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## ORGANIC THURSDAY

### Industry and Scientists work together

A successful industry partner  
talks  
about his project with the Organic  
Science Cluster

Andy Hammermeister explains  
why Canada is such a good  
country to grow organic.



Organic Federation of Canada [www.organicfederation.ca](http://www.organicfederation.ca)

An Interview with Frédéric Jobin-Lawler, an industry partner participating in the Organic Science Cluster.

## The Projects of the Organic Science Cluster

### Answer Producers' Needs

By Nicole Boudreau

As a trained biologist, Frédéric Jobin-Lawler worked for eight years as a representative for a greenhouse equipment supplier. That is, until 2009, when Jobin-Lawler bought L'Abri Végétal, a 2000 m<sup>2</sup> greenhouse in Compton, Eastern Townships, Quebec.

At the time of purchase, the greenhouse was already heated with a geothermal energy exchanger. But Jobin-Lawler had numerous questions about the system, many of which the supplier could not clearly answer. To help satisfy his curiosity and to calculate and optimize the efficiency of the system, Jobin-Lawler decided to invest funds in the Organic Science Cluster (OSC). His investment was directed towards [a project](#) under the leadership

of Martine Dorais, an Agriculture and Agri-Food Canada (AAFC) researcher specializing in greenhouse production.

With Jobin-Lawler's training, a Master's degree in phytotechnics, and technology already in place his greenhouse with the capacity to compile and analyze data, the project went smoothly.

The trials and analysis that were performed as a part of the Organic Science Cluster project is rewarding, allowing Jobin-Lawler to optimize the use of his greenhouse's existing geothermal system. The research revealed that an upward adjustment in the size of the heat distribution tubes in the geothermal system raises its efficiency. Furthermore, the research also shows that air-conditioning could also be provided by a geothermal system in a semi-closed greenhouse. Reversing the role of the geothermal equipment, using it to refresh and cool the greenhouse during hot periods, could be a profitable undertaking.



“We setup a CO<sub>2</sub> injection system two years ago to stimulate photosynthesis. If we air-condition the greenhouse when the weather is warm, we don't have to open the roof of the greenhouse to lower the temperature; we will then prevent dissipation of CO<sub>2</sub> out of the greenhouse and will maintain the CO<sub>2</sub> level effective to stimulate photosynthesis.” L'Abri végétal hopes to build up scientific evidence to support on this experience, and this will constitute their proposal of the research in the Organic Science Cluster II.

The Abri végétal produces tomatoes, cucumbers, peppers and herbs year-round. The plants grow directly in the soil, not in containers. Jobin-Lawler reports that the quality of the soil is exceptional in Compton and that yields are very good. “We simply use composted manure with straw, plus feather meal. And it is organic,” comments Jobin-Lawler.

A scheduled routine for preparation, planting and harvesting is at the heart of Jobin-Lawler's operation. He typically finishes harvesting one crop in mid-January. The plants are then removed, the soil tilled a rotary tiller and fertilized, and new transplants, seeded and grafted a few months previously. The next harvest is ready by the end of March.

Jobin-Lawler has invested a considerable amount of money, in the proximity of \$10,000 annually, in the Organic Science Cluster for the past 4 years, an amount that AAFC has quadrupled. “It costs a few thousand dollars, but it can generate useful information that can represent tens of thousands of dollars for the coming years. You must try. It surely does not make the producer regress.” comments the greenhouse owner, who is anxious to participate to the second round of the OSC.

“It is much more interesting to work with a team than working alone. You can get help to analyze the consequences of your management. You relate with stakeholders, researchers and suppliers, who teach you how to look at your production from another angle and to move on to the next good direction. It is very important in a sector where you always have to improve your management to face competition” concludes Jobin-Lawler.

For more information about the Organic Science Cluster, or this research project, please see [http://www.oacc.info/OSC/osc\\_welcome.asp](http://www.oacc.info/OSC/osc_welcome.asp), Activity C.7 - Feasibility of using geothermal energy as heat and humidity control for an organic greenhouse tomato crop.

## **The science of organic farming is progressing – Join the movement!**

The first Organic Science Cluster will come to an end in March 2013 and the Organic Agriculture Center of Canada (OACC) is now preparing for the second round of this nationwide research program.

