rhodophaga*), or other rose pests. DOKTOR DOOM™ domestic-labeled (RTU liquid permethrin) was effective in both a foliar and soil-drench application; as was AVID (abamectin) acidified to pH 5.0 and MATADOR (cyhalothrin-lambda) at the low rate, 83 mL/L. Methods for trapping black vine weevil (*Otiorhynchus sulcatus*) adults were evaluated at a commercial ornamental nursery in Langley in 2006. Burlap sacking worked as well, or better, than any other trap. A predictive model for egg-hatch, based on date of first adult trap catch and degree-days from a regional weather station gave a reasonably good estimation of first larval hatch in a nursery crop, which might be used to time application of predatory nematodes. The model needs to be tested and validated.

CHEMPROCIDE (7.5 % DDAC) as a potential fungicide for diseases of ornamental plants
Dr. Janice Elmhirst, Elmhirst Diagnostics & Research

In terms of quantity, didecyl dimethyl ammonium chloride (DDAC) is the largest single fungicide used in British Columbia. As BARDAC 2280, it is used in the lumber industry as an anti-sapstain product. CHEMPROCIDE 7.5 % DDAC, a less concentrated formulation, is used as an antimicrobial structural disinfectant in greenhouses, food processing, hospitals, etc. In recent years, several studies have been conducted in British Columbia on the efficacy of CHEMPROCIDE as a potential treatment for control or suppression of diseases of ornamental plants. Good control of Fusarium wilt of cyclamen and suppression of Botrytis grey mould of geranium and powdery mildew of rose has been obtained, at concentrations not injurious to plants.

Our Future Forests – pest management versus forest succession. Do we have a choice?
Dr. Lorraine Maclauchlan, Forest Entomologist, BC Ministry of Forests and Range

In the past two decades British Columbia has experienced unprecedented outbreaks of defoliators, such as the western spruce budworm, and bark beetles. Currently BC is experiencing concurrent outbreaks of mountain pine beetle, western pine beetle, spruce beetle, Douglas-fir beetle and the western spruce budworm. Past forest management, including fire suppression, harvesting and other activities in our forests could in part be factors in these events. However, the influence of man aside, BC has a vast inventory of aging forests spread across the landscape. These aging forests coupled with changing climate patterns have been conducive to the building and spread of many forest insect pests.

I will give an overview of the current situation in BC with emphasis on the mountain pine beetle and western pine beetle situation. I will then focus on the impacts and repercussions of mountain pine beetle in our young pine stands.

IPM in aquaculture
Dr. William Heath, Shellfish Production Specialist, BC Ministry of Agriculture and Lands

From sea lice to epiphytes; control of pests in aquaculture requires extensive planning and resources in an attempt to protect stocks. Stock losses resulting from pests can range from negligible to 100% depending on the aquaculture species and level of pest management. The presentation will provide insight on some of the pests associated with finfish, shellfish, and marine plant aquaculture and how those pests affect food production.

Biology and diversity of parasitoids
Dr. Guy Boivin, Research Scientist, AAFC Saint-Jean-sur-Richelieu, Quebec

The parasitoid lifestyle regroups about 10% of all described insects. Parasitoids are found in six different orders and they have little in common except their lifestyle. We will look at the diversity of life history of parasitoids and their hosts. The evolution of insects and the rise of parasitoids will also be presented. Finally we will look at a rare example where the transition from a predator to a parasitoid occurred. The genus of Coleoptera: Aleochara comprises only parasitoid species except for a relict species that shows the transition between being a predator-scavenger and becoming a parasitoid.

Bug Gardens as a Tool in Urban Pest Management Education
James A. Matteoni and Michelle Nakano, Kwantlen School of Horticulture and Institute for Sustainable Horticulture, Surrey, BC

Bug Gardens are relatively small landscape demonstration plantings designed to help bring the concepts of conservation biological control to practice in the horticulture industry and general public. They are approximately 200 m^2 is size and include a variety of plants reported to attract, or enhance populations of biological control agents. The pest complex chosen is an aphid predator parasitoid complex. This includes principally the green peach aphid *Myzus persicae*, and the biological control agents *Aphidius* spp., *Aphidoletes aphidimyza*, lady bird beetles of various species. Some of the potential research and educational applications will be presented.

Pests of confined livestock and the role of parasitoids in management
Dr. Tim Lysyk, Research Scientist, AAFC Lethbridge, AB

This talk will focus on the role of pteromalid parasitoids in biological control of the livestock pests house fly and stable fly. These flies are pests principally in confined livestock systems such as poultry, swine, and dairies. Management practices such as chemical and cultural controls can be designed and implemented to avoid interference with biological control efforts. The success of inundative release programs in various location in North America and Europe will be discussed. Limitations and considerations to the approach will also be mentioned.

