Agriculture et Agroalimentaire Canada Agri-Food Canada



# The Pest Management Newsletter

News from the Agriculture and Agri-Food Canada Pest Management Centre Vol 2 No 2 Fall 2009

# A Message

Agriculture and

From the Executive Director of the Pest Management Centre

I was very pleased to accept the responsibilities of **Executive Director** of the PMC in April, 2009. A little bit about myself: I was educated in India, where I obtained a degree in Veterinary Sciences and a Master's in Veterinary Public Health, followed



by a Doctorate in Veterinary Immunology from the University of Saskatchewan. I have worked for the federal public service for 19 years, most recently as Director of Research and Development at the Canadian Food Inspection Agency. Over time, I have developed a strong regulatory background and a commitment to science-based results, and I am a strong advocate of knowledge transfer and the utilization of improved practices.

During my first few months as Executive Director, there have been many changes in the PMC's organizational structure. We have recommitted to improving the competitiveness of our growers by providing them with proven reduced-risk strategies and with timely access to new and improved pest management tools and technologies.

Given that the PMC is only six years old, my first priority as Executive Director was to assess the strengths and weaknesses of our systems. As a result, the PMC has now taken three major steps toward improving program stability and accelerating our work on behalf of the agricultural sector. These include addressing the backlog of minor use projects by using a targeted action; reorganizing our internal structure to make more staff available in areas where they are needed; and providing our staff with career-advancing opportunities within the PMC as a means of retaining their skills and experience.

As you know, our work is grower-driven. We have bolstered stakeholder consultations with growers, with the provinces, and with the PMC's Advisory Committee and Technical Working Groups in order to build on our existing strengths and achieve our goals. I also intend to continue developing the PMC's excellent working relationship with the Pest Management Regulatory Agency (PMRA) and with our IR-4 partners in the U.S.

Through this newsletter, I will continue to share with you the issues, challenges, solutions and progress of the PMC's work on behalf of growers.

Finally, my appointment coincides with the launch of AAFC's **Regulatory Action** Plan under the new Growing Forward policy framework, and I look forward to working with all stakeholders to provide viable solutions for grower needs and to enhance the innovation, competitiveness and environmental sustainability of Canadian agriculture.

#### Contents

A Message From the
Executive Director of
the Pest Management Centre1
Setting Our Course2
Great Scott!3
Hands Across the Border4
Our New Pesticide Risk
Reduction Manager5
Pest Control the Natural Way5
What's New on the PMC
Website6
Calendar of Events6
People on the Move6
2009 Regulatory Submissions
and Registrations7





#### Setting Our Course The 2009 Minor Use Priority Setting Workshop

Every year, the PMC hosts the Minor Use Pesticide Priority Setting Workshop to identify the most immediate and serious pest problems faced by Canadian growers and to select priorities for the Program to address. The 2009 Workshop was held from March 23 to 25 at the Hampton Inn Ottawa and attracted more than 200 participants, including growers, grower associations, pesticide manufacturers, the PMC and the PMRA

Like its predecessors, the 2009 Workshop used input from all participants to choose top-priority research projects aimed at securing the registration of new minor use controls for specific insects, diseases and weeds. In addition, the participants selected priority projects for the organic sector and chose regional priorities for various areas of the country.



Registration for the 2009 Canadian Minor Use Pesticide Priority Setting Workshop

The 2009 event established a set of 38 priorities that cover a wide variety of pest problems ranging from downy mildew in bulb vegetables to weed infestations in forage grasses. Selecting a relatively small number of key projects from a national list of several hundred candidates is no trivial task, but the organizers and the other participants nevertheless managed to complete their work by the time the 2009 Workshop was over.

#### Coordinating consensus

According to Jim Chaput, one of the Provincial Minor Use Coordinators, this achievement was the result of very thorough preparation. "At the end of each calendar year," he says, "we collect information from producers across Canada to create a national minor-use priority list, which we then submit to the PMC. Next, we try to facilitate discussions among the provinces and the various commodity groups so we can reach a general consensus even before the current year's workshop takes place. Then, during the event itself, we make sure that everybody focuses on the problems that were identified as the top priorities, either in specific jurisdictions or at the national level."

In Chaput's eyes, the 2009 Workshop was especially rewarding. "We were very successful in identifying the major problems affecting a variety of Canadian commodities. We also got several projects onto the books to deal with pests that affect whole crop groups, rather than a smaller number of individual crops. That alone is a huge benefit."

