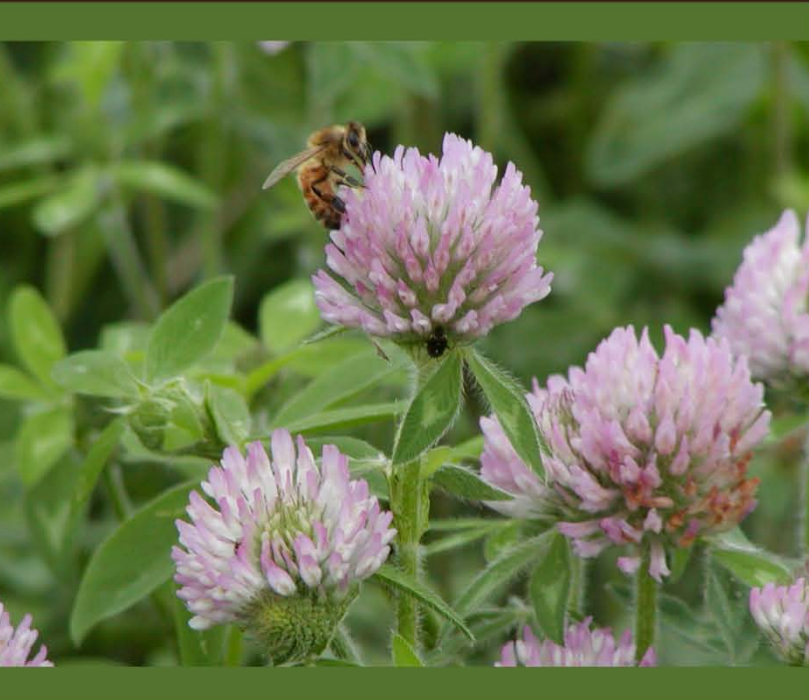


Linking Organic Knowledge



Linking Organic Knowledge

Organic Science Cluster

2010 - 2011
Annual Report

Organic Science Cluster Partners & Sponsors 2010

		Agriculture and Agri-Food Canada	Agriculture et Agroalimentaire Canada	 <p style="font-size: small;">a federal-provincial-territorial initiative</p>
				
				
				BC New Varieties Development Council
				
				

OACC Partners & Sponsors 2010

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Introduction

The 2010-11 fiscal year brought significant changes to OACC with the resignation of Dr. Ralph Martin from Director of OACC ([see Tribute to Ralph C. Martin](#)) and as we focus our attention on managing the [Organic Science Cluster](#).

Our work at the OACC largely falls into the following categories:

- i. Management and administration of the Organic Science Cluster
- ii. Communication of organic science to industry stakeholders
- iii. Research led out of the OACC office
- iv. Collaboration with researchers across Canada
- v. Service



An overview of the Organic Science Cluster is provided in this report, but can also be found online at (http://oacc.info/OSC/osc_welcome.asp). We are very proud to lead the Organic Science Cluster with the Organic Federation of Canada and with the ongoing collaboration with industry, university and Agriculture and Agri-Food Canada partners. The spirit of collaboration is unprecedented and we will see significant advances in the science of organic agriculture in the coming years. Working with NSAC Research and Graduate Studies and Financial Services offices, OACC coordinates the establishment and maintenance of agreements with industry partners and the universities, distributes funding, and manages reporting to the AAFC Science Cluster Initiative.

As we move into year three of four of the Organic Science Cluster, we also start to turn our attention towards Growing Forward II, and the next Organic Science Cluster, which could set the federally funded research agenda for organic agriculture for 2013-18. OACC will work with the organic sector to identify research priorities and industry partners who are prepared to advance the science of organic in Canada.

An important part of the OACC's operations is to compile, review and disseminate research of relevance to the organic sector in Canada. A detailed overview of our communication activities, including website statistics, Organic Friends' E-zines, presentations and newspaper articles, is provided later in this report (see Communications).

With a shift in focus toward management and administration of the Organic Science Cluster and the impending retirement of Ralph from OACC/NSAC, emphasis on leading research has declined in the 2010-11 year. Ongoing OACC led research occurs mainly in the Maritimes focusing on management of black currants (new crop) and wireworm (pest). However, the OACC also collaborates in, facilitates, or otherwise supports research across Canada.

The OACC has a large mandate and is limited in staff, however, part of our role is to provide service to our home institution NSAC (sitting on committees and giving presentations, etc), the organic sector (through sitting on and leading committees, workshops, and meetings), and our respective professions (e.g. graduate student committees, scientific committees).

Andrew M. Hammermeister Ph.D., P. Ag.
Director, OACC; Assistant Professor, NSAC

Tribute to Ralph C. Martin – Founding Director

This year's annual report is dedicated to the Founding Director of OACC, Dr. Ralph Martin. After over 10 years of envisioning, establishing and directing OACC at the Nova Scotia Agricultural College, Ralph has retired from NSAC and moved on to new endeavours at the University of Guelph in his home province of Ontario.

Once Ralph committed to establishing a centre for organic research and education he was determined to succeed. Under Ralph's guidance, OACC has established a national and long term role in conducting, coordinating and communicating organic science and education across the country. From the start, Ralph committed himself to grounding OACC in science, striving to bring integrity and credibility to the rapidly expanding organic sector. It was a time of great debate about the merits of organic agriculture as consumers began to seek a stronger connection to the food they ate and the way it was grown, handled and processed.

As the Founding Director of OACC, Ralph was responsible for raising millions of dollars from federal, provincial and industry sources to support the development of organic science, education and extension. This funding has resulted in:

- Valuable organic research across the country on farms and at university or AAFC research stations,
- Establishment of the OACC website which has become a digital archive of information related to organic agriculture in Canada,
- Development of 10 degree level organic courses offered online,
- Training of numerous graduate students and summer students who have become valuable professionals or producers in the organic sector,
- Development of guidance documents for animal welfare,
- Bi-directional translation of research and extension materials (permitting establishment of a French website for OACC as well as English), and
- Most recently, establishment of the Organic Science Cluster, the culmination of many years of work to bring credibility to organic science.

Ralph has been a positive force for organic agriculture at NSAC and in Canada as a whole. The OACC staff most definitely misses Ralph, but is very grateful for his ongoing support of OACC. We wish Ralph the best of luck in his future endeavours!



OACC Advisory Board

OACC is an operating division of the Nova Scotia Agricultural College (NSAC) and is guided by an Advisory Board representing stakeholder groups from across Canada. It is comprised of members appointed by the President of NSAC for staggered three year terms. The 2009 Board is shown below.

For a current list of Board Members, please see: www.oacc.info/Board/board_welcome.asp

OACC Board members deliberate and make recommendations about policy, strategic directions and sustaining OACC. The Board considers feedback from Advisory Forums held at organic conferences across Canada each year. Groups represented on the Board include organic farmers, transitional farmers, food distributors and retailers, university researchers, students, Agriculture and Agri-Food Canada and organic organizations. The board is designed in such a way that it must include at least one member from Manitoba or Alberta, and each of British Columbia, Saskatchewan, Ontario, Québec and the Atlantic provinces.

We are indebted to past and current Board members who selflessly contribute time and help us to pursue our vision.

2010 Advisory Board Members:

- **Dag Falck** - Nature's Path Foods, BC (Chair)
- **Claude Berthélemé** - New Brunswick Department of Agriculture, Aquaculture and Fisheries, NB
- **Chris Cutler** - Nova Scotia Agricultural College, NS
- **Loïc Dewavrin** - Les Fermes Longprés, QC
- **Deb Foote** – The Organic Grocer, BC
- **Jennifer Grant** - Harmony Whole Foods Market, ON
- **Peter Hicklenton** – Agriculture and Agri-Food Canada, NS
- **Chantal Jacobs** - Saskatchewan Agriculture and Food, SK
- **Dorothy Marshall** - Campbellton Farm, AB
- **Kim Schneider** - Student, University of Guelph, ON
- **Ann Slater** – Organic farmer, Ecological Farmers Association of Ontario, ON
- **Dean Spaner** - University of Alberta, AB
- **Dwayne Woolhouse** - Crestview Organic Farms, SK

OACC Staff

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Lloyd Rector
Matt Linton

Graduate Students

David Hobson (M.Sc.)

