



**Investment
Agriculture
Foundation**
of British Columbia



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GROWING TOMORROW

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The latest from the Investment Agriculture Foundation of British Columbia | **VOLUME 12 ISSUE 1**

Innovation

The Future of Agriculture

“Innovation distinguishes between a leader and follower.” Steve Jobs

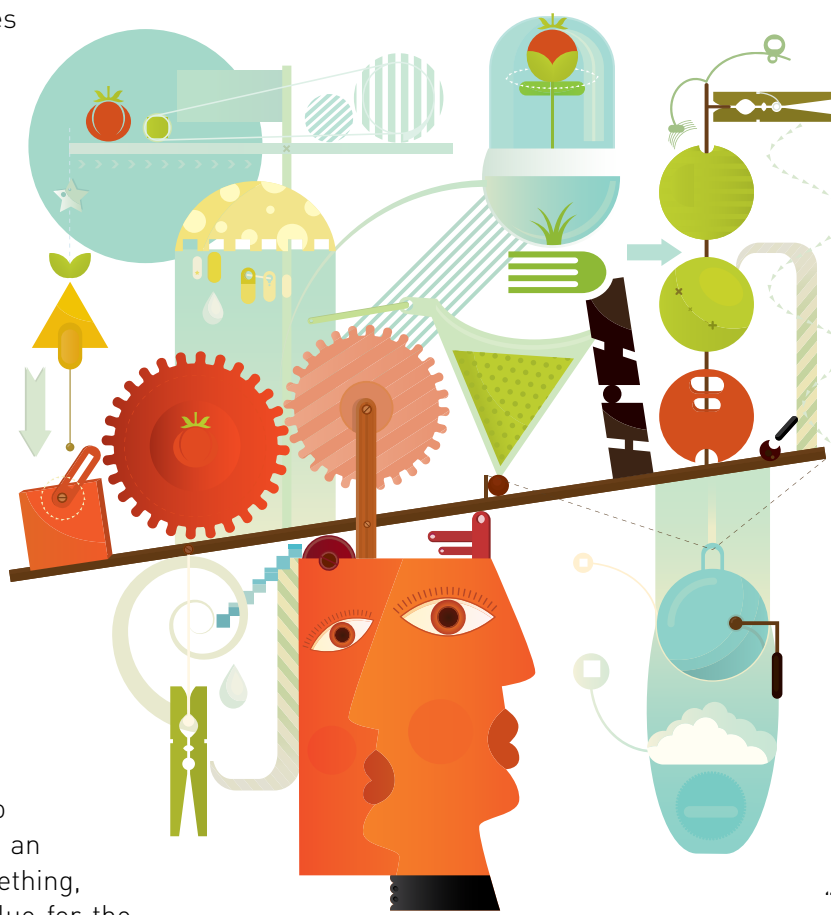
As the global population surpasses seven billion people, agriculture is being called to lead on solutions for issues ranging from food production and food safety, to renewable fuels and reducing greenhouse gas emissions. From the barn to the boardroom, innovation is critical to the industry’s ability to meet these demands.

The Investment Agriculture Foundation provides support to all levels of the BC agriculture sector to help transition innovative ideas into competitive advantages.

“Innovation is really about creating value with a new idea. It has to have both elements; it starts with an idea and new way of doing something, but if it doesn’t turn that into value for the individual, company or society, then it isn’t innovation, it’s invention,” says David Sparling, professor and chair of Agri-Food Innovation and Regulation at the University of Western Ontario’s Richard Ivey School of Business.

Innovation can be achieved through changes to products, processes, and relationships, and change in one area will affect changes to the others. The creation of value can be more complex, incorporating economic values, as well as environmental and social values.

Farm-level innovations often focus on reducing input costs, improving business efficiencies, and increasing profit margins for farm products. While the driver is usually economic, changes to farm practices may also be to reduce environmental impacts and health risks.



Innovation at the association level has the ability to create entirely new products or markets for an industry. Getting into a market like China, for example, may require broad changes to processes, packaging or relationships. In order to meet those requirements, relationships along the supply chain may need to change and adapt.

“Most innovations that create value are delivered by business,” says Sparling. “Ultimately, innovation rests with a business owner or manager, and people that they work with. But innovation also involves risk and programs like those offered by IAF can encourage innovation by sharing some of that risk.”