Addressing growers' most troublesome pest problems isn't the only positive outcome of the workshops. Like previous events, the 2009 meeting was the year's major opportunity for the participants to gather under one roof so they could talk to each other about their concerns and share their experiences. That kind of face-to-face communication is very important for bridging gaps and for exchanging information about vital pest management needs.

#### The view from the field

That is certainly the view of Greg Norton, who represented the Okanagan Kootenay Cherry Growers' Association at the 2009 Workshop. The Association has about 80 members, who account for about half of British Columbia's cherry production and almost all its cherry exports.

"We're primarily a research group," Norton says, "and we work mostly with scientists at the Pacific Agri-food Research Centre to find answers to our pest problems. These workshops are absolutely vital to us, not only because they give us access to a system for registering new products, but also because they link us to companies, researchers and other growers who can provide us with resources for our own research. Those relationships are invaluable for future projects and for understanding how we can find better pest controls for cherry growers. This year, for example, we're focusing on summer oils to control both insects and powdery mildew, and the 2009 Workshop has given us an opportunity to talk to other participants about what we're doing in that area."

Charles Stevens is also enthusiastic about the workshops, and the 2009 meeting was the third in which he has participated. He attends in his capacity

as Crop Protection Chair for the Ontario Fruit and Vegetable Growers' Association, and is himself a grower of blueberries and apples. "Crop protection materials are probably the most important tools we growers use in our operations," he observes, "and these workshops are definitely the place to find the most up-to-date tools. All the major pesticide companies attend, so we can get a preview of new products that are going to be registered. The workshops are usually where growers first have access to that information, and finding out about a product well before it's registered can be a real advantage for us. Just as important, the workshops give us a major opportunity to tell the government what's economically important to us, and that helps ensure that the products that are registered are at the top of our priority list."

Jeff Wilson of the Fresh Vegetable Growers of Ontario (he also represented Ontario asparagus growers at the 2009 Workshop) has a similar view. "We need to explore every opportunity to get new pest controls into our growers' hands," he says. "We come to the workshops because they're an excellent venue for making our voices heard, and for becoming involved in the search for solutions that will help our growers. Cabbage maggot is a priority for us this year, for example. It also appears that asparagus miner is going to an issue down the road, because we suspect it's the reason that asparagus plantings start to fail after 10 to 15 years. The 2009 Workshop has been a place where we can draw attention to this bug, and start looking for the resources to make a concerted attack on it."



Registration for the 2009 Canadian Minor Use Pesticide Priority Setting Workshop

In the larger perspective, the 2009 Workshop and its predecessors form a vital link in the process that ultimately gives Canadian producers the tools they need to remain competitive at home and abroad, while ensuring that those products are safe for both growers and the environment. Charles Stevens, for his part, puts a high value on the 2009 event and recommends the workshops as extremely worthwhile. "In fact," he says, "I'd like to see two or three times as many growers attending them. If you're concerned about a product you're using, or if you're having real economic hardship because there's an effective product but it's not available in Canada, then you should be at these meetings. Any grower can go to one and speak up. It's a place where you'll be heard, and a place where your voice can make a difference."

# **Great Scott!**

Originally established in 1910 as the Scott Experimental Station, the Scott Research Farm is located about 175 km west of Saskatoon, almost at the geographic centre of Canada's Great Plains. In its early years, the Research Farm (or "Scott," as it's familiarly called) was a leader in horticulture, livestock feeding and crop rotation.

Among Scott's long-lasting achievements are the Rescue crabapple and the Norland apple, which were selected here during the mid-20th century and are now common cultivars on the Prairies. Livestock and horticulture programs were phased out in the late 1950s, and Scott's research has since focused on cereal, oilseed and pulse production, and on soil, crop and weed management.

#### Minor use pesticide research

There's a common misconception that Prairie farms are devoted solely to growing wheat and canola. But the truth is that the region produces a great diversity of field crops, all of which can benefit from the development of new pest controls. Scott's central location on the Great Plains makes it an ideal place to run Prairie-wide research programs for this purpose, and its 336 hectares of loamy soil provide the acreage for a broad range of field trials.

Because of these advantages, the Farm was selected in 2002 as a test site for the Minor Use Pesticide Program (MUPP), serving the needs of all three Prairie provinces. The Scott MUPP team includes test site manager Eric Johnson, principal investigator Dan Ulrich, technician Greg Ford and archivist Terri Sittler. During the summer, the team usually employs two or three students to help with the field studies.