OACC Affiliates

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Associate Professor, NSAC
Canada Research Chair in Organic Agriculture
Tel: (902) 893-7621
E-mail: dlynch@nsac.ca

Dr. Martine Dorais

Research Scientist, Greenhouse Crops, AAFC
Tel: (418) 656-2131 (3939)
E-mail: Martine.Dorais@agr.gc.ca

Financial Statement

OACC Financial Statement as of March 31, 2011 for 2010/2011 fiscal year

Expenditures	Total
Research Coordination	\$37,368.92
Research Costs and Analysis	\$94,195.79
Information Dissemination	\$158,125.60
Translation	\$53,867.44
Travel	\$16,480.53
Financial Management	\$91,021.28
Total Expenditures	\$451,059.55

Revenue	Total
Province of Prince Edward Island	\$10,000.00
Province of Nova Scotia	\$ 9,008.00
Province of Alberta	\$31,992.25
Anne's PEI Farm	\$7,500.00
Homestead Organics	\$2,500.00
Home Hardware	\$40,000.00
Organic Grocer	\$1,500.00
Kubota	\$1,000.00
Symbionature	\$500.00
Organic Science Cluster (AAFC Growing Forward via Organic Federation of Canada)	\$347,221.53
Total Revenue	\$451,221.78

Notes:

- This statement does not include the salary of Director, which is paid through NSAC faculty.
- These are unaudited expenditures for the fiscal year ending March 31, 2011.
- Specific research contracts held in whole or in part by OACC staff are not included in this statement. Other research costs are included on those contracts.
- In-kind contributions (not shown here) are significant, especially those of the Nova Scotia Agricultural College.

Organic Science Cluster

Organic Science Cluster – Overview

Canada's Organic Science Cluster (OSC) is a collaborative effort led jointly by the [Organic Agriculture Centre of Canada](#) (OACC) at the Nova Scotia Agricultural College and the [Organic Federation of Canada](#) (OFC). The Organic Science Cluster is part of the [Canadian Agri-Science Clusters Initiative](#) of Agriculture and Agri-Food Canada's [Growing Forward Policy Framework](#) and is supported by contributions from [industry partners](#).

The goals of the Organic Science Cluster are to facilitate a national strategic approach to organic science in Canada, link scientists across the country and disseminate the knowledge generated to organic stakeholders.

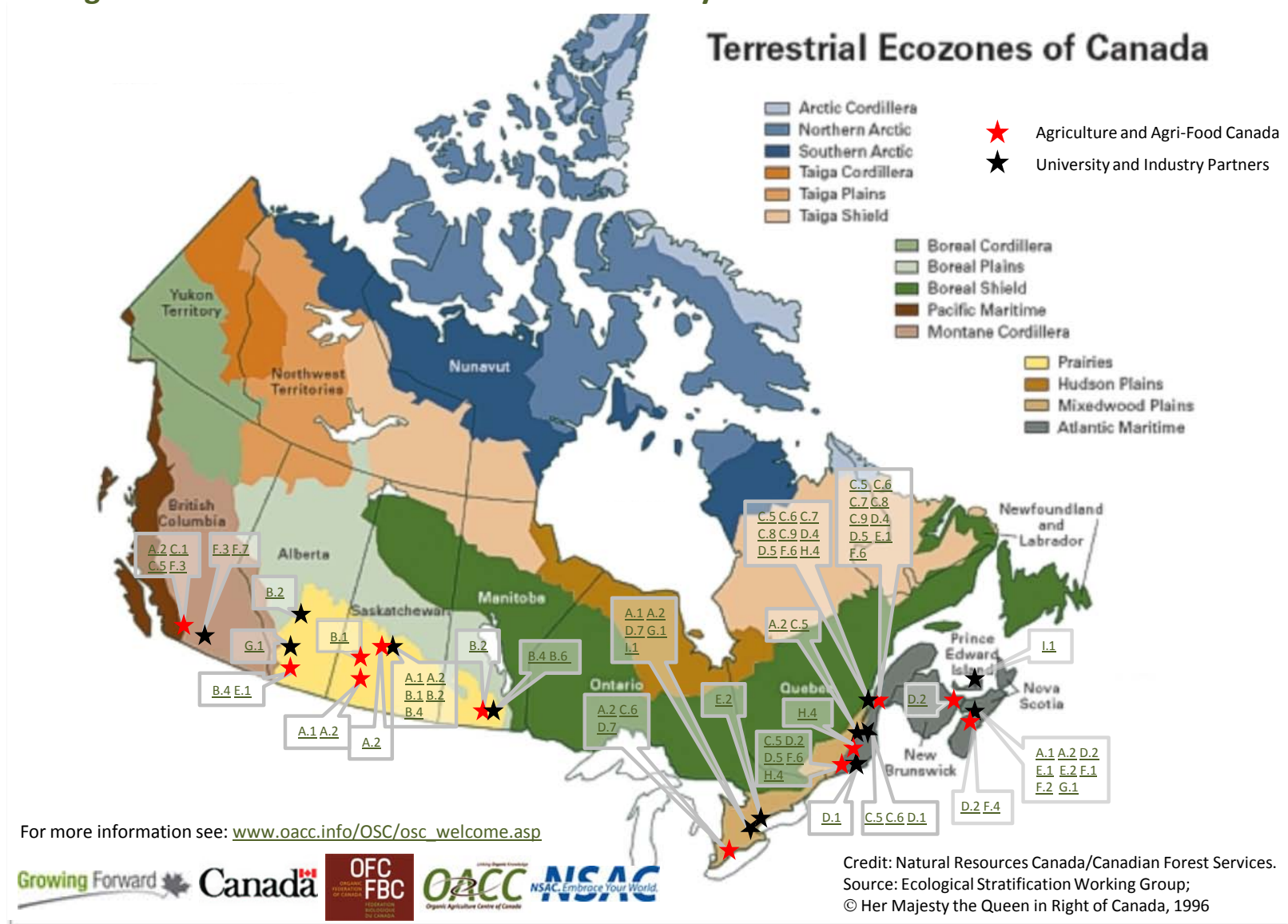
The Organic Science Cluster has identified 10 sub-projects including 30 research activities that will be conducted by over 50 researchers plus 30 collaborators in approximately 45 research institutions. Activities of the Organic Science Cluster include work in fruit horticulture, agronomy, cereal crop breeding, soil fertility management, vegetable production, greenhouse production, dairy production systems, parasite control in ruminants, environmental sustainability, and food processing. This research comes at a time when there is renewed emphasis on innovation, efficiency (energy, labour, economics), and capturing value-added markets. Most of this research directed toward organic agriculture can also be applied to conventional production systems, drawing interest to this cluster from producers across Canada.

The Organic Agriculture Centre of Canada is responsible for overseeing the operation of the Organic Science Cluster, including management tasks such as the management of financials, reporting and fundraising, and communications.

For more information on the Canadian Organic Science Cluster, please visit:
www.oacc.info/osc/osc_welcome.asp

Organic Science Cluster – Map

Organic Science Cluster Researcher and Activity Locations Across Canada – 2009-2013



Organic Science Cluster – Research Activities

Subproject A: Biologically-Based Fertility Management

[Activity A.1:](#) Characterizing soil phosphorus dynamics and availability under organic crop production

[Activity A.2:](#) Predictive tools for characterizing mycorrhizal contributions to phosphorus uptake by organic crops

Subproject B: Integrated Grain-Based Cropping Systems

[Activity B.1:](#) Changing weed populations under long-term organic crop production

[Activity B.2:](#) Organic cereal crop breeding

[Activity B.4:](#) Low-tillage grain production systems that suppress weeds and minimize tillage

[Activity B.6:](#) Integrated grain-based cropping systems for biological and economic sustainability

Subproject C: Organic Greenhouse Production

[Activity C.1:](#) Crop nutrition for vegetable plant propagation

[Activity C.5:](#) Development of an organic greenhouse growing system for tomato that improves energy use efficiency and reuses the crop effluent as nutrient solution

[Activity C.6:](#) Development of an organic greenhouse system for intercrop tomato and extended sweet pepper crop grown under supplemental lighting for year-round locally-grown fruit production

[Activity C.7:](#) Feasibility of using geothermal energy as heat and humidity control for an organic greenhouse tomato crop

