

# Provincially Significant Projects - Listing by Category

Choose a category from the list below to check out ongoing and completed Provincially Significant Projects funded by the BC Ministry of Agriculture under *Growing Forward 2* Innovation Program, a federal-provincial-territorial initiative.

<b>Animals</b>	<b>Knowledge Transfer</b>	<b>Nutrient Management</b>	<b>Pest Management</b>
<b>Plants</b>	<b>Precision Agriculture</b>	<b>Waste to Resource</b>	<b>Water Management</b>

<b>Animals</b>		
<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Hydroponic sprouting for grass-fed dairy production / SCA072</b>	<p><b>Objective:</b> This project introduced a hydroponic barley grass growing system to BC and studied the effect on the nutrient balance in cow's milk. The objective was to prove if these hydroponic grass-fed animals produced milk with an omega 3:6 ratio preferred by some consumers.</p> <p><b>Result:</b> The study confirmed that the fatty acid composition of the milk contained the omega 3:6 ratio preferred by some consumers.</p> <p><b>Impact:</b> A similar project (URA231) has been initiated to determine the feasibility of producing a year round supply of grass fed beef from hydroponically grown barley grass.</p> <p>Contact: <a href="#">Dr. John Church</a>, Thompson Rivers University</p>	<p>\$38,500</p> <p>Mar 2014</p>
<b>Hydroponic Grass System – Beef / URA231</b>	<p>Building upon work done in 2014/15 (SCA072) this project will:</p> <p>(a) compare the finishing time and fatty acid composition of beef fed a combination of hydroponically grown barley grass and conserved forage in a feedlot setting (“hydroponically finished beef”) against conventional approaches to finishing (“conventionally finished beef”), and</p> <p>(b) estimate the economic viability of “hydroponically finished beef” as compared to “conventionally finished beef” and BC produced grass fed beef.</p> <p>Contact: <a href="#">Dr. John Church</a>, Thompson Rivers University</p>	<p>\$196,372</p> <p><i>ongoing</i></p>

<p><b>Beef Sector Competitiveness / SCA245 &amp; SCA314</b></p>	<p>This multi-year project aims to increase the competitiveness and sustainability of the forage and cattle industry in BC by:</p> <ul style="list-style-type: none"> <li>a) developing a science-based, cohesive and provincially-adopted <b>forage inventory database</b> and data-collection process, paired with development of a user-friendly computer interface;</li> <li>b) providing high quality data on which the Province can base forage allocations;</li> <li>c) developing tools which support agri-business cost of production assessments; and</li> <li>d) engaging industry to develop solutions for enabling agriculture on Crown lands.</li> </ul> <p><i>For more information, contact <a href="#">Lisa Zabek</a>, BC Ministry of Agriculture.</i></p>	<p>\$220,000 <i>ongoing</i></p>
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## Knowledge Transfer

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<p><b>Horticulture Short Course at Pacific Agriculture Show / SCA102 &amp; SCA252</b></p>	<p><b>Objective:</b> The Lower Mainland Horticultural Improvement Association hosts a major educational event each year at the Pacific Agriculture Show, bringing in expert speakers to discuss emerging innovations and opportunities in agriculture (e.g., scientific research findings, technology innovations, emerging pest issues, environmental stewardship, etc.).</p> <p><b>Result:</b> Over the two events (2014 &amp; 2015), twenty-three (23) subject matter experts were funded from around the world and over 1700 people attended educational events on a wide range of topics including programming for berries, vegetables, greenhouse vegetables and flowers, organics, hazelnuts, farm direct marketing, nursery and agro-forestry.</p> <p><b>Impact:</b> Participant evaluations confirm that the program was extremely well received and accomplished its objectives of transferring key knowledge and stimulating innovation across sectors.</p> <p>Contact: <a href="#">Sandy Dunn</a>, <i>Lower Mainland Horticultural Improvement Association</i></p>	<p>\$46,000 Mar 2014 &amp; Mar 2015</p>
<p><b>BC Alfalfa and Soil Fertility Field School / SCA103</b></p>	<p><b>Objective:</b> To improve the quality and quantity of local forage supply in central BC, increase processing capacity in the area, and expand the sector by developing new international markets.</p> <p><b>Result:</b> Industry successfully developed and hosted four Field School educational events in Williams Lake and Vanderhoof on forage production, with a focus on alfalfa. A total of 181 people registered for the events.</p> <p><b>Impact:</b> Land under cultivation for target forage species has increased</p>	<p>\$17,000 March 2014</p>