Since 2002, the team has evaluated the effects of 67 different pesticides on more than 50 crop types, including established and seedling grasses for seed production, grasses for forage and hay, legumes, spices, herbs, oilseeds, small fruits and a variety of other crops ranging from sugar beets to canary seed. In total, 215 MUPP field trials have been conducted at Scott since 2003; 75 percent of them were for 43 priority projects, while the remainder were screening trials to support the MUPP's priority-setting process.



Aerial view of Scott Research Farr

#### Risk reduction research

Scott also has an important weed control program, led by Eric Johnson with the help of technicians Herb Schell and Cindy Gampe. Funding for the program, which carries out trials to support the MUPP, is through the PMC's Pesticide Risk Reduction Program (PRRP) and Saskatchewan's Provincial Council of Agriculture, Development and Diversification Boards.

A substantial proportion of the weed management research is devoted to screening trials of potential herbicides for chickpeas, wheat, dry beans, canola, lentils and other crops. One example is a recent project on the control of weeds in chickpea, which provided both tolerance and efficacy data on sulfentrazone. The trials helped identify the lowest effective dose required for control of weeds such as kochia, and provided data on re-cropping options. Further field studies are being conducted at Scott and elsewhere in Western Canada to provide additional data that will support the full registration of sulfentrazone.

In a second project, the program's risk reduction research identified carfentrazone as another potential reduced-risk herbicide for weed control, due to its low-residue characteristics. The product can be used pre-seed or pre-emergence with a number of cereal, oilseed and pulse crops, and its unique mode of action (Group 14) can also help growers manage herbicide resistant weeds such as volunteer Roundup Ready canola and wild buckwheat. The PRRP also funded a three-year project at Scott to investigate mechanical alternatives to herbicides. This approach is targeted mainly to organic producers and has provided valuable data about the use of mechanical tools, such as the minimum-till rotary hoe, to control shallowly rooted weeds. Follow-up studies indicate that both cereals and pulses tolerate the hoe at most crop stages, and that most of the benefit occurs when two to three passes of the hoe are conducted at the ground-crack stage.

To the untutored eye, Scott may look like just another stretch of flat Prairie farmland. But the appearance is deceiving: every year, Scott's research teams climb a steep learning curve as they learn how to produce new crops and how to manage the pests that, given a chance, might devastate farms across the Great Plains. Great things are done here, and Scott's work bears fruits that lie far beyond its distant Prairie horizons.



From left to right: Terri Sittler, Archivist; Greg Ford, Technician; Dan Ulrich, Principal Investigator; Eric Johnson, Test Site Manager.

# Hands Across the Border

The IR-4 National Education Conference (NEC) is held in the U.S. every three years and is an important opportunity for networking and information exchange. At the 2009 event, Sheryl Lonsbary, a Study Director with the PMC's MUPP, presented the participants with an update on the joint workshare initiative currently being conducted by the IR 4 and the PMC. For the PMC, Sheryl's presentation was an ideal opportunity to describe the progress that has been made on this initiative during the past two years.

Prior to 2007, the joint projects were designed by the IR-4 to be carried out in both Canada and the U.S., with the results being distributed on both sides of the border. Since then, however, the arrangement has been a fully reciprocal one, with the PMC designing and managing projects whose trials are carried out in both

countries; when the projects are complete, Canada and the U.S. share the findings.

During her presentation, Sheryl focused on assuring IR-4 researchers that Canadian and U.S. trial practices are similar, and that even where they differ, it is possible to find common approaches that will apply in both countries. As a result, says NEC training coordinator Debbie Carpenter, the feedback on Sheryl's talk was very positive. As one participant put it, "I'm no longer nervous about doing trials with Canada."

Such responses made it clear that the PMC achieved its major objective for the conference, and the third season of the joint workshare initiative is off to a great start. Communication is flowing briskly, and both U.S. and Canadian participants, from field researchers to managers, are working hard to ensure the success of each project.

### Our New Pesticide Risk Reduction Manager

The PMC is pleased to announce the appointment of Ms. Leslie Cass as Manager of the PRRP

Leslie Cass joined the Pest Management Centre in 2003 as Research Coordinator for the PRRP, after many years working on the front lines of research as a molecular biology technician in academia and industry, and, starting in 1990, with AAFC's transgenic corn program at the Eastern Cereal and Oilseed Research Centre (ECORC) in Ottawa.