[Activity C.8:](#) Optimizing fertilization and irrigation management for a closed greenhouse organic tomato growing system

[Activity C.9:](#) Production of organic cuttings and pot plants

Subproject D: Integrated Management of Horticultural Field Crops

[Activity D.1:](#) Agroecosystem management for pest control in organic vegetable production

[Activity D.2:](#) System productivity and N flows in two organic vegetable long term rotations: high intensity stocked rotation versus a low intensity stockless rotation

[Activity D.4:](#) Organic production of vegetable transplants for gardeners

[Activity D.5:](#) Organic production of peat blocks for vegetable seedlings and detection of abiotic and biotic stresses

[Activity D.7:](#) Development of a weed management system for pumpkins grown for seed in Ontario

Subproject E: Environmental Stewardship and Product Branding

[Activity E.1:](#) Modeling farm scale energy and nutrient efficiency, and Global Warming Potential, as affected by management

[Activity E.2:](#) Modeling Global Warming Potential (GWP) reductions associated with sub-watershed wide transition to organic farming

Subproject F: High Value Fruit Production

[Activity F.1:](#) Organic management of black currant during early establishment and production for an export market

[Activity F.2:](#) Weed management for organic wild blueberry production

[Activity F.3:](#) Ecologically sound soil management in perennial fruit plantings

[Activity F.4:](#) Innovative herbicide and fungicide replacement strategies for organic apple production

[Activity F.6:](#) Organic production of strawberries and raspberries under tunnels

[Activity F.7:](#) Control of Rosy Apple Aphid (RAA) in organic apple orchards

Subproject G: Benchmarking the Organic Dairy Production System

[Activity G.1:](#) Assessment of health, welfare and milk composition on organic and conventional dairy farms

Subproject H: Organic Food Processing

[Activity H.4:](#) Assessment Alternative approaches to direct addition of nitrite/nitrate for organic cured meats

Subproject I: Sheep Parasite Control

[Activity I.1:](#) Over-wintering of gastrointestinal parasites in organic sheep production

Organic Science Cluster – Activity Leaders

- Activity A.1 – [Derek Lynch](#), Nova Scotia Agricultural College
- Activity A.2 – [Chantal Hamel](#), Agriculture and Agri-Food Canada (Swift Current)
- Activity B.1 – [Steve Shirliffe](#), University of Saskatchewan
- Activity B.2 – [Stephen Fox](#), Agriculture and Agri-Food Canada (Winnipeg)
- Activity B.4 – [Martin Entz](#), University of Manitoba
- Activity B.6 – [Martin Entz](#), University of Manitoba
- Activity C.1 – [David Ehret](#), Agriculture and Agri-Food Canada (Agassiz)
- Activity C.5 – [Martine Dorais](#), Agriculture and Agri-Food Canada (Quebec)
- Activity C.6 – [Steeve Pépin](#), Université Laval
- Activity C.7 – [Damien deHalleux](#), Université Laval
- Activity C.8 – [Martine Dorais](#), Agriculture and Agri-Food Canada (Quebec)
- Activity C.9 – Blanche Dansereau, Université Laval
- Activity D.1 – [Maryse Leblanc](#), IRDA
- Activity D.2 – [Josée Owen](#), Agriculture and Agri-Food Canada (Bouctouche)
- Activity D.4 – [Martine Dorais](#), Agriculture and Agri-Food Canada (Quebec)
- Activity D.5 – [Nicolas Tremblay](#), Agriculture and Agri-Food Canada (St-Jean-sur-Richelieu)
- Activity D.7 – [Robert Nurse](#), Agriculture and Agri-Food Canada (Harrow)
- Activity E.1 – [Derek Lynch](#), Nova Scotia Agricultural College
- Activity E.2 – [Rod MacRae](#), York University
- Activity F.1 – [Andrew Hammermeister](#), Organic Agriculture Centre of Canada
- Activity F.2 – [Nathan Boyd](#), Nova Scotia Agricultural College
- Activity F.3 – [Louise Nelson](#), University of British Columbia
- Activity F.4 – [Julia Reekie](#), Agriculture and Agri-Food Canada (Kentville)
- Activity F.6 – [Shahrokh Khanizadeh](#), Agriculture and Agri-Food Canada (St-Jean-sur-Richelieu)
- Activity F.7 – Linda Edwards, Mennell Orchards
- Activity G.1 – [Trevor DeVries](#), University of Guelph
- Activity H.4 – [Joseph Arul](#) – Université Laval
- Activity I.1 – [Andrew Peregrine](#), University of Guelph

Note: To see a complete list of researchers involved in the Organic Science Cluster please visit the [OACC website](#).

Organic Science Cluster - Research Coordination

One of the roles that OACC assumes in the Organic Science Cluster is that of research coordination. In addition to general management, twenty five science activities and three communication activities received funding. Arrangements were made with all of the participating researchers. Activity leaders submitted their annual performance reports and these were compiled and submitted to AAFC.

Activities include work on fruit horticulture, agronomy, cereal crop breeding, soil fertility management, vegetable production, greenhouse production, dairy production systems, parasite control in ruminants and environmental sustainability. The Science Advisory Board has met and deliberated on all research activities; all research activities have gone through the peer review process.

Other activities undertaken in 2010 include:

- Maintaining and consistently expanding research information on the website.
- Continuing to work in sixteen OSC activities as part of the prescribed plan.
- Initiating work in ten OSC activities scheduled to begin in 2010.
- Reporting, as required, towards the research activities planned.

Organic Science Cluster – Management

One of the key roles undertaken by OACC towards the Organic Science Cluster is to oversee and administer the Organic Science Cluster on behalf of the Organic Federation of Canada. Working with the NSAC Research and Graduate Studies and Financial Services offices, the OACC coordinates the establishment and maintenance of agreements with industry partners and the universities, distributes funding, and manages reporting to the AAFC Science Cluster Initiative.

- An administrative clerk was hired to assist in administering the Organic Science Cluster.
- A representative of OFC visited OACC/NSAC twice during the year to evaluate management practices and to discuss the progress of the research activities.
- As a result of discussions with collaborating researchers, a decision was reached to hold the Canadian Organic Science Conference at the end of Year 3 rather than in Year 4. In preparation for the conference, some tasks were initiated: The establishment of an overall planning committee, establishment of a program committee consisting mainly of researchers, confirmation of date and venue (21-23 February, 2012 in Winnipeg), an initiation of the promotion of the conference in the scientific and organic communities, as well as preliminary logistical planning including the invitation of speakers. A webpage was established at: <http://oacc.info/COSC/>.
- The Science Advisory Body met as required to maintain the peer review process of the Organic Science Cluster.
- Major administrative undertakings involved finalizing agreements with University and industry partners and developing the mechanisms for transferring funds to the researchers. All researchers received reporting documentation as required and have reported as required for their respective activities.

Organic Science Cluster – Communication

The Organic Agriculture Centre of Canada manages the communication aspects of the Canadian Organic Science Cluster, largely through the activities of [Subproject J](#). The OSC will be generating valuable information, adding credibility to the science and practice of organic agriculture. The communication of these research results is an important part of this initiative. There are three main components to the communication plan:

1. *Disseminating Information for Use by Practitioners*

- Provide an online overview of Canada's Organic Science Cluster.
- Have a webpage dedicated to reporting progress and results of research associated with the Organic Science Cluster.
- Translate the science of the Organic Science Cluster research into extension communications for practitioners.
- Increase awareness of organic research and the Organic Science Cluster.

2. *Translation*

- Making research results available in both official languages.

3. *Scientific Conferences, and communications*

- Facilitate venues for organic researchers to gather, share results, and communicate, including a national organic science conference being planned for 2012.