	<p>dramatically as have seed orders by producers in the area, and two regional compression plants have increased processing and are actively developing new markets in China.</p> <p>Contact: <a href="#">Nechako Valley Cattlemen's Association</a></p>	
<p><b>Dairy Technology Innovation Outreach Program / SCA104</b></p>	<p><b>Objective:</b> The BC Dairy Association host an annual Dairy EXPO Farm Tour in January to share new technologies and practices that have been recently installed at dairy farms. Articles are published in the industry newsletter for broad promotion of innovation.</p> <p><b>Result:</b> Five (5) articles were published and distributed through the BC Holstein News. The publication has 2,300 subscribers and reaches all 520 dairy producers.</p> <p><b>Impact:</b> To be determined.</p> <p>Contact: <a href="#">BC Dairy Association</a></p>	<p>\$3,250</p> <p>March 2014</p>
<p><b>2014 Renewable Agri-Energy Forum / SCA111</b></p>	<p><b>Objective:</b> Renewable energy and emerging waste management techniques are of growing interest to agricultural producers. The objective of this forum was to update the industry on new developments in the field.</p> <p><b>Result:</b> Twelve (12) presentations were given during the four Forum sessions. An estimated 130 people attended the Forum with no individual session having less than 70 participants.</p> <p><b>Impact:</b> To be determined.</p> <p>Contact: <a href="#">Matt Dickson</a>, <i>Renewable Agri-Energy Initiative</i></p>	<p>\$5,000</p> <p>February 2014</p>
<p><b>Rangeland Seeding – Web-based decision support tool / SCA105</b></p>	<p><b>Objective:</b> The <a href="#">BC Rangeland Seeding Manual</a> (2013) provides guidance for seeding decisions in rangeland forage production systems. The project objective was to make the information contained in the manual more accessible to a wide range of end users.</p> <p><b>Result:</b> This project converted the manual to a web-based decision-support tool accessible at the following URL: <a href="http://www.peaceforage.bc.ca/rd_healthy_forages.html">http://www.peaceforage.bc.ca/rd_healthy_forages.html</a></p> <p><b>Impact:</b> To be determined.</p> <p>Contact: <a href="#">Peace River Forage Association</a></p>	<p>\$14,000</p> <p>March 2014</p>
<p><b>BC Animal Welfare Youth Ambassador Program / MOU026</b></p>	<p><b>Objective:</b> To respond to the growing public interest and concern over animal welfare by customizing and delivering a “train the trainer” program on the subject matter.</p> <p><b>Result:</b> A successful animal welfare program from Ontario was customized to a BC context, and 18 people were trained to deliver the</p>	<p>\$2,600</p> <p>Mar 2014</p>

	<p>program to youth across BC.</p> <p><b>Impact:</b> The program is now being delivered to youth across the province.</p> <p>Contact: Leslie MacDonald, Ministry of Agriculture</p>	
<p><b>Path to Commercialization Program / SCA220</b></p>	<p><b>Objective:</b> Building on accomplishments in 2013/14 (INN87/INN119), this program assists small and medium-sized BC food and nutraceutical processing entrepreneurs to become more competitive by providing access to expert, one-on-one business coaching and training workshops.</p> <p><b>Result:</b> The program pioneered a guided business process for BC food and nutraceutical manufacturing entrepreneurs, arming them with valuable information about financial resources, regulatory requirements, technology requirements, market awareness and labour management strategies.</p> <p><b>Impact:</b> 44 entrepreneurs have completed the program since 2013. Nineteen (19) past participants have successfully launched or commercialized new products in BC markets. Participants anticipate creating at least 80 new jobs by 2017, with estimated sales increases of \$745K. Several past participants have recently won or been nominated for various industry awards.</p> <p><i>For more information, please contact the <a href="#">BC Food Processors Association</a></i></p>	<p>\$150,000</p> <p>Mar 2015</p>
<p><b>Increasing farm competitiveness through improvements in on-farm efficiency (LEAN) / MOU219 &amp; GSA230</b></p>	<p><b>Objective:</b> To initiate a research-based approach to eliminate inefficiency and improve business processes (LEAN) among participating farms. The project used a “train the trainer” approach to build staff capacity and expand the adoption of LEAN concepts and practices by agricultural producers, ultimately improving sector competitiveness.</p> <p><b>Result:</b> The project helped 9 participating companies identify wasteful practices, and through their elimination, increased competitiveness of the participating businesses.</p> <p><b>Impact:</b> Estimated annual savings in excess of \$20K were reported by the majority of program participants, and staff were trained to deliver LEAN training to others within their operations.</p> <p><i>For more information please contact <a href="#">David Woodske</a>, BC Ministry of Agriculture.</i></p>	<p>\$65,000</p> <p>Apr 2015</p>
<p><b>Strategic Outreach Initiative</b></p>	<p>The Innovation Program supports the Strategic Outreach Initiative delivered by the Sector Development Branch, Ministry of Agriculture, by providing funding to bring world class speakers to agrifoods events across BC. The goal is to bring promising new ideas to the regions and</p>	<p>\$46,000</p> <p><i>ongoing</i></p>

	stimulate local agri-innovation.  <i>For more information, please contact <a href="#">Chris Zabek</a>, BC Ministry of Agriculture.</i>	
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## Nutrient Management

