

Pesticulars

The Professional Pest Management Association of B.C.

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Consider the member benefits

- Admission to the Annual Symposium and a copy of the proceedings, which has gained a reputation for strong agendas and interesting speakers
- An established means for communication amongst your professional peers
- Collective voice for advocating the pest management approaches you believe in: see our Mission Statement
- Your copy of *Pesticulars*, the popular PPMA newsletter, published twice a year, including the Annual Symposium proceedings
- A facility to shop your resume in case you are looking for employment
- A venue for students to talk about their research
- And ... the lowest membership fee for any professional organization ... *on the planet*

www.sfu.ca/~ppmabc/

President's Message

Victoria Brookes, President

It has been a daunting task to be PPMABC president and associate with so many talented people. Pest management affects many aspects of our lives, from the places where we live and work, to the world around us and world food production.

Our organization is a positive reflection of the people and methods of dealing with various pests in many areas spanning agriculture, floriculture, and silviculture. We provide a forum that allows examination and discussion of these pest issues. I encourage you to become involved with the PPMABC where there is a wealth of information to be gained. The world is in a delicate position and decisions made in the foreseeable future will determine whether we will have a viable and sustainable future.



The executive is working hard to develop the program for our upcoming annual general meeting and symposium to expand on our pest management knowledge. We have booked a special guest speaker, Dr. Luciano Rovesti, who has worked in several developed and developing areas of the world, most recently Sri Lanka. He will be presenting the McCarthy lecture at our symposium at Kwantlen Polytechnic University and will be able to give us information on how he has been able to use his knowledge in developing sustainable programs for pest control.

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Summary of the 2009 ESBC AGM

Wim van Herk, Secretary

The 2009 AGM of the Entomological Society of BC was held in Kamloops, this year. The meeting, on October 2, was held at the Henry Grube Education Centre, located a short walking distance from the picturesque confluence of the two Thompson rivers. Eighteen presentations were given; topics ranging from emerging insect pests in BC to species at risk, from the effect future climate change may have on parasitoid behaviour to the diversity of insects found at the MacAbee fossil site. Below follows a brief summary of some of the talks more relevant to pest management in BC.

The first talk, by **Tom Lowery**, discussed grape pests in BC. While increased travel results in increased pest introductions, new pests also emerge as native species adapt to new hosts and as new biotypes or races of existing insect species develop. One species that is likely to become a grape pest this way is the oblique-banded leafroller, *Choristoneura roseceana*. Candidates for developing a new biotype and breaking resistance include grape phylloxera, *Daktulosphaira vitifoliae*, and grape erineum mite, *Colomerus vitis*. Possible new pest species include the European chafer, *Rhizotrogus majalis* (which has already made landfall in coastal BC) and a variety of lepidopteran, coleopteran, and homopteran pests. Leafhoppers are an additional concern for grape growers as they may vector phytoplasmas.

Also discussing new and current pest issues in the BC Interior was **Susanna Acheampong**, provincial entomologist for BCMAL at Kelowna. Among current pest issues discussed were: 1) Apple clearwing moth, *Synanthedon myopaeformis*, recorded in Kelowna in 2008, and difficult to control as the only registered insecticide (Entrust) is applied as a trunk spray; 2) Apple leaf curling midge, *Dasyneura mali*, reported in the Interior, and also difficult to control—the midge shelters in curled leaves and parasitoids are effective only for taking out the first generation; 3) Woolly apple aphids, *Erisoma lanigerum*, which causes galling and splits the bark of apple trees; 4) Western grape rootworm, *Bromius obscurus*, reported on raspberry, which is not supposed to be a host plant; 5) Grasshoppers, particularly red-legged, two-

striped, clearwing, and migratory grasshoppers—the main problem being that producers wait too long before contacting pest managers, by which time the insects have reached their last instar and are capable of flight; 6) Spotted-wing *Drosophila* (*Drosophila suzukii*) found damaging fruit in Abbotsford in September 2009. This last pest is of particular concern as (unlike most other *Drosophila* spp.) it attacks ripening fruit, including cherry, raspberry, blueberry, blackberry, and strawberry.

Ayman Mostafa discussed the identification and biology of climbing cutworms found on grapevines in the Okanagan Valley. Fifteen economic species were identified in recent years, with several species from the genus *Abagrotis* being particularly worrisome as they have high fecundities. Surprisingly, these cutworm species are attracted to annual winter mustard plants (e.g. shepherd's purse, *Capsella bursa-pastoris*, whitlow-grass, *Draba verna*), preferring them over grape buds in choice tests, even though these native mustards kill them. Both plants naturally occur in vineyards, but unfortunately growers usually kill the plants in order to have clean rows.