During the 2010-2011 fiscal year, much progress was made in meeting the communications mandate of the Organic Science Cluster, including:

- Webpages dedicated to Organic Science Cluster were developed and launched on the OACC website in English (www.oacc.info/osc/osc_welcome.asp) and in French (www.oacc.info/osc/osc_welcome_f.asp).
- Organic research and extension articles are routinely posted on the OACC website. Twelve monthly E-zines in English and French were prepared and distributed to a mailing list of 15,600, providing updates to Canadian organic stakeholders as to progress in organic research. For more information, please [see below](#).
- Sixteen videos relating to organic science in Canada and the Organic Science Cluster were developed and posted on OACC's website and YouTube page (<http://www.youtube.com/user/OrganicAgCanada?feature=mhum>).
- In the 2010-2011 fiscal year, eighteen newspaper articles were commissioned on various topics relevant to organic agriculture in Canada, submitted to over 300 media contacts across Canada and posted on the OACC website. For an overview of the articles published, please [see below](#).
- Planning is underway for the Canadian Organic Science Conference, to be held in Winnipeg in February 2012. For more information, please [see below](#).
- In addition, seven conferences and meetings were attended by the staff of the Organic Agriculture Centre of Canada to discuss and disseminate information about the Organic Science Cluster. For more information, please [see the listings below](#).
- Many English documents were translated into French, to make research and extension materials available in both official languages. In total, over 230 documents were translated, including newspaper articles, extension bulletins, Organic Science Cluster materials, and research abstracts.

Canadian Organic Science Conference (COSC)

The Canadian Organic Science Conference and Organic Science Cluster Strategic Meetings, being held from February 21-23, 2012 in Winnipeg MB, will feature leading scientists presenting and discussing current advances in the field of organic and sustainable agricultural practices in Canada and beyond. Information will be of interest to both organic and conventional researchers, with research presented in a diverse range of fields including: Soil fertility, quality and health; horticultural and specialty crops; cereal-based cropping systems; livestock productivity, health and welfare; greenhouse production and season extension; food, sustainability and organic systems; social science and organic agriculture; and extension of organic research. Planning for this conference began in 2010.

COSC Program Committee	COSC Steering Committee
<p>Dr. Martin Entz, Co-chair University of Manitoba</p>	<p>Dr. Andy Hammermeister, Co-chair Organic Agriculture Centre of Canada Nova Scotia Agricultural College</p>
<p>Dr. Andy Hammermeister, Co-chair Organic Agriculture Centre of Canada, Nova Scotia Agricultural College</p>	<p>Dr. Martin Entz, Co-chair University of Manitoba</p>
<p>Dr. Trevor DeVries University of Guelph</p>	<p>Nicole Boudreau Organic Federation of Canada</p>
<p>Dr. Martine Dorais Agriculture and Agri-Food Canada</p>	<p>Joanna MacKenzie Organic Agriculture Centre of Canada</p>
<p>Dr. Yvonne Lawley University of Manitoba</p>	<p>Karen Nelson Organic Agriculture Centre of Canada</p>
<p>Dr. Derek Lynch Nova Scotia Agricultural College</p>	<p>Margaret Savard Organic Agriculture Centre of Canada</p>
<p>Dr. Gerry Neilsen Agriculture and Agri-Food Canada</p>	<p>Iris Vaisman University of Manitoba</p>
<p>Karen Nelson Organic Agriculture Centre of Canada</p>	
<p>Dr. Rob Nurse Agriculture and Agri-Food Canada</p>	
<p>Dr. Steve Shirliffe University of Saskatchewan</p>	
<p>Dr. Jennifer Sumner University of Toronto</p>	

OACC Research

Organic Management and Processing of Black Currants for an Export Market

Organic producers in Prince Edward Island (PEI) are utilizing blackcurrants (*Ribes nigrum* L.) to diversify their operations and supply the market demand in Japan. The organic black currant research program during 2010-11 included five projects with funding from two primary sources.

Organic Science Cluster and Anne's PEI Farm funding:

- a. Fertility management trial
- b. Weed management trial
- c. Berry quality and processing

Province of PEI Funding:

- d. Best management practices
- e. Cultivar trial

a. Fertility Management Trials

These ongoing trials were established on two farms on PEI where seven different fertility rate x timing treatments have been applied. The objective is to identify the optimum fertility management plan for organic black currant production. A blend of crab meal and poultry manure compost is being applied at varying rates to provide the fertility in the spring and/or summer depending on the treatment. Graduate student David Hobson has been focusing on this research. He has been collecting plant tissue and soil data to evaluate fertility status of the treatments, and is measuring the effects of the treatments on bush size, growth rate, and berry yield. In addition to this work, David is testing the effect of deflowering the plants for one year to encourage more rapid vegetative growth. David's final field season will be in 2011, however, this trial will continue into the 2012 field season.

b. Weed Management Trial

A replicated weed management trial was established in May 2010 at the NSAC where information regarding bush growth, weed control effectiveness and economic cost of the weed management practices were collected. Treatments were: Tillage, mowing, black plastic mulch, fabric mulch, acetic acid, and flaming. Soil fertility status was determined using Plant Root Simulator. Soil moisture and temperature probes were installed into the treatments and connected to a data logger to assess the effects of each of the weed management treatments during the season. A second site expanding the weed management trial was established at the OACC Research Pastures in Truro, NS in fall 2010.

c. Berry Quality and Processing

As research progresses, we are identifying the production potential of black currants under different management systems as well as characterizing the actual fruit quality of different cultivars, and the effect of site on those characteristics. Preliminary data comparing black currant quality from different varieties and sites was completed. Berries from six sites in PEI consisting of four varieties were collected in August and sent to Labs-Mart in Alberta for analysis of total anthocyanin and total phenolic content.

Work was started to refine the sugar infusing techniques for processing of the black currants into a value-added product in the winter of 2011. The amount and type of sugar was investigated as well as the time in the sugar solution and dehydration to produce a sweet and long lasting berry product. Initial taste tasting to determine the palatability of this process is being conducted in March 2011.

d. Best Management Practices

This has increased the need for understanding the impact of weed control, fertility timing and disease control on blackcurrants. In 2010 trials were continued at two sites to examine the impacts of fertility supplied from a mixture (50:50, based on N content) of crab meal and pelletized poultry manure, while weed control was obtained by a 1 m strip of black plastic. A foliar sulphur spray was applied to half of the plants to assess its effects on the plants and disease. Treatments included no fertility or weed control (control); weed control only (W only); weed control plus spring fertility only (W+S); summer only (W+F); and weed control plus a split application of spring and summer fertility (W+SF); and weed control plus fish fertilizer drench (W+D). Disease severity was high at both sites with greater than 90% coverage on most plants. The disease of greatest prominence was white pine blister rust (WPBR). The application of sulphur for disease control negatively impacted currants at one site. Only the second site showed a treatment response; fertility and weed control increased growth in comparison to the control. After two years under these treatments; fertility responses begin to arise with the use of split application in combination with weed control demonstrated the greatest improvement in plant growth. Berry production was limited at one site due to the severity of disease; therefore berry analysis was restricted to one site. There was no interactive effect of disease control and treatment on the berry parameters, whereas there were treatment effects. Yield, hundred berry weight (HBW) and soluble solid content of the berries were reduced in the control treatment. The use of fertility again demonstrated a trend towards increased berry yields with a significant difference between the W only and W+SF. There were no other treatment effects on the HBW and soluble solids.

e. Cultivar Trial

Cultivar selection is important in the fruit and berry industry as it can affect the end product. We investigated seven cultivars at one site in PEI to assess performance under Maritime conditions. Seven cultivars were planted in 2010 with black plastic used for weed control and fertility applied at a rate of 100 kg N ha⁻¹ (50:50 mix of pelletized poultry manure and crab meal). The cultivars planted included Ben Alder, Ben Connan, Ben Tirran, Ben Sarek, Whistler, Blackhome and Titania. Half of the plants received a foliar spray of sulphur every three weeks to assess the cultivars interaction with a disease control. This was to assess if some cultivars are naturally more resistant to diseases such as white pine blister rust (WPBR) and powdery mildew, or if the use of a disease control can impact their establishment. Plant volume (height and width) and resistance to disease were assessed in the first year. In the future we plan to assess the berry yield, hundred berry weights, soluble sugars, fruit quality (total anthocyanin and total phenolics) and harvest ability. There was no interactive effect (disease control x cultivar) on plant volume, however there was a cultivar effect, with Whistler and Ben Tirran demonstrating greatest overall plant growth during the first year. The semi-dwarf plant, Ben Sarek, had the smallest plant size. White pine blister rust was the most prominent disease on all cultivars. The interactive effects of cultivar with disease control were significant, as were the cultivar effects with Titania having the highest disease incidence. However, when Titania was removed from analysis there was only a cultivar effect. Ben Sarek had the lowest ratings overall, however, disease incidence was low on all cultivars with less than 20% coverage.