In 2008, IAF introduced the Award of Excellence for Innovation to celebrate the producers,

processors, agri-business owners and operators and other industry leaders whose innovations generate economic, environmental or social benefits to British Columbia and the BC agriculture and agri-food industry.

“Innovation is critical for growth in any sector,” says Bill Vanderkooi, president of the Bakerview EcoDairy Association and CEO of Nutriva Group, who received the award in 2011. “Cultivating a culture of innovation starts with a passion to use innovation as a key driver and strategy for the business to become a leading niche market player. It requires a clear vision, values and the development of core competencies.”

The IAF also provides funding for projects of all sizes, delivering federal and provincial investment dollars through a number of initiatives and programs.

“The value in what we do is in supporting experimentation,” says Peter Donkers, IAF executive director. “It’s being able to provide funding to pilot new innovations that set the path for more effective adoption.”

Currently, IAF delivers the \$1.5 million, Canada-BC Agri-Innovation program under the federal-provincial-territorial *Growing Forward* initiative. The program provides up to \$250,000 in funding to businesses, organizations and individuals for projects aimed at assessing or adopting technologies on farms, in processing facilities, or throughout the rest of the supply chain.

Applications for Agri-Innovation projects will be accepted in April and July 2012. Interested parties are encouraged to contact an IAF program manager before submitting an application. Call 250.356.1662 or email: funding@iafbc.ca

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Agroforestry Development

It may seem a little out of the ordinary, but it's not revolutionary. We're talking about agroforestry, the combining of trees with crops or livestock to enhance the production of both.



Agroforestry melds the practices and products of agriculture and forestry to provide optimal management of land, animal and human resources. Shelterbelts protect soils, crops, livestock and farm buildings from wind and weather. Livestock eat small plants that would otherwise out-compete young trees. Pruning and thinning in woodlots improves wood quality and benefits the growth of berries, florals and herbs for natural health products.

In 2009, an updated agroforestry plan for British Columbia was published. Last year, a number of partners came together to re-establish the BC Agroforestry Industry Development Initiative and encourage wider adoption of agroforestry practices. IAF provides the funding, but the Federation of BC Woodlot Association drives the initiative under the guidance of a committee representing agriculture, forestry, conservation and the federal and provincial governments.

Making the business case for agroforestry and improving the market connections for these products and services are two of the initiative's goals. But first, farmers and woodlot owners are in need of more information on how agroforestry practices can help them. That's where demonstration pilot projects, extension and education come into play.

Want in on the action? The initiative makes up to \$421,000 available to match industry contributions towards agroforestry projects, but don't delay! Funding is available on a first come, first serve basis. Projects must be completed by the end of 2013.

For more information, visit the AIDI website (www.agroforestry.info) or contact George Powell by email (support@agroforestry.info) or phone 250.983.5114.

Funding: up to \$421,000 through the federal Canadian Agricultural Adaptation Program. (IS0012)

WASTE NOT WANT NOT

1 Dairy

When it comes to cattle, Fraser Valley dairy farmers have their hands full.

Large herd sizes mean dealing with increasing amounts of manure which must be managed properly. Much of this nutrient resource can be returned to the soil, but farmers must be able to store the manure during winter to ensure spreading at proper times. Storage is expensive and manure management can limit the growth of the dairy industry, not just in the Fraser Valley but throughout Canada. This led IAF and councils across the country to fund the University of British Columbia (UBC) in finding a solution.

Using technology they developed to remove phosphorus from municipal sewage-waste-water, UBC researchers adapted it for use on dairy cattle manure, allowing producers to recover excess phosphorus and nitrogen as a concentrated slow release fertilizer, struvite. Not only does nutrient conservation reduce the need for manure storage and decrease disposal costs for farmers, the struvite created provides a potential new source of income for farmers. Researchers have even discovered that the biogas produced during the process can potentially be converted into heat or electricity, generating further environmental and economic benefits!

Now nearing completion, it is anticipated that this three-year applied research project will significantly impact livestock farms across Canada. Dairy producers across the country can look forward to new alternatives for manure disposal that will enhance soil conditions and reduce their burden of storage and removal.

Kerry Doyle, president of Manure Systems Inc. in Abbotsford, is well acquainted with the problems faced by dairy farmers with manure disposal.