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Regional Nutrient Management Plan / MOU022</b>	<p><b>Objective:</b> The project piloted a regional, community-based approach to using manure nutrients more efficiently in the Fraser Valley, with a focus on animal agriculture.</p> <p><b>Result:</b> Two cooperator groups were assembled to collaboratively explore nutrient management data and options. Feasibility studies examined the potential for sharing two separate technologies among farmers in each cooperator group:</p> <ul style="list-style-type: none"> <li>(i) <b>mobile centrifuge:</b> to separate solids and phosphorus from raw liquid manure; deemed not feasible</li> <li>(ii) <b>shallow manure injector:</b> deemed feasible, but there was a lack of interest among cooperators for sharing the equipment.</li> </ul> <p><b>Impact:</b> To be determined.</p> <p><i>For more information, please see the Ministry of Agriculture's <a href="#">Nutrient Management website</a> or contact <a href="#">David Poon</a>, BC Ministry of Agriculture.</i></p>	<p>\$116,773</p> <p>Mar 2015</p>

## Pest Management

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Bees - Pest resistant selection and breeding with biomarkers / SCA073</b>	<p><b>Objective:</b> The Varroa mite can have significant negative impacts on the health and vigour of honey bee colonies, reducing the pollination of BC's agricultural crops. This project sought to identify genetic markers for Varroa mite resistance that could lead to enhanced selective breeding opportunities.</p> <p><b>Result:</b> Three genetic biomarkers were successfully identified. In the next project phase, the University of British Columbia will continue to work with bee breeders to test the effectiveness of the identified biomarkers and selection methods in the field.</p> <p><b>Impact:</b> To be determined.</p> <p>Contact: <a href="#">Dr. Leonard Foster</a>, University of British Columbia</p>	<p>\$37,500</p> <p>September 2014</p>

<p><b>Biofungicide: Trichoderma Blends / SCA076 &amp; URA 229</b></p>	<p><b>Objective:</b> Organic and conventional crop producers are looking for new approaches to manage pests. These projects explore the efficacy of new blended biofungicide products (<i>Trichoderma</i> blends) for use on berry crops and vegetable seed beds, and seek to fulfill requirements for federal product registration through the Pest Management Regulatory Agency (PMRA). The long-term goal is the commercialization of effective new biofungicide products.</p> <p><b>Results:</b> Initial studies were completed and a pre-registration consultation with the Pest Management Regulatory Agency was completed (Jan 2015).</p> <p><b>Impact:</b> To be determined.</p> <p>Contact: <a href="#">Dr. Deborah Henderson</a>, Kwantlen Polytechnic University</p>	<p>\$189,333</p> <p>ongoing</p>
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## Plants

<i>Project Title/Code</i>	<i>Project Summary/ Project Lead</i>	<i>GF2 Funding/ Completion Date</i>
<p><b>Nursery Sector Competitiveness / SCA074</b></p>	<p><b>Objective:</b> Nurseries must source their plants from certified virus-free stock to maintain commercial credibility. The purpose of this project was to provide easy access to the material.</p> <p><b>Result:</b> A centralized facility at the University of the Fraser Valley was developed with capacity to provide virus-free plant material to BC producers.</p> <p><b>Impact:</b> Two certified virus-free hazelnut varieties are being stored at the facility, and several nurseries have acquired and begun propagating plant material. Rootstock for 20+ other species is also being developed for industry use.</p> <p><i>For more information, please contact <a href="#">Tom Baumann</a> University of the Fraser Valley.</i></p>	<p>\$24,000</p> <p>April 2014</p>
<p><b>Berry Liaison Officer / SCA027</b></p>	<p><b>Objective:</b> The blueberry industry uses noise devices to scare birds away from their crops, a practice that neighbours sometimes complain about. The aim of this project was to develop a solution to reduce noise complaints.</p> <p><b>Result:</b> Seventy nine (79) growers attended three information events, 49 have implemented a bird predation management plan, and 14 adopted alternative bird management devices.</p> <p><b>Impact:</b> There was a 55% reduction in noise complaints in 2013. Growers continue to work with the liaison officer to find alternative solutions that will further reduce noise.</p> <p><i>Please contact the <a href="#">BC Blueberry Council</a> for more information.</i></p>	<p>\$90,000</p> <p>Mar 2015</p>