Sheila Fitzpatrick and her students **Melissa Cook** and **Dan Peach** discussed the cranberry tipworm, *Dasineura oxycoccana*. This gall midge, which completes its entire development in 3-4 weeks, lays eggs in the shoot tips of cranberry plants, where larval feeding leads to leaf curling and tip deformation. **Sheila** discussed her study of female calling behaviour (pheromone release to attract males), a preliminary step towards isolating tipworm pheromones which can be used to create IPM tools (e.g. monitoring). Under laboratory conditions tipworm females were found to call in the mornings.

Since tipworms also attack blueberry plants, which belong to the same genus (*Vaccinium*) as cranberry but have a very different phenology, it is possible that tipworm evolves and/or behaves differently on the two plants, and likely that host races develop in the two plant species. To study this, **Melissa** compared the tipworm presence in both blueberry and cranberry fields throughout the summer and observed important differences: tipworm females lay their eggs in clusters on

* For more information on spotted-wing *Drosophila*, visit http://www.sfu.ca/~ppmabc/en/MEMO_SWD_2009.pdf

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blueberry plants, but singly on cranberry plants; tipworm larvae reared on blueberry plants pupate in the soil, but those reared on cranberry plants pupate on the plants. **Dan** shared the finding of at least two tipworm parasitoid species in the course of the summer's research. These tiny (1-2mm) parasitoids may be hitherto undescribed species.

Summary of the 2009 Western Pest Forum

Markus Clodius, Membership Director

From October 15th to the 21st I was in Winnipeg, to attend a pair of national meetings being held there back-to-back. The first meeting was the Western Forum on Pest Management. This is open to anyone who works in agricultural pest management in BC, Alberta, Saskatchewan or Manitoba. On the first day, attendees split up into entomologists (who attended the Western Committee on Crop Pests) and pathologists (who attended the Western Committee on Plant Disease) to present summaries of pest outbreaks and current research going on in each province, hear reports from CFIA and PMRA, and discuss special topics and other business. Since I attended the WCCP, the following is a summary of that meeting only.

The BC Ministry of Agriculture and Lands reported that this year grasshoppers continued to be an issue in dry interior regions, and *Lygus* bugs were a problem in canola in the Peace River region. Apple clearwing moths were a problem in the Similkameen valley, Oliver and Kelowna. In the coastal region, new pests included flower thrips in strawberry, European blackberry leaf midge in *Rubus*, yellow spider mite in raspberry, and spotted-wing *Drosophila* in berries and soft fruit. Surveillance for Swede midge continues in cole crops, eradication for North American gypsy moth in a Harrison hazelnut orchard is underway, and apple maggot is still limited to the coastal areas of BC.

In Alberta, cabbage seed pod weevil caused the greatest economic losses in canola crops in 2009. Localized outbreaks of grasshoppers also caused concern, and flea beetles, *Lygus* bugs, wireworms, and cereal leaf beetles were reported and discussed. Saskatchewan experienced a cool summer and a very warm September, which did not favor insect pests and caused low pest pressure on most crops. Damage was reported

from cutworms, pea leaf weevils and cabbage seed pod weevil, and ground squirrels continue to cause problems. Manitoba reported economic losses from aphids and thrips in cereal crops, though flea beetles and cutworms caused problems in canola and sunflower fields also. Cereal leaf beetle was also discovered in Manitoba for the first time this year.

The research reports from each province were fairly extensive, and I can't summarize them here. Dave Holden then gave a summary of CFIA's 2009 pest insect surveys, which included forestry pests such as emerald ash borer and gypsy moth, as well as blueberry maggot and other crop pests. Dave also elaborated on the finding of spotted-wing *Drosophila* mentioned in the BCMAL report: this was detected very recently in North America, but the Fraser Valley is one of the places where it was found*. Dean Morewood from PMRA then presented the emergency pesticide registrations granted in 2009, and discussed the program for User-Requested Minor Use Label Expansions.

The second day was a common meeting of both groups to deal with association business and present joint technical reports and special topics. Notable here was an update on progress on biopesticide registrations, a report on the 'WeatherBug' monitoring network created by the Canadian Wheat Board, and a presentation on club root disease management in Alberta.

From Sunday to Wednesday, I was then at the joint meeting of the Entomological Societies of Canada and Manitoba. The full program, including abstracts, is available at the ESM website** so I won't provide an outline of it, but I will add that I very much enjoyed the meeting (Winnipeg in October is not as cold as I feared), and encourage anyone who can make it to attend the next ESC meeting in Vancouver, October 31st to November 3rd, 2010.