Wireworm Pest Management

1. Development and evaluation of a push-pull-immobilize strategy to limit wireworm damage to cash crops

Background

This objective investigated the development of a push-pull-immobilize strategy, in which wireworms are pushed away from a cash crop through the use of feeding deterrents, pulled away through the use of attractive bait crops, and immobilization using physical or chemical agents

The results of lab trials were used to guide the design of field scale tests of using various combinations of these agents in a push-pull-immobilize strategy. From these trials, wheat was selected as a pull agent for further evaluation, while neem oil was selected as a potential push agent.

Lab trials did not reveal a strong immobilization candidate, so field trials were focussed on the evaluation of the promising push and pull agents alone. Field treatments therefore included:

1. Untreated control
2. Wheat inter-planted between carrot rows
3. A drench of 10% Neem oil
4. A drench of 5% Neem oil
5. Wheat inter-planted between carrot rows with a drench of 10% Neem oil

Wheat, an effective pull agent in lab experiments, was planted between carrot rows one month before carrot harvest.

Results

- Neither Neem nor wheat on their own or in combination significantly reduced levels of wireworm damage to carrots, although trends do suggest that there may be potential for these agents.
- The lower strength Neem solution (5%) seems to have elevated wireworm damage significantly over the control, for unknown reasons.
- None of the treatments significantly impacted overall or marketable carrot yield from the plots.
- New information now suggests that a Neem product that was under testing for minor use registration in Canada may now be dropped. Alternatives will be explored.

2. Evaluation of the effect of cover crops in a cash crop rotation on wireworm populations

Background

- This objective examines the use of rotational strategies for wireworm management.
- Plots were seeded to cover crops in the 2007 and 2008 growing season followed by carrots in 2009 in an effort to examine the residual effects of these cover crops on a subsequent root cash crop.
- The rotational crops included buckwheat, brown mustard, flax, alfalfa and barley undersown with clover.
- Wireworm population levels in the plots were monitored with bait traps and soil sampling over the course of the two years, with reductions in the number of trapped wireworms in plots sown with brown mustard and flax.

Results

- Trends toward lower levels of wireworms in the mustard plots in the 2007 and 2008 season held in 2009, with a significant reduction in wireworm damage to carrots planted after the brown mustard cover crops. This suggests that the glucosinolates present in the brown mustard plants may have an overall effect on the levels and/or feeding activity of wireworms that carries over into the next crop year.
- Unfortunately the reduction in wireworm damage came at the expense of carrot yield, which was also significantly lower for the carrot crop following brown mustard.
- Highest levels of wireworm damage were seen in the carrots following an alfalfa crop, despite low levels of wireworm catches in the alfalfa plots in 2007 and 2008. This suggests that alfalfa itself may not deter wireworms by creating an inhospitable, dry soil environment but may instead provide an attractive food source courtesy of its extensive root system.

3. Reduction of wireworm damage to root crops through the use of deterrents

Background

- Laboratory trials will focus on employing seaweed extracts to prime plant defenses against herbivory and thereby limit wireworm damage to root cash crops.
- As the use of a seaweed extract was not available, the use of ground brown mustard seed was utilized to determine if it can act as a deterrent to wireworms. Mustard was found to reduce the incidence of wireworms in the **“Evaluation of the effect of cover crops in a cash crop rotation on wireworm populations”** section, therefore the use of it as deterrent was analysed.
- Potato and carrots were chosen due to the prevalence of wireworm damage in these root crops in the Maritimes.
- The bait consisted of chopped carrots or potatoes placed at one end of the chamber (50 cm long) with 10 wireworms placed at the opposite end. The treatments (n=8) included 0, 15, 30, 60 g of ground brown mustard placed 20 cm from the bait.
- The number of wireworms 5 cm from the bait, 5-20 cm from the bait, 20-30 cm from the bait and greater than 30 cm from the bait will be assessed.

Results

- Lab trials are currently in progress.

4. Bait strip trial

Background

- In 2010, a field trial was initiated to assess the use of bait strips and rotational crops at various widths to determine if wireworm populations could be effectively pushed from the field.
- In 2010, bait strips 10m long and 0.3m wide were planted consisting of wheat, clover and timothy. Bait strips were spaced either 3 m or 6 m apart with rotational crops consisting of brown mustard, barley or the area left fallow. The mustard was tilled into the plots in August and the barley harvested. Bait traps were set up in the rotational crops and the bait strips to determine wireworm populations.
- In 2011, carrots or potatoes will be planted between the bait strips in the previous rotational crops and wireworm populations reassessed and cash crop yield and wireworm damage analysed.

Farmer, Industry, Research & Extension Collaborators

(Including researchers in the Organic Science Cluster)

Ametaj, Burim - *University of Alberta*
Angers, Paul - *Université Laval*
Antoun, Hani - *Université Laval*
Arul, Joseph - *Université Laval*
Astatkie, Tess - *Nova Scotia Agricultural College*
Ball, Matthew - *Yukon Department of Energy, Mines and Resources*
Barkema, Herman - *University of Calgary*
Bélair, Guy - *AAFC Saint-Jean-sur-Richelieu*
Bergeron, Renée - *University of Guelph*
Berthéléme, Claude - *New Brunswick Department of Agriculture and Aquaculture*
Bevis, Eric - *AAFC Kentville*
Bittman, Shabtai - *AAFC Agassiz*
Blackshaw, Robert - *AAFC Lethbridge*
Blois, Lloyde - *NS Organic Farmer*
Boisclair, Josée - *IRDA*
Boulangier, Marc - *Manitoba Agriculture, Food and Rural Initiatives*
Boyd, Nathan - *Nova Scotia Agricultural College*
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Bunch, Martin - *York University*
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Caldwell, Claude - *Nova Scotia Agricultural College*
Carlberg, Jared - *University of Manitoba*
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Dansereau, Blanche - *Université Laval*
deHalleux, Damien - *Université Laval*
Denuke, Peter and Carl - *NS Organic Farmers*
DesJardins, Yves - *Université Laval*
DeVries, Trevor - *University of Guelph*
Dorais, Martine - *AAFC Quebec*
Dufour, Jean-Claude - *Université Laval*
Duynisveld, John - *AAFC Nappan*
Ehret, David - *AAFC Agassiz*
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Falzon, Laura - *University of Guelph*
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Forge, Tom - *AAFC Agassiz*
Fox, Catherine - *AAFC Harrow*
Fox, Stephen - *AAFC Winnipeg*
Fredeen, Alan - *Nova Scotia Agricultural College*
Frick, Brenda - *University of Saskatchewan*
Gariépy, Claude - *AAFC Saint-Hyacinthe*
Gravel, Valérie - *Université Laval*
Greer, Ken - *Western Ag Innovations*
Gulden, Robert - *University of Manitoba*
Hallet, Rebecca - *University of Guelph*
Hamel, Chantal - *AAFC Swift Current*
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Hijri, Mohamed - *Université de Montréal*
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Hucl, Pierre - *University of Saskatchewan*
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Khanizadeh, Shahrokh - *AAFC Saint-Jean-sur-Richelieu*
King, Doug - *Carleton University*
King, Jane - *University of Alberta*
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Lacasse, Benoît - *AAFC Saint-Jean-sur-Richelieu*
Leblanc, Claude - *AAFC Saint-Hyacinthe*
Leblanc, Maryse - *IRDA*
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Lin, Wei-Chin - *AAFC Agassiz*
Lindsay, Kathryn - *Environment Canada*
Loo, Raymond - *PEI Organic Farmer*