Since joining the PMC, Leslie has overseen peer review-based competitive selection processes resulting in funding for more than 130 projects related to pest management, pesticide risk reduction and the implementation of reduced-risk minor use pesticides. A member of the editorial board of the e-bulletin "Biocontrol Files", she worked with others within AAFC to develop and implement the PMC's "Biopesticide Initiative" aimed at improving the availability of biopesticides as pesticide risk reduction tools for use by Canadian growers.

For the past year, Leslie has been acting in the role of Manager of the PRRP at AAFC, focusing on the priorities of increasing the communication of project results to stakeholders and the development of synergies with other programs and initiatives.

# **Pest Control the Natural Way**

Growers now have more pest management options for a wide range of crops. The PMC's support for biopesticides has led to four new registrations with the PMRA.

• Botanigard® ES and Botanigard® 22WP are now available to greenhouse growers for controlling whiteflies, aphids and thrips. Based on *Beauveria bassiana* strain GHA, the Botanigard® products provide excellent control of these pests. The PRRP provided substantial regulatory support to make this registration a reality and is also working toward Botanigard® registration submissions that will apply to a wider variety of crops and include outdoor uses.



- Blightban A506 is now available for the management of fireblight in apples and pears as a direct result of the PRRP's biopesticides regulatory support. Blightban A506 contains a natural plant colonizing bacterium, *Pseudomonas fluourescens* strain A506, which reduces disease symptoms by competing with the fireblight pathogens *(Erwinia amylovora)* for space and nutrients.
- **Contans® WG** is a very effective biofungicide for controlling *Sclerotinia sclerotiorum*. This fungus, the causal agent of white mold, is known to infect 400 plant species ranging from carrots to soybeans. The PMC worked extensively on the registration submission for Contans® WG, which has now been registered for Canadian use by the PMRA.

Successfully used in Europe since 1997, *Coniothyrium minitans*, the fungus that is contained in Contans® WG, penetrates sclerotia on crop residues and in the soil to prevent the release of disease-causing spores. This allows growers to sanitize infected fields, which means they can use lower amounts of conventional fungicide. Because effective use requires the application of Contans® WG three months before the disease actually appears, and since susceptible crop residues must also be sprayed after harvest, the PMC has arranged demonstration trials and grower training for the product. These are being carried out in cooperation with the Agricultural Research and Extension Council of Alberta, Pulse Canada and the Canola Council.

• Met52<sup>™</sup> is based on the naturally occurring soil fungus Metarhizium anisopliae and is now registered for the control of weevils in container-grown ornamentals. The PMC helped with the product's Canadian registration by providing advice to the registrant during the pre-submission phase. With the registration of this product, PMC is now investigating further uses for Met52<sup>™</sup> as part of risk reduction strategies.

The PMC's support for these new registrations was managed through the PRRP and included literature analyses, efficacy trials, regulatory advice, and help with submission packages in collaboration with the PMRA and registrants. It's all part of the PMC's commitment to expanding the use of biopesticides in Canada and to providing Canadian growers with environmentally sustainable, effective and economical pest-control solutions.

### What's New on the PMC **Website**

Several new items have been added to our website since our last newsletter appeared. Here's a look at what's been happening:

- The National Priority Lists and Selected National Priorities, established by the Minor Use Pesticide Priority Setting Workshop, have been published on the Minor Use Crop/Pest Problems page. These priorities will become projects within the MUPP for the 2010 growing season.
- The Sustainable Crop Protection Factsheet Series continues to have new titles added under the Publications and Document archive.
- A number of new Risk Reduction Strategies for the management of apple scab, grasshoppers and ascochyta blight in chickpeas have been published for grower use.

The 2009 Implementation Projects is now available, and results of the PMC Implementation Projects initiated in previous years are still being posted.

To stay informed of updates on our website, be sure to subscribe to our email notification service. These notifications will provide you with links to our new web material.