***Trichogramma* use in cranberry and raspberry**
Dr. Deborah Henderson

Influence of *Wolbachia* infections on biological control by parasitoids
Dr. Rob McGregor, Douglas College

Wolbachia infections are common in insects and cause a range of reproductive effects. Both cytoplasmic incompatibility and parthenogenesis induction have been shown to occur in parasitoids. Because infections directly affect parasitoid reproduction, *Wolbachia* can influence the success of biological control programs. Biological control practitioners should (1) determine the infection status of biocontrol organisms, (2) evaluate the reproductive and physiological effects of infection, and (3) monitor the influence of infections on biocontrol efficacy. Strains of *Trichogramma sibericum* used for inundative releases in British Columbia are infected with parthenogenesis-inducing *Wolbachia*. Egg load and wing size were compared between infected and cured strains of T. sibericum. *Wolbachia*-infected females have reduced egg load compared to cured individuals. No differences in wing size were detected between infected and cured strains.

Banker plants, refugia, and parasitoids
Andrea Davenport, Koppert Biological Systems, BC

Parasitoids for pest management in orchards
Dr. Joan Cossentine, Research Scientist, AAFC, Summerland, BC

Orchards are relatively stable and complex agro-ecosystems and consequently have the capacity to support a large number of beneficials as well as pests. The heavy use of broad spectrum chemical insecticides previously limited the survival of parasitoids within chemically treated orchards but with the availability of alternative insecticides, the area-wide codling moth control program and mating disruption, parasitoids now can and do play important roles in apple orchards. Two examples of successful parasitism within apple orchards in the interior of British Columbia will be presented: the fortuitous classical introduction of leafminer parasitoids; and the leafroller parasitoid complex. How these parasitoids can be used as pest management tools will be discussed.

New regulations for biocontrols in Canada
Dr. Guy Boivin, Research Scientist, AAFC Saint-Jean-sur-Richelieu, Quebec

The Canadian Food Inspection agency is the federal agency responsible for the application of the Plant Protection Act that regulate the importation and release of arthropod biological control agents. The petitioning process has recently been modified to harmonize it across North America. In 2006 a guide has been published to help petitioners gather all data necessary

for a petition and to prepare a successful petition. We will look at the objectives of this regulation and the different steps in preparing a petition to import a parasitoid into Canada.

Potential of *Campoletis sonorensis* (Hymenoptera: Ichneumonidae) as a biological agent of the Cabbage Looper, *Trichoplusia ni*
Henry Murillo, University of Windsor

Cabbage Looper (CL), *Trichoplusia ni* is one of the main insect pests in the greenhouse vegetables in Canada, which is regulated by continued sprays of the biological agent *Bacillus thuringiensis* (Bt). Because no more biological agents have been proved effective against CL in the Leamington area and because CL is developing resistance to Bt, the Greenhouse Grower Community is claming for new biological agents that can be integrated into their biological control programs. Since 2002, the widely distributed general endoparasitoid *Campoletis sonorensis* (Cs) has been found naturally parasitizing CL in greenhouse and field vegetables in the Leamington area. After two years (2005 – 2006) of CL larvae parasitoids survey in conventional field and greenhouse tomato crops, Cs has been found as the most common natural bioregulator of the CL populations in fields and the only parasitoid found into the tomato greenhouses. The preliminary results at evaluating the potential of *Campoletis sonorensis* as host size preference, fecundity, and functional response on CL will be presented.

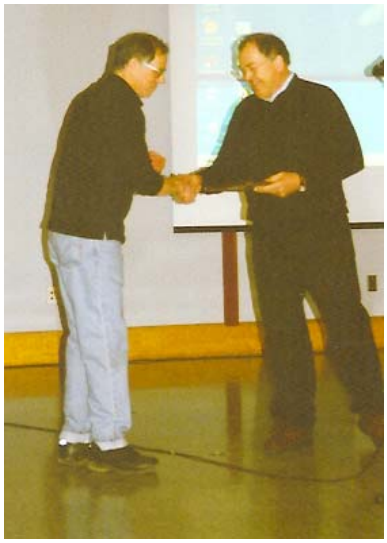
Effects of cold storage, fluctuating symmetry
Dr. Guy Boivin, Research Scientist, AAFC Saint-Jean-sur-Richelieu, Quebec

Storage of parasitoids, either as immatures or adults, is a common procedure used by commercial companies to spread the production period and store insects prior to distribution and use. It is known that prolonged storage incurs costs such as decreased longevity and fecundity or increase in the proportion of deformed individuals. We showed that cold storage as an immature of *Anaphes victus* (Hymenoptera: Mymaridae), an egg parasitoid of weevil's eggs, results in a decrease in parasitism efficacy not because of a physiological effect but rather because of a modification in the behavior of the insect. The females that were stored at low temperature as larvae learned less rapidly and changed their host evaluation behavior. This decrease in efficacy is undetectable when standard physiological parameters are measured.