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MacRae, Rod - *York University*
Martin, Hugh - *Ontario Ministry of Agriculture and Food*
McMahon, Beth - *Atlantic Canadian Organic Regional Network*
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Mitchell-Fetch, Jennifer - *AAFC Winnipeg*
Mitchell, Scott - *Carleton University*
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Morita, Kosaku - *Japan*
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Nelson, Louise - *University of British Columbia*
Nichols, Doug - *AAFC Kentville*
Noronha, Christine - *AAFC Charlottetown*
Nunn, Phil and Bisset, Bernice - *NS Organic Farmer*
Nurse, Robert - *AAFC Harrow*
Owen, Josée - *AAFC Bouctouche*
Papadopoulos, Yousef - *AAFC Truro*
Pépin, Steeve - *Université Laval*
Peregrine, Andrew - *University of Guelph*
Prithiviraj, Balakrishnan - *Nova Scotia Agricultural College*
Pruski, Kris - *Nova Scotia Agricultural College*
Raviv, Michael - *Newe Ya'ar Research Center*
Reekie, Julia - *AAFC Kentville*
Renkema, Gary - *PEI Organic Farmer*
Richards, Theresa - *Atlantic Canadian Organic Regional Network*
Robinson, Darren - *University of Guelph*
Rochette, Phillipe - *AAFC Quebec*
Rodd, Vernon - *AAFC Nappan*
Roddy, Elaine - *Ontario Ministry of Agriculture and Food*
Saucier, Linda - *Université Laval*
Scharf, Forest - *Saskatchewan Ministry of Agriculture*
Sharifi, Mehdi - *Nova Scotia Agricultural College*
Sharpe, Keri - *Alberta Agriculture and Rural Development*
Shirtliffe, Steve - *University of Saskatchewan*
Singh, Av - *AgraPoint (NS)*
Smith, Susan - *British Columbia Ministry of Agriculture, Food and Fisheries*

Spaner, Dean - *University of Alberta*
Specht, Eric - *AAFC Kentville*
St. Arnaud, Marc - *Université de Montréal*
Stewart, Katrine - *McGill University*
Tenuta, Mario - *University of Manitoba*
Tremblay, Nicolas - *AAFC St-Jean-sur-Richelieu*
Trépanier, Martin - *Université Laval*
Tucker, Anita - *University of Guelph*
van Biert, Pauline - *Alberta Agriculture*
vanLeeuwan, John - *University of Prince Edward Island*
Van Zutphen, David and Willena - *NS Organic Farmers*
Vernon, Bob - *AAFC Agassiz*
Voroney, Paul - *University of Guelph*
Walsh, Ron - *PEI Organic Farmer*
Whitty, Frank - *PEI Organic Farmer*
Zagury, Gérald - *Université de Montréal*
Zebarth, Bernie - *AAFC Fredericton*

Education

OACC web-based courses are available to farmers, students, and others involved in organic agriculture. Participants can register for the courses regardless of their location and participate in the course material during the hours most suitable to them. Many students have found the interactive approach to be enjoyable and educational. It can be a valuable experience to interact with the instructor and with classmates that have similar interests and questions while sitting comfortably at home.

The courses offered in 2010 are listed below, followed by the host institution.

- Composting and Compost Use (Nova Scotia Agricultural College - NSAC).
- Key Indicators of Sustainable Agriculture (University of British Columbia).
- Organic Crop Production on the Prairies (University of Manitoba).
- Organic Field Crop Management (NSAC).
- Organic Livestock Production (NSAC).
- Organic Marketing (University of Guelph).
- Organic Soil Fertilization (McGill University).
- Principles of Organic Horticulture (NSAC).
- Transition to Organic Agriculture (NSAC).
- Weed Control in Organic Agriculture (University of Saskatchewan).

Five web-based courses were offered in French, through l'Université Laval and McGill University. These courses are roughly equivalent to the corresponding English courses offered at NSAC.

- Compostage et utilisation du compost en agriculture biologique (Université Laval).
- Production biologique des cultures en champ (Université Laval).
- Productions animales biologiques (Université Laval).
- Transitions vers l'agriculture biologique (Université Laval).
- Fertilisation biologique des sols (McGill University).

NSAC offers a "Certificate of Specialization in Organic Agriculture." Any student who has successfully completed four of the eligible organic agriculture credit courses (including at least two courses from NSAC), and who has an overall average of at least 60% in these courses can apply to receive a Certificate of Specialization in Organic Agriculture.

For more information or to register for a course please visit the OACC website:

www.oacc.info/Courses/course_web.asp

Communications

OACC/CABC Website Report: January 1 to December 31, 2010

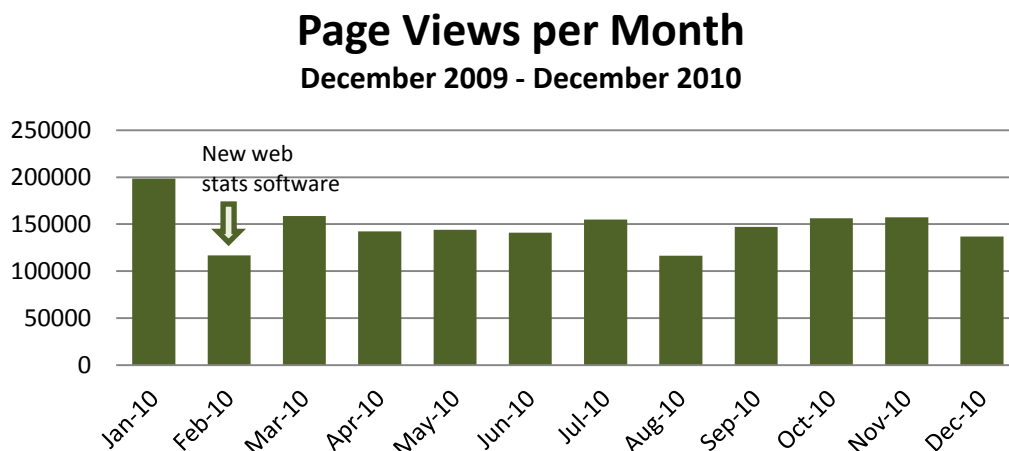
There were many exciting developments for the OACC/CABC website in 2010. Among the highlights are the launch of the Organic Science Cluster pages, the development of a Discussion Forum, and the implementation of a new web statistics package. Given the new website statistics, it is difficult to meaningfully compare the website metrics of 2010 to those of 2009. Nonetheless, the OACC website remains strong, with many visitors, both unique and returning. While the number of total page views appears to have decreased in 2010 (Table 1), consider that a nearly equivalent number of spider hits have been removed from this measurement. The OACC website remains strong and continues to evolve.

The *Organic Friends' E-Zine/Cyberbulletin Les amis du bio* marked the beginning of its 7th year of publication in 2010. The E-zine distribution list has grown by 3200 over the past year, with over 15,600 subscribers. In addition, the visibility of the E-zine has remained strong, with a constant rate of 20-25% of recipients opening the distribution e-mail, and 30% of those clicking links to the main monthly E-zine page. The *OACC Discussion Forum* was launched with an announcement in the October E-zine, with a French version launched in November.

Table 1: OACC/CABC Website Summary Statistics for 2009 and 2010

	January 1, 2009 to January 1, 2010	January 1, 2010 to January 1, 2011
Total Hits all files	5,209,176	n/a
Total Hits for Page views	1,985,203	1,772,774
# Unique Visitors	239,102	235,845
# Visits	719,420	572,252
% Returning Visitors	14.8%	~16%
Average Visits per Visitor	3.01	2.5

Figure 1. Page Views per Month for the Last 12 Months (January 1 to December 31, 2010)



Submitted by Joanna MacKenzie, OACC Website Coordinator (jmackenzie@nsac.ca)

E-zine

A monthly E-zine is published electronically in both English and French by the Organic Agriculture Centre of Canada. The Organic Friends' E-zine / Cyberbulletin Les amis du bio provides subscribers with an easy-to-use list of the new articles, research abstracts and extension bulletins that have been posted on the OACC website (www.oacc.info) each month. In 2010, twelve English and eleven French E-zines were published and distributed to a list of subscribers that tallied in at just over 15,600.