### Calendar of Events

Canadian Weed Science Society Meeting November 24-26, 2009 Charlottetown, Prince Edward Island

NAFTA Technical Working Group on Pesticides Stakeholder Meeting December 8, 2009 Ottawa, Ontario

2010 AAFC Minor Use Research Sites Meeting January, 2010 Ottawa, Ontario

2010 Canadian Minor Use Pesticide Priority Setting Workshop March 23-25, 2010 Hampton Inn Ottawa & Conference Centre 200 Coventry Road, Ottawa, Ontario



### People on the Move

Shai Ben-Shalom, entomology Project Coordinator with the MUPP, is working on an assignment as a Strategy Coordinator with the PRRP. Pathologist Jinxiu Zhang is joining the PRRP on assignment from the Eastern Cereals and Oilseeds Research Centre of AAFC' Research Branch.

Karen Bedford, Victoria Brookes and Martin Trudeau have joined the MUPP submissions team as Project Coordinators with the submissions team, and will

continue to work from British Columbia and Quebec. Doug Wardle at Summerland and Markus Clodius at the Agassiz and Jean-François Dubuc at St. Jean-sur Richelieu Research Sites will take over as the AAFC principal investigators in B.C.

Kalidas Subedi has accepted the position of Weed Science Project Coordinator with the MUPP. He holds a doctorate in agronomy/crop physiology and a master's in crop production and weed science. He comes to the PMC with over 20 years of professional experience in diverse international organizations, including more than seven years with AAFC.

### 2009 Regulatory Submissions and Registrations

The process of registering a new minor use pesticide begins with the PMC's Minor Use Pesticide Program, which prepares an information package based on data collected from field trials and laboratory analyses. The package is then submitted to Health Canada's PMRA to support the registration of the pesticide for a particular use. The PMRA reviews the package and decides whether the pesticide should be registered for this use in Canada. If registered, the product can then be employed by growers as specified on the label.

The PMC's PRRP also assists companies in submitting packages for the registration of biopesticides that can help address the pesticide risk reduction priorities identified in grower consultations.

Crop	Pest(s)	Product(s)	Active Ingredient	Project Number
Apple	Apple Maggot; European Apple Sawfly (EAS); Plum Curculio	Assail	acetamiprid	AAFC06-024
Broccoli	Leaf spot <i>(Alternaria sp.);</i> Grey mold <i>(Botrytis cinerea);</i> downy mildew <i>(Peronospora parasitica)</i>	Pristine WG	pyraclostrobin boscalid	AAFC04-023
Broccoli	Swede midge; thrips	Success 480 SC	spinosad	AAFC03-068
Broccoli	Swede midge; thrips	Entrust 80W	spinosad	AAFC10-044
Bushberry (Currant)	Leafrollers Loopers	Success 480 SC	spinosad	AAFC03-087
Bushberry (Currant)	Leafroller, loopers	Entrust 80W	spinosad	AAFC10-047
Cabbage	Swede midge; thrips	Success 480 SC	spinosad	AAFC03-107
Cabbage	Swede midge; thrips	Entrust 80W	spinosad	AAFC10-045
Cabbage	Leaf spot <i>(Alternaria sp.)</i> , Grey mold <i>(Botrytis cinerea)</i> , downy mildew <i>(Peronospora parasitica)</i>	Pristine WG	pyraclostrobin boscalid	AAFC04-024
Cabbage, Chinese	Leaf spot <i>(Alternaria sp.)</i> , Grey mold <i>(Botrytis cinerea);</i> downy mildew <i>(Peronospora parasitica)</i>	Pristine WG	pyraclostrobin boscalid	AAFC04-085
Caneberry (raspberry)	Leafroller; Lepidoptera; Looper	Success 480 SC	spinosad	AAFC04-048
Caneberry (raspberry)	Leafroller, loopers	Entrust 80W	spinosad	AAFC10-048
Cauliflower	Swede midge; thrips	Success 480 SC	spinosad	AAFC03-069
Cranberry	Blackheaded fireworm, cranberry fruitworm and sparganothis fruitworm	Altacor	chlorantraniliprole	AAFC07-050