Dr. Andy Hammermeister, the Director of OACC and Assistant Professor in Dalhousie University's Faculty of Agriculture, reports on how organic science is managed in Canada.

By Nicole Boudreau

### **When did scientists start to be interested in organic agriculture?**

People have been doing organic research for 20-30 years, but it was uncoordinated. There was a big shift 15 years ago, when low input production models were valued and that is what organic is. Consumer demand grew and many more farmers began showing interest in producing organically.

OACC was established 11 years ago with a mandate to support organic research and education, helping to bring full credibility to the science of organic agriculture. So, organic agriculture, not largely perceived to be a scientific approach by Canadian researchers, became much more attractive. Researchers started expressing interest, seeking an opportunity to study the low input approach, and to find alternative solutions where their results could be directly implemented in production.

### **Why is Canada such a unique country for producing organic food?**

There is a clear disadvantage created by the cold weather of our northern country. Our growing season is not that long, and we will never grow bananas in Canada. But, we have two great advantages. First, the cold weather and freezing conditions reduce pest pressure and keep a lot of insect pests out of the country. So, we have the benefit of free pest control: winter does the job.

The second advantage is the quality of the Canadian soil. Our soil is fairly young, compared to other parts of the world. It was glaciated only 10,000 years ago and there are many nutrients in it. It has not been depleted in nutrients like the weathered tropical soils near the equator. In tropical soils the luxurious vegetation contains all the nutrients, which are washed out when the vegetation is cut. The presence of many minerals in the Canadian soil is certainly beneficial for organic producers.

### **What are the main challenges organic producers are facing?**

The challenges depend on what sector you are examining. Grain producers in Saskatchewan and Manitoba have had really wet weather conditions, so weed management has been a really big problem in many parts of these provinces. It is more challenging to get out in the fields and cultivate under extreme weather conditions and there are very few other options. Long term organic farmers have good rotation systems that they develop to



reduce weed pressures; they also reduce risks by cleaning their seeds, selecting competitive crops and cultivars, and well-timed tillage. They have a pretty good premium and lower costs of inputs. Together these strategies can reduce their potential financial risk. However, extreme conditions can disrupt the best made plans and cropping systems. The farmers must be dynamic in their management, while keeping a close eye on markets.

**The Organic Science Cluster is based on a close cooperation between the organic industry and the researchers. But do farmers and scientists speak the same language?**

There sometimes may be a gap between farmers and researchers when they discuss problems and share information. Some researchers work in a very specialized area and they often don't have a farming background, which may mean that some researchers do not relate well with producers. These researchers are, however, enthusiastic to meet the needs of the producers. It is then the job of the extension specialists to work as intermediaries between scientists and farmers. In the planning of the Organic Science Cluster II, we are working hard on establishing relationships and forging new partnership between organic stakeholders and researchers, so that in the next 5 years, researchers will be producing results that have clear impact for the producers. We also want to plan research projects that will be flexible enough to adapt to changing agronomical conditions and to unpredictable changes, such as extreme weather conditions.

**As an organic sector stakeholder, you are invited to consider participating in Organic Science Cluster II, set to launch in April 2013.**

**In this program, industry partners are invited to identify and participate in priority research projects for organic agriculture and food.**

**For more information about Organic Science Cluster II, please see the Expression of Interest documents**

**What does a “conventional” researcher have to learn when considering doing research in organic agriculture?**

All agricultural approaches want to protect the environment, offer decent welfare to livestock and produce good quality food. But, how do we go about it is a distinction between the two systems. The organic model takes people out of their normal thinking on crop management. It is based on life in the soil and rotation systems instead of inputs. If we ever encounter a shortage of energy or inputs for crop production, such as phosphorous, we might need to have these low-input models. “Conventional” researchers also need to place their specialized area of research into the context of a farming system, as that is what organic agriculture is about.

**“It has been very exciting over the last 4 years, with the first round of the Organic Science Cluster, to see how the research community has evolved and the credibility that organic agriculture has gained in the eyes of the academic and Agriculture and Agri-Food Canada research community.”**