English Organic Friends' E-zines	French Cyberbulletin Les amis du bio
January 2010	
February 2010	Février 2010
March 2010	Mars 2010
April 2010	Avril 2010
May 2010	Mai 2010
June 2010	Juin 2010
July 2010	Juillet 2010
August 2010	Août 2010
September 2010	Septembre 2010
October 2010	Octobre 2010
November 2010	Novembre 2010
December 2010	Décembre 2010
January 2011	Janvier 2011
February 2011	Février 2011
March 2011	Mars 2011

Newspaper Articles

Every month, organic research and innovation in Canada is highlighted in a newspaper article that is distributed to media contacts across the country, including the Western Producer, Farm Focus and Ontario Farmer. These articles are posted at the OACC website one month after publication. To read, please see the list below, or visit http://www.oacc.info/NewspaperArticles/na_welcome.asp

- March 2011 [Fertility status of organically managed fields](#)
[Fertilité des champs cultivés biologiquement](#)
- [Using insects to assess soil quality](#)
[Utilisation d'insectes pour évaluer la qualité du sol](#)
- February 2011 ['All markets are not the same' for organic](#)
[« Tous les marchés ne s'équivalent pas » pour le bio](#)
- [Budgeting for phosphorous and nitrogen with manure applications](#)
[Faire un budget du phosphore et de l'azote en appliquant le fumier](#)
- January 2011 [Making the Organic Choice](#)
[Faire le choix du bio](#)
- [Using acetic acid to control weeds in organic potatoes](#)
[Utiliser de l'acide acétique pour contrôler les mauvaises herbes en production de pommes de terre biologiques](#)
- December 2010 [The Organic Legacy of Mike Leclair](#)
[L'héritage biologique de Mike Leclair](#)
- [Knowing Your Enemy: Canadian Researchers Help Organic Sheep Producers Understand Parasites](#)
[Connaître ses ennemis : Les chercheurs canadiens aident les producteurs de moutons biologiques à comprendre les parasites](#)
- November 2010 [The Blossoming of Organic Apples, Blueberries and Wine Grapes](#)
[L'éclosion des pommes, bleuets et raisins à vin biologiques](#)
- October 2010 [A table of ways to increase farm energy efficiency](#)
[Un tableau sur les moyens d'accroître l'efficacité énergétique à la ferme](#)
- [Going from good to better in reducing GHG emissions](#)
[Réussir de mieux en mieux à réduire les émissions de GES](#)
- September 2010 [Searching for ways to add phosphorus to increase soil fertility](#)
[Comment enrichir le sol en phosphore pour accroître sa fertilité?](#)
- [Sowing the seeds for new research in organic agriculture in Canada](#)
[Cultiver le savoir par de nouvelles recherches en agriculture biologique au Canada](#)

August 2010	<u>Comparing organic and conventional land management practices</u> <u>Comparaison entre les pratiques de gestion des terres conventionnelles et biologiques</u>
July 2010	<u>Hard Working Fungi Boost Crop Production</u> <u>Des champignons laborieux stimulent la production végétale</u>
June 2010	<u>Liquid fertilizer needed to sustain organic tomato production</u> <u>Un engrais liquide requis pour soutenir la production biologique de tomates</u>
May 2010	<u>Too Much Wildlife?</u> <u>Trop d'espèces sauvages?</u>
April 2010	<u>Reduced Till Termination of Sweet Clover</u> <u>Un travail du sol réduit pour tuer le mélilot</u> <u>Kootenay Alpine Cheese made in the old fashioned tradition may have you yodeling in the Kootenays</u>
March 2010	<u>Organic Farming Methods Enhance Soil Organic Matter</u> <u>Méthodes agricoles biologiques améliorent la matière organique du sol</u> <u>Facing the Challenges to Organic Grain Pricing</u>
February 2010	<u>Organic Agriculture Offers Helpful Options to Manage Nutrients</u> <u>L'agriculture biologique offre des options utiles à la gestion des nutriments</u> <u>Is There a Market Opportunity in Organic Veggies on the Prairies?</u>
January 2010	<u>The Environmental Impacts of Organic Agriculture: A Canadian Perspective</u> <u>Incidence de l'agriculture biologique sur l'environnement : une perspective canadienne</u> <u>Organic Poultry Production: A Good Fit for Your Farm?</u> <u>La production de volaille biologique: une opération adéquate pour votre ferme?</u>

Committees and Professional Activities

Andrew M. Hammermeister

Chair, National Organic Extension Forum

Co-chair, Canadian Organic Science Conference

Chair, NSAC Continuing and Distance Education Faculty Committee

Canadian Society of Agronomy Planning Committee for the Plant Canada Conference in 2011

Member, Research and Innovation Working Group of the Organic Value Chain Roundtable (OVCRT)

Member, NSAC Faculty Council

Graduate Student Committees: Emily Clegg, David Hobson, Caroline Halde, Harun Cicek, Sebastian Margarit

AAFC Science Peer Review Committee – Plant Science

Coordinated Organic Science session at Organic Connections Conference in Saskatoon

Ralph C. Martin

Chair, NS Food Policy Council (founding member)

Chair, Local Food Team, Spirit of Nova Scotia (founding member)

Chair, Living Earth Council (founding member)

Member, Expert Committee on Organic Agriculture (founding Chair)

Founding Chair, Organic and Animal Welfare Task Force (2005 – 2010)

Member, Organic Value Chain Round Table (OVCRT)

Chair, OVCRT Statistics Group

Chair, NSAC Crops Committee

Chapter Leader, Writing Project of the People's Food Policy Project

Member, Sustainability Committee, NSAC

Member, Canadian Health Food Association Expert Scientific Advisory Panel

Member, Curriculum Committee, NSAC

Member, Atlantic Universities and Colleges Sustainability Network

Member, Technology Development Program Committee

Member, Agri-Commodity Management Association

Committee member for M.Sc. candidates Amanda Ward, Daniel MacEachern and Mattea Tracey

Committee member for Ph.D. candidate Kristen Lowitt

Peer Reviewed Publications

Guthrie, A.D., Learmount, J., VanLeeuwen, J., Peregrine, A.S., Kelton, D., Menzies, P.I., Fernández, S., Martin, R.C., Mederosa, A. Taylor, M.A. 2010. Evaluation of a British computer model to simulate gastrointestinal nematodes in sheep on Canadian farms. *Veterinary Parasitology* 174: 92-105.

Liu, K., Hammermeister, A.M., Entz, M.H., Astatkie, T., Warman, P.R. and Martin, R.C. 2010. Nitrogen availability in an organic potato crop following a 3-year transition under contrasting farming systems. *J. Sustainable Agric.* 34(8): 821-835.

MacRae, R.J., Lynch, D. and Martin, R.C. 2010. Improving Energy Efficiency and GHG Mitigation Potentials in Canadian Organic Farming Systems. *J. Sustainable Agric.* 34(5): 549-580.

Mederosa, A., Fernández, S., VanLeeuwen, J., Peregrine, A.S., Kelton, D., Menzies, P., LeBoeuf, A., Martin, R.C. 2010. Prevalence and distribution of gastrointestinal nematodes on 32 organic and conventional commercial sheep farms in Ontario and Quebec, Canada (2006–2008). *Veterinary Parasitology.* 170: 244-252.

Non Refereed Publications

Lynch, D., MacRae, R. and Martin, R.C. 2010. Carbon and Global Warming Potential Footprint of Organic Farming. Report to Market Development Working Group, OVCRT, June 2010.

MacKenzie, J. 2010. Know Your Enemy: Canadian researchers help organic sheep producers understand parasites. Rural Delivery, April 2010.

Martin, R.C. 2010. Competition balanced with co-operation. Truro Daily News. December 18, 2010.

Martin, R.C. 2010. New model needed for church buildings. Truro Daily News. November 13, 2010.

Martin, R.C. 2010. Celebrating clotheslines and simplicity. Truro Daily News. October 16, 2010.

Martin, R.C. 2010. Have we jumped to a different planet? Truro Daily News. September 18, 2010.

Martin, R.C. 2010. Generations of farmers: past and future. Truro Daily News. August 28, 2010.

Martin, R.C. 2010. Sticking to good decisions - personally and politically. Chronicle Herald. August 9, 2010.

Martin, R.C. 2010. Public transportation in Truro is rising like cream. Truro Daily News. July 24, 2010.

Martin, R.C. 2010. Bus right route for future. Chronicle Herald. July 15, 2010.

Martin, R.C. 2010. The mirage of convenience. Truro Daily News. July 10, 2010.

Martin, R.C. 2010. All students should take home economics courses. Truro Daily News. June 19, 2010.

Martin, R.C. 2010. In these fast times, think about slow money. Truro Daily News. May 15, 2010.

Martin, R.C. 2010. Too busy to be sustainable? Truro Daily News. March 20, 2010.

Martin, R.C. 2010. Waste Equals Food. Truro Daily News. February 20, 2010.

Martin, R.C. 2010. Coming back to Earth. Truro Daily News. January 30, 2010.