* For more information on spotted-wing *Drosophila*, visit http://www.sfu.ca/~ppmabc/en/MEMO_SWD_2009.pdf

** Programme for the 2009 ESC Meeting available at http://home.cc.umanitoba.ca/~fieldspg/ESC2009_files/program.pdf

Professional Pest Management Association of British Columbia

Call for submission of oral presentations
2010 Symposium

Wednesday, March 31, 2010
Kwantlen Polytechnic University (Langley)

Student Awards Presented

Submit title, authors, abstract (50 words),
and contact information by March 1, 2010

ppmabc@sfu.ca

www.sfu.ca/~ppmabc/



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Featured Lab – Deborah Henderson

*Institute for Sustainable Horticulture
Kwantlen Polytechnic University*



The Institute for Sustainable Horticulture at Kwantlen Polytechnic University officially opened its new research laboratory on October 16, 2009. The state of the art 424 m² facility will focus on identifying and developing new microbial biocontrols

and bioproducts (biopesticides), and has the capacity to produce early commercial stage quantities of both fungal and viral entomopathogens. The new facility will allow researchers to take potential products through the entire developmental process -- from discovery through registration.

Two separate lab areas are housed within the ISH Research Facility. The Microbiology Lab (pictured right) includes research and production space, with a series of climate controlled fungal production rooms. The fungal production suite contains a separate harvesting room with equipment capable of handling up to 50 kg of solid substrate daily. Liquid fermentation is also possible with two 10 L capacity fermentors and several spinner flasks. The Entomology Lab contains four climate-controlled insect rearing rooms, to facilitate research and small scale production of insect predators and parasitoids. A suite of four climate controlled rooms for virus production are also associated with the entomology lab. A sophisticated HVAC system provides a separate air supplies to each lab and production suite to minimize contamination risks.

A sample processing room with a walk-in refrigerator and a wash-up area with a steam sterilizer are located between the labs. A Molecular Identification Lab equipped with Real-time Polymerase Chain Reaction technology supports development and quality control of new products, and three plant growth chambers are also available for research.

The research program at ISH is closely linked to the School of Horticulture at Kwantlen Polytechnic University, thereby providing students with diverse internship, research and learning opportunities. Current research in the ISH lab, collaborations between Kwantlen and external researchers, includes, optimization studies for production of 4 fungal entomopathogen strains, development of novel entomopathogen delivery methods, rearing of *Trichogramma sibiricum*, biocontrol of fungus gnats and trials with biopesticides of potential value to agriculture. Additional projects are planned for January 2010 when the lab will host its first Post Doctoral Fellow as well as a student intern from Kwantlen's Environmental Technology program. In early 2010, construction of a 500 m² research greenhouse with four compartments and geothermal heating will be complete, providing support for the product development activities in the lab, a site for exploring alternative energy systems for closed and semi-closed greenhouses and new cropping systems to take advantage of them.



The ISH Research Facility has been funded by the Canadian Foundation for Innovation, the BC Ministry of Advanced Education, Kwantlen Polytechnic University. The Directors position is the provinces most recent LEEF Regional Innovation Chair and was the result of donations from local farmers, private donors and the Kwantlen Polytechnic University Foundation. Two major research proposals are currently in progress to fund additional research in the new facility.

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For more information on the new ISH lab, or to arrange a tour of the facility, please contact:

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If you would like to recommend a lab to be featured in a future issue of *Pesticulars*, we welcome suggestions for highlighting ongoing research in pest management. Please contact Alex Chubaty (ppmabc@sfu.ca).

Call for nominations – Contech Award

We are seeking nominees for the Contech Award (formerly the Pherotech Award) for 'significant contributions to pest management', to be awarded at our symposium on March 31, 2010. If you would like to nominate someone, please contact ppmabc@sfu.ca.

Nomination deadline: March 1, 2010.

<http://www.sfu.ca/~ppmabc/en/pheroaward.html>

Endnotes

Upcoming Events and Meetings

- Pacific Agriculture Show
28-30 January 2010, Abbotsford, BC
<http://www.agricultureshow.net/>
- Pest Management Canada
04-06 March 2010, Ottawa, ON
<http://www.pestworldcanada.org/cpma/events/>
- 56th Annual Soil Fungus Conference
22-24 March 2010, Mount Vernon, WA
<http://soilfungus.ars.usda.gov>
- PPMABC Symposium
31 March 2010, Langley, BC
<http://www.sfu.ca/~ppmabc/en/meetings.html>
- Climate Change and the Implications for Plant Protection Symposium
25-27 May 2010, Guelph, ON
<http://www.cropprotection.open.uoguelph.ca>
- Canadian Phytopathological Society
20-23 June 2010, Vancouver, BC
<http://www.cps-scp.ca/meetings.shtml>
- America Phytopathological Society
07-11 August 2010, Nashville, TN
<http://meeting.apsnet.org>
- Entomological Society of Canada
31 October - 04 November 2010, Vancouver, BC
http://www.sfu.ca/biology/esbc/JAM/jam_announce.html
- Canadian Weed Science Society
16-18 November 2010, Regina, SK
<http://www.weedscience.ca/events>

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 Markus Clodius (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).