## Precision Agriculture

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Evaluation and Piloting of Unmanned Aircraft Vehicles for Agricultural Applications in BC / GSA332</b>	<p>The project aims to assess and compare the viability and utility of unmanned aerial vehicles (UAVs) for a range of agricultural uses specific to the BC context. The project will include case studies and field demonstrations, and aims to advance the development, adoption and commercialization of UAV technologies by BC entrepreneurs.</p> <p><i>For more information, please contact <a href="#">David Trotter</a> or <a href="#">Corrine Roesler</a>, BC Ministry of Agriculture.</i></p>	<p>\$50,000</p> <p><i>ongoing</i></p>

## Waste to Resource

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Phosphorus extraction (struvite) from dairy manure / SCA075 &amp; URA216</b>	<p><b>Objective:</b> Dairy manure contains an excessive amount of phosphorus, a critical nutrient for optimal crop growth. This project piloted new microwave and radio-frequency technology capable of extracting phosphorus from dairy manure and converting it to struvite - a slow release fertilizer with commercial value.</p> <p><b>Result:</b> The new technology was superior to the previous design allowing for better extraction of phosphorus.</p> <p><b>Impact:</b> Findings have been incorporated into the development of a full-scale demonstration system (see URA302). There is international interest in commercializing the technology.</p> <p>Contact: <a href="#">Dr. Victor Lo</a>, <i>University of British Columbia</i></p>	<p>\$122,000</p> <p>April 2015</p>
<b>Phosphorus extraction (struvite) from dairy manure / URA302</b>	<p>Building on GF2 innovation projects funded in 2013/14 (SCA075) and 2014/15 (URA216), researchers will complete the design, fabrication, and debugging work on the radio frequency and microwave systems, and install a full-scale demonstration system at the UBC Dairy Education and Research Centre in Agassiz, BC. The technology can extract and recover phosphorus from the dairy cattle ‘waste’ stream, producing a commercially viable slow-release fertilizer (struvite), and offering an alternative to manure spreading which has historically resulted in negative impacts from excess phosphorous in the environment.</p> <p>Contact: <a href="#">Dr. Victor Lo</a>, <i>University of British Columbia</i></p>	<p>\$125,000</p> <p><i>ongoing</i></p>

## Water Management

<i>Project Title / Code</i>	<i>Project Summary / Project Lead</i>	<i>GF2 Funding / Completion Date</i>
<b>Agriculture Water Demand Model / MOU009</b>	<p><b>Objective:</b> The Agricultural Water Demand Model (AWDM) was developed to provide current and future agriculture water demands for the Okanagan Basin and has since been expanded. The intent of the model is to help fulfill the Province's commitment under the Living Water Strategy to reserve water for agricultural lands.</p> <p><b>Result:</b> This project accelerated the development of information needed to forecast agricultural water needs in different regions of the province based on regional land use patterns and long term weather forecasting.</p> <p><b>Impact:</b> The project team continues to gather information and generate regional reports for additional areas of the province.</p> <p><i>For more information, please see the <a href="#">AWDM website</a> or contact: <a href="#">Geoff Hughes-Games</a>, BC Ministry of Agriculture</i></p>	<p>\$130,000</p> <p>Mar 2014</p>
<b>Water Use Reporting Centre Tool / SCA228 &amp; SCA313</b>	<p>Building on work completed in 2014/15, this project will produce a working prototype of the B.C. Water Use Reporting Centre (BCWURC) tool with improved user-functionality for broad adoption by the agriculture sector. The tool, currently hosted by the Okanagan Water Board, will enable agricultural water users (irrigators) across BC to easily report their water use in compliance with the new <i>Water Sustainability Act</i> (WSA). It is hoped that the tool will be recognized as a suitable proxy for water metering to report water use under the WSA, avoiding installation costs for water users across BC.</p> <p><i>For more information, please see the <a href="#">BCWURC website</a>, or contact <a href="#">Stephanie Tam</a>, BC Ministry of Agriculture.</i></p>	<p>\$100,000</p> <p><i>ongoing</i></p>
<b>Mobile Agricultural Irrigation Scheduling Calculator / SCA249</b>	<p><b>Objective:</b> To develop a mobile-capable version of the BC <a href="#">Agricultural Irrigation Scheduling Calculator</a> (the Calculator) that producers can use for irrigation management while working in the field.</p> <p><b>Result:</b> A mobile calculator was successfully developed, and is available at the following website: <a href="http://ag-calc.irrigationbc.com/">http://ag-calc.irrigationbc.com/</a></p> <p><b>Impact:</b> The new tool helps irrigators optimize water use by making calculations and adjustments in real time. Irrigators can now more effectively comply with new regulations under the Water Stewardship Act, and better conserve water while maximizing productivity.</p> <p><i>For more information, contact <a href="#">Stephanie Tam</a>, BC Ministry of Agriculture.</i></p>	<p>\$75,000</p> <p>Mar 2015</p>