Martin, R.C. 2010. What will we wish we had done differently? Truro Daily News. January 2, 2010.

Nelson, K.L., and Hammermeister, A.M. 2010. Establishing Organic Blackcurrants. The Canadian Organic Grower Magazine. Fall 2010.

Conference Presentations and Posters

- Hammermeister, A.M. and Martin, R.C. 2010. Mainstreaming Organic Research: Canada's New Organic Science Cluster. Proceedings of the Joint Conference of the Canadian Society of Soil Science and the Canadian Society of Agronomy, Beyond Organics session. Saskatoon, Saskatchewan
- Hammermeister A. M. and Nelson, K.L. Maritime Organic Grains Research. 2010. ACORN Conference, Charlottetown, PEI.
- Lynch, D., Sharifi, M., Burton, D. and Hammermeister, A.M. 2011. Productivity and Nitrogen Dynamics under Extended Organic Potato Rotations in Atlantic Canada. CSA/CSSS Joint Meeting.
- Lynch, D., Sharifi, M., Hammermeister, A.M. and Burton, D. 2010. Rotation sequence and soil amendment impact on productivity, soil quality and nitrogen losses, under organic vegetable production in Atlantic Canada. ISHS, Lisbon.
- Lynch, D., Sharifi, M., Hammermeister, A.M. and Burton, D. 2010. Sustainable Organic Potato Production Using Green Manures and Off-Farm Organic Amendments. CSA Atlantic Agricultural Research Forum.
- MacKenzie, J. and Hammermeister, A.M. 2010. Integrated Options for Control of European Wireworms. Presented at the 2010 Scotia Horticultural Congress, Kentville, NS.
- Martin, R.C. 2010. What is OACC doing to help organic farmers adapt to climate change? Guelph Organic Conference, University of Guelph, Guelph, ON.
- Martin, R.C., Peregrine, A.S. and Fernandez, S. 2010. Managing internal parasites in sheep. Guelph Organic Conference, University of Guelph, Guelph, ON.
- Nelson, K.L., and Hammermeister, A.M. 2010. Best Management Practices for Organic Blackcurrant Production. Organic Connections Conference, SK.
- Nelson, K.L., and Hammermeister, A.M. 2010. Fertility and Weed Management in Establishing Organic Blackcurrant Stands. Canadian Society of Agronomy, Atlantic Agronomy Workshop, Charlottetown, PEI.
- Nelson, K.L., and Hammermeister, A.M. 2010. Fertility and Weed Management in Establishing Organic Blackcurrant Stands. ACORN Conference. Charlottetown, PEI.
- Sharifi, M., Hammermeister, A. M. and Mahoney, K. 2010. Assesment of Shell Fish Sediments as Soil Amendment. CSA Atlantic Agricultural Research Forum.
- Sharifi, M., Lynch, D., Hammermeister, A. and Burton, D. 2011. Effect of Strategy of Conversion to Organic on Potato Yield and Nitrogen Losses. New England Potato Technology Forum.
- Vessey, K.J., Main, M., Martin, R.C., and Papadopoulos, Y. 2010. Crop based bio-fuel feedstock potential in Nova Scotia. Bioenergy in Nova Scotia - Conference and Workshop. Dalhousie University, Halifax, NS.

Invited Talks

Hammermeister, A.M. 2011. Canada's Organic Science Cluster. Organic Value Chain Roundtable. Ottawa, ON. March 2011.

Hammermeister, A.M. 2011. The Science of Organic Agriculture. EcoFarm Day. Cornwall, ON. Feb 2011.

Hammermeister, A.M. 2010. Organic Science Rocks Agriculture. Organic Connections. Saskatoon, SK. November 2010.

Hammermeister, A.M. 2010. Is Organic Redefining Agriculture? NSAC Agri1000 Class. Truro, NS. November 2010.

Hammermeister, A.M. 2010. Organic in the 21st Century. NSAC. Truro, NS. April 2010.

Hammermeister, A.M. 2010. OACC and PEI: Supporting Farmers Together. PEI AgriFood Alliance. Stanley Bridge, PEI. 2010.

Hammermeister, A.M. 2010. Capturing Opportunities in Organic Agriculture. Canadian Farm Business Management Council Webinar. March 2010.

Martin, R.C. 2010. Meat and Milk from Grass-fed Livestock. Living Earth Council Food Expo. St Andrew's Church. Truro, N.S. December 2010.

Martin, R.C. 2010. Can Organic Agriculture Do The Job? St. James Presbyterian Men's Group. Truro, N.S. November 2010.

Martin, R.C. 2010. Sustainable Food Production: Shifting to a 21st Century Approach. Plant Agriculture Department, University of Guelph. Guelph, ON. October 2010.

Martin, R.C. 2010. Organic Agriculture: Responses to Displacement. Dalhousie University. Halifax, N.S. October 2010.

Martin, R.C. 2010. Keep Your Soil Covered. Cobequid Education Centre. Truro, N.S. October 2010.

Martin, R.C. 2010. Sustainable Agriculture in a World of Large Scale, Global Food Systems. St. Mary's University. Halifax, N.S. October 2010.

Martin, R.C. 2010. Organic Agriculture: Tradition and Foresight. Macphail Farm Symposium. Orwell, PEI. October 2010.

Martin, R.C. 2010. Shifting Agriculture Toward More Food Security. Nova Scotia Association of Regional Development Authority's AGM. September 2010.

Martin, R.C. 2010. Organic Agriculture: Beyond Hippies and Heretics. Rotary Club of Truro. Truro, NS. September 2010.

Martin, R.C. 2010. The Role of Organic Agriculture in a Modern Food System. Organic and Sustainable Agriculture Workshop. Vineland Research and Innovation Centre. Vineland, ON. July 2010.

Martin, R.C. 2010. Organic Agriculture: Challenges and Contributions in a Complex Food System. Atlantic Agricultural Forum. Truro, NS. April 2010.

Martin, R.C. 2010. The Effect of Climate Change on Forestry & Agricultural Land Use. Central Nova Scotia Woodland Conference 2010. Stewiacke, N.S. March 2010.

Martin, R.C. 2010. Local, Healthy Food from Nova Scotian Farms and Gardens. Lunenburg-Queens Federation of Agriculture meeting. Bridgewater, NS. March 2010.

Martin, R.C. 2010. Doing Business and Shopping as if We Want to Stay Here. Speak Out Business Series. Neptune Theatre. Halifax, NS. March 2010.

Martin, R.C. 2010. Opportunities for Organic Farming and Research. Organic Seminar Series. University of Guelph. Guelph, ON. January 2010.

Martin, R.C. 2010. What Does Organic Have That Works in Conventional Farming? Farm Smart Agricultural Conference. Ontario Agricultural College, University of Guelph. January 2010.

Martin, R.C. 2010. Opportunities and Pitfalls on the Way to Organic Certification. Farm Smart Agricultural Conference. Ontario Agricultural College, University of Guelph. January 2010.

Nelson, K.L., and Hammermeister, A.M. 2010. Management for Establishing Organic Blackcurrant Stands. ACORN Conference, Charlottetown, PE. March 2010.

Meetings, Field Days and Workshops

Atlantic Canadian Organic Regional Network (ACORN) 10th Annual Conference. Charlottetown, PEI. February 2010.

Canada Organic Extension Network (COEN) Inaugural Meeting. Banff, AB. August 2010.

Canadian Society of Agronomy, 5th Atlantic Agronomy Workshop, Charlottetown, PE, Jan 2010.

Organic Blackcurrant Field Day at Stephen Cousin's Farm, Mt. Stewart PE, August 11, 2010.

Permaculture Fruit Farming: Establishing a Profitable Orchard. OACC workshop, Truro, NS March 3, 2010.

Prince Edward Island Blackcurrant Producers Meeting, Charlottetown, PE March, 2010.

OACC Partners

Canadian Agri-Science Clusters Initiative
Growing Forward
Agriculture and Agri-Food Canada
Agri-Futures
Alberta Livestock Industry Development Fund
Anne's PEI Farm
British Columbia New Varieties Development Council
Canadian Wheat Board
Dubois Agrinovation
Home Hardware
Homestead Organics
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Les Serres Sagami
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Note: These partners represent financial and in-kind contributions to OACC and the Organic Science Cluster across Canada.