"Nutrient segregation and capture is at the forefront of the dairy industry's



concerns across North America, and I am proud to see Canada leading the way towards a solution that will significantly aid dairy farms," says Doyle.

"Technology like this is especially valuable as it addresses both environmental and financial aspects of today's livestock industry, both saving producer costs and turning this practice into an additional revenue centre on farms."

Funding: up to \$272,500 through former federal adaptation programming provided by IAF and councils in Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. (W0112C0)

2 Recycling

Some projects are so successful, the benefits keep coming and new projects are born. That's what has been happening in the Regional District of Okanagan Similkameen (RDOS).

Historically, burning was a common orchard removal practice in the region. Sadly, wood smoke is one of the most dangerous health hazards in BC.

"Regional districts have the capability and expertise in many areas that can significantly support the farming sector," remarks Brian Baehr, manager of agriculture environment initiatives at ARDCORP. "The RDOS is a leader in responding to the service needs of agriculture at a local government level."

In 2006, the RDOS took measures to reduce farm burning by developing an on-farm chipping program and waiving the tipping fees at the landfill for properly prepared agricultural waste.

In implementing these programs, two opportunities emerged to benefit both agriculture and the environment. Firstly, using wood chips as mulch to improve the soil and, secondly, improving recycling options for farmers.

In 2007, with funding from IAF through the federal Agriculture Environment Stewardship Initiative, comprehensive guides highlighting best management

practices for wood waste disposal and recycling of agricultural plastics made a significant impact on agricultural practices in the region.

"With the funding from IAF, we were able to reduce both smoke pollution and waste going to the landfill substantially in a remarkably short period of time," observes Allan Patton, a farmer and RDOS director for electoral area "C" (rural Oliver).

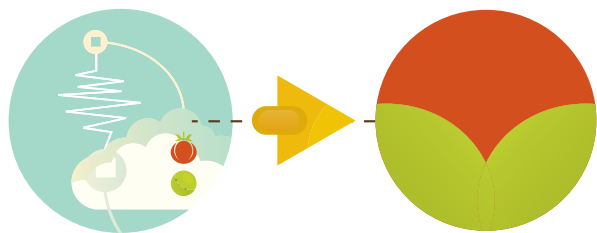
In 2010, with funding from the Agriculture Environment and Wildlife Fund, RDOS further updated the guides, complementing them with extension and educational materials to expand the program even more. Three ten-minute film clips covering all of the material were developed and made available in both English and Punjabi. Presentations were made at grower meetings and guides were widely distributed at local agribusinesses and government offices.

"When additional opportunities were identified, growers were more than willing to participate," notes Janice Johnson, owner of A Foot Step Closer, consultant on these projects and former air quality coordinator with RDOS. "These projects not only strengthen agriculture, but they also improve air quality, soil health and water for our entire region."

For more information visit: www.rdos.bc.ca

Funding: \$30,000 provided through the Agri-Food Futures Fund, Agriculture Environment and Wildlife Fund. (AEWF 10-005, 006, 013)

Creating Competitive Advantage



Agriculture and Agri-Food Canada (AAFC) recently announced a new national \$50 million program, the Agricultural Innovation Program (AIP), to help boost the development and commercialization of innovative new products, technologies and processes in the agricultural sector. This **new federal program** will provide support to industry-led science and technology that bridges the gap between ideas and products in the marketplace. Eligible applicants under Stream A - Knowledge Creation and Transfer include for-profit and not-for-profit organizations involved in developing agricultural value chains, agri-practices, products and processes.

Eligible applicants under Stream B - Commercialization include for-profit corporations, co-operatives and Aboriginal groups involved in the commercialization or adoption of innovative agricultural, agri-food or agri-based products, processes, technologies, or services.

Applications can be submitted to AAFC for review at any point until available support to accepted projects has been fully allocated. All project activities must be completed by March 31, 2013. (Approved projects under Stream A are encouraged to have their research activities completed by January 31, 2013.)

This new program is distinct from the \$1.5 million Canada-BC Agri-Innovation Program delivered by the Investment Agriculture Foundation as part of Growing Forward. AIP is part of the Next Phase of Canada's Economic Action Plan.

For more information about AIP please visit www.agr.gc.ca/AIP or call 1-877-246-4682.

Natural Option for Starling Control



BC blueberry growers lose millions of dollars each year to starling damage.