#### Submissions June 1 to September 30, 2009

Cucumber; greenhouse	Cabbage looper; European corn borer; Western flower thrips	Success 480 SC	spinosad	AAFC04-042
Cucumber; greenhouse	Cabbage looper; European corn borer; Western flower thrips	Entrust 80W	spinosad	AAFC10-042
Grape	Grape Berry Moth; Grape Phylloxera; Japanese beetle	Assail	acetamiprid	AAFC05-061
Lettuce, greenhouse	Aphids; Whiteflies	Intercept 60 WP	imidacloprid	AAFC03-014
Lettuce, greenhouse	Cabbage looper	Success 480 SC	spinosad	AAFC04-019
Lettuce, greenhouse	Cabbage looper	Entrust 80W	spinosad	AAFC10-040
Melon (Cantaloupe)	Labelled Weeds	Command 360ME	clomazone	AAFC04-035
Mustard Greens	Swede midge; thrips	Success 480 SC	spinosad	AAFC03-108
Mustard Greens	Swede midge; thrips	Entrust 80W	spinosad	AAFC10-046
Mustard Greens	Leaf spot <i>(Alternaria sp.);</i> Grey mold <i>(Botrytis cinerea);</i> downy mildew <i>(Peronospora parasitica)</i>	Pristine WG	pyraclostrobin boscalid	AAFC04-025
Ornamental (Juniper)	Root rot (Phytophthora sp.)	Heritage MAXX	azoxystrobin	AAFC07-063
Peach	Oriental fruit moth	Intrepid 240F	methoxyfenozide	AAFC05-030
Pear	Pear scab	Nova 40W	myclobutanil	AAFC04-089
Pearl millet	Dessication	Roundup Weather- max with transorb 2 technology	glyphosate	AAFC09-017
Pepper, greenhouse	Powdery mildew <i>(Leveillula taurica)</i>	Pristine WG	pyraclostrobin boscalid	AAFC04-031
Pepper, greenhouse	Cabbage looper; European corn borer; Western flower thrips	Success 480 SC	spinosad	AAFC04-033
Pepper, greenhouse	Cabbage looper; European corn borer; Western flower thrips	Entrust 80W	spinosad	AAFC10-041
Squash (summer)	Labelled Weeds	Command 360ME	clomazone	AAFC04-037
Strawberry	Leafroller, loopers	Success 480 SC	spinosad	AAFC04-064
Strawberry	Leafroller, loopers	entrust 80W	spinosad	AAFC10-049

### Registrations June 1 to September 30, 2009

Crop	Pest(s)	Product(s)	Active Ingredient	Project Number
Apple	Fireblight	BlightBan A506	<i>Pseudomonas fluorescens</i> A506	PRR Program
Bean, dry	Mold, White <i>(Sclerotinia</i> <i>sclerotiorum)</i>	Allegro 500F	fluazinam	AAFC07-043
Cucumber, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	<i>Beauveria bassiana</i> GHA	PRR Program

8

Lettuce, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	<i>Beauveria bassiana</i> GHA	PRR Program
Ornamental, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	<i>Beauveria bassiana</i> GHA	PRR Program
Pear	Fireblight	BlightBan A506	<i>Pseudomonas</i> <i>fluorescens</i> A506	PRR Program
Pepper, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	<i>Beauveria bassiana</i> GHA	PRR Program
Pepper, greenhouse	Aphids	Tristar 70 WSP	acetamiprid	AAFC03-104
Tomato, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	Beauveria bassiana GHA	PRR Program
Tomato, greenhouse	Whiteflies	Tristar 70 WSP	acetamiprid	AAFC02-004
Vegetables, greenhouse	Aphids, Thrips, Whiteflies	Botanigard ES & 22WP	<i>Beauveria bassiana</i> GHA	PRR Program

### About the Pest Management Centre

Agriculture and Agri-Food Canada (AAFC) established the Pest Management Centre (PMC) in 2003 to implement the Pesticide Risk Reduction Program (PRRP) and Minor Use Pesticide Program (MUPP). The PRRP focuses on the development of risk reduction strategies for the Canadian agriculture and agri-food sector, while the MUPP responds to the needs of Canadian minor crop growers for increased access to new minor uses of pesticides. The PMC operates from its headquarters in Ottawa and at nine research centres (Kentville, Nova Scotia; Bouctouche, New Brunswick; Saint-Jean-sur-Richelieu, Quebec; Vineland, Ontario; Delhi, Ontario; Harrow, Ontario; Scott, Saskatchewan; Summerland, British Columbia; and Agassiz, British Columbia) where field, greenhouse and growth chamber trials are conducted.

For more information about the PMC, please visit our website at www.agr.gc.ca/prrmup

#### Contact Information

For more information about any of the items in this issue of the newsletter, please contact the PMC via email at pmc.cla.info@agr.gc.ca or call 613-694-2457.

© Her Majesty the Queen in Right of Canada, 2009 AAFC No. 10945E ISSN No 1916-3851 Aussi offert en français sous le titre : Bulletin sur la lutte antiparasitaire