Using *Trichogramma* in the greenhouse
Dr. Renee Prasad and Dr. D. Henderson

Awards

This year's recipient of the ***Phero Tech Award*** was Lorraine Mclaughlan, presented by John Borden.



Art Guité presented this year's ***Honorary Lifetime Award*** to Bob Costello.

AGM Sponsors
Thank you to our sponsors for this year's AGM:

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The PPMABC is looking for companies who would be interested in sponsoring or co-sponsoring a coffee break or lunch at next year's AGM in return for advertising space. Morning coffee with muffins costs $300, mid-morning and afternoon coffee costs $200 and lunch costs $1000. If interested, please contact Rob McGregor (ppmabc@sfu.ca).

Election

Also at this year's AGM, candidates for positions on our executive were elected or appointed. A big 'thank you' to our outgoing executives as we welcome our new executive committee.

President: Rob McGregor, MPM, PhD

Has spent much of his career studying integrated pest management of agricultural pests with a focus on biological control. Since 1999, Rob has been a faculty member in the Biology Department at Douglas College where he is also Director of the Institute of Urban Ecology. Current research includes projects on biological control of tomato psyllid, conservation biological control in community gardens, ground beetles in urban riparian habitats, and reproductive parasites of *Trichogramma* wasps. Rob previously served as Membership Director of PPMABC and is currently a member of the Board of Directors of the Entomological Society of BC.

Vice President: Todd Kabaluk

Currently working as a Research Biologist at Agriculture and Agri-Food Canada in Agassiz, Todd is currently researching the use of *Metarhizium anisopliae* for wireworm control in potato and corn, and for black vine weevil control in strawberry and raspberry. To facilitate and promote the use of microbials for pest control, he co-authored 'Directory of Microbial Pesticides for Agricultural Crops in OECD Countries' as a resource for researchers, regulators, and industry. He has an ongoing interest is in insect sampling statistics and population dynamics using data acquired from pest management companies.

Past President: Shannon Buckshaw

For the past three years, Shannon has been working as an Integrated Pest Management Consultant with E.S. Cropconsult Ltd. in the Lower Mainland, focussing on cranberry pest management and research. *(See President's Message above).*

Treasurer: Tammy McMullan, MPM

Currently a Senior Lecturer at SFU: since 1988, Tammy has taught a wide range of courses, including graduate-level field courses in pest management. Tammy has held numerous Research Assistant positions and been involved in several research projects on a wide variety of insect pests, served as Director of the BC Entomological Society, and has previously held two PPMABC executive positions: Secretary (1989, 1990), and Student Representative (1988).

Secretary: Melanie Hart, MSc

Currently working on her PhD in the Gries' Insect Communication Ecology Lab at Simon Fraser University, she's previously served the PPMABC as the Student Representative and editor of *Pesticulars*.

Membership Director: Nadene Sawyer

A MPM graduate from Simon Fraser University, currently working for ES Cropconsult where she has coordinated a program to introduce IPM and pesticide safety awareness to Asian grower groups. Nadene also works as a pest management consultant for greenhouses in the BC lower mainland.

Student Representative: Tom Cowan

Currently enrolled in the Masters of Pest Management program at SFU researching methods of controlling the Indian meal moth. Before entering the MPM program, Tom was working for the Ontario Ministry of the Environment as a Pesticides Specialist, and has also worked in agricultural, greenhouse, and nursery pest management.

Pesticulars Editor: Alex Chubaty

Currently working toward his MSc with Dr. Bernie Roitberg (Simon Fraser University, Vancouver) and Dr. Chao Li (Northern Forestry Centre, Edmonton). Alex's research incorporates empirical and theoretical studies on host-selection behaviour of mountain pine beetle. He is new to the PPMABC, and also serves as the new webmaster.

Endnotes

Electronic Publishing

Pesticulars is now an electronic publication. To ensure that you receive your copy, please send us an updated email address. Email addresses and mailing information (for ballots and voting information) can be sent to Nadene Sawyer (ppmabc@sfu.ca).

Website

Our new website address is www.sfu.ca/~ppmabc/. Check it out for information on our association, contact details, copies of *Pesticulars*, and upcoming events.
Webmaster: Alex Chubaty (achubaty@sfu.ca).

Pesticulars Submissions

We are always looking for pest management topics to publish. If you or know of others who have information to relay, exciting research to share, or upcoming events that you would like posted in one of our issues, please contact Alex Chubaty (achubaty@sfu.ca).