These prolific and invasive birds descend on berry fields to eat the ripe fruit, causing significant damage. Noisemakers, nets, trapping and chemicals are tools in the arsenal of the blueberry grower for starling control, but often these solutions are incomplete, costly and controversial.

Karen Steensma, biologist, farmer, and professor at Trinity Western University, is working with farmers in BC and Washington State to re-build kestrel populations in agricultural areas, and assess their potential as a natural deterrent to starlings and other pest birds.

Kestrels are the smallest falcon in North America, and the only native birds of prey that will adopt a nest box. They inhabit open fields or forest edges, and feed on insects, rodents and small birds. The small raptors are fiercely territorial, and have shown promise as effective competitors against starlings in some US cherry orchards. Once kestrels are established, a single nesting pair may protect up to 10 acres.

The project started by putting up more than 100 nest boxes adjoining blueberry fields in the Fraser Valley, and Whatcom and Skagit Counties, but it was clear that just providing boxes wasn't enough.

"In working with biologists, falconers, farmers and scientists on both sides of the border, we found that the background populations in this region were so low that it would take years before we could get a good level of occupancy," says Steensma.

To start building the population up, they imported young orphaned birds from other parts of the US. Steensma and her team have released 21 kestrels south of the border since 2008, and now the birds are starting to use nest boxes in those areas.

The study has also mapped land-use patterns for the region to determine where kestrels are most likely to succeed.

"The birds need habitat to nest, as well as ways to make a living – to obtain food," says Steensma. "The young kestrels practice on flies, bees and dragonflies. That's part of their diet. Having small rodents in the grass and the insects present, all of that makes it likely they will nest."

Funding: \$8,000 through the Agri-Food Futures Fund, Agricultural Environment and Wildlife Fund. (AEWF 09-023)

Hearty Winter Vegetables

Regarded within the Central Kootenays as the core of agricultural activity, the Creston Valley has the potential to produce food for the entire Kootenay Region and beyond. But there are a few hurdles in the way.

Like many other farming communities, Creston faces challenges including aging farmers and year-round vegetable production in a colder climate. Often when consumers purchase imported vegetables during the winter, they continue the habit during warmer months, undermining local farming.

With IAF's help, the College of the Rockies took a "two-birds-one-stone" approach to these issues. From its Creston Valley campus greenhouse, it educated children, youth and families on local food production and provided opportunities to grow winter crops.

Jean Hoover, a program participant and avid gardener who supplies farmers markets, praises the program's potential to empower the community.

"It's about allowing everyone to participate in food production and showing you can get

something from practically nothing ... even people without yards are growing wonderful produce from their balconies!" states Hoover.

Besides demonstrating practical techniques for winter growing, Hoover finds the mere idea behind the program is a powerful tool. "When it comes to local winter crops," she explains, "there is a gap in the market...this is a concept with tremendous commercial potential."

True to Hoover's prediction, program coordinator Anita Sawyer confirms that producers have already begun to diversify their crops and growing season to include a winter harvest. Sawyer believes the year-round production model holds great potential for growers across BC and anticipates an increasing focus on locally-produced food, rather than "relying on produce being trucked in."

According to Sawyer, the project also facilitated connections between agri-businesses, youth and the community. "We are seeing many high school student participants exploring careers in agriculture and getting their friends involved."

With the education of current farmers, the development of future ones, and increasing awareness of local food production on the part of consumers, the winter harvest project is helping to secure the long-term growth and sustainability of BC agriculture. While the information is particularly valuable in the northern climates, the principles of "all-season growing" can be applied everywhere.

Funding: \$55,000 provided through the former federal-provincial Safety Nets framework. (A0588)

UPCOMING APPLICATION DEADLINES

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www.iafbc.ca

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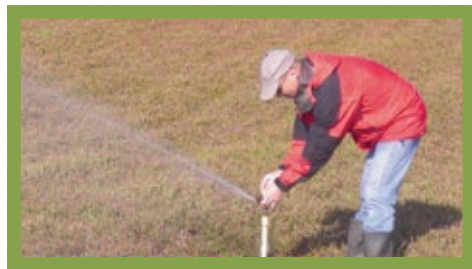
Improving Irrigation Uniformity

With no hands up, they knew something needed to be done.

At the August 2009 Cranberry Field Day, growers learned about the importance of irrigation uniformity from consultant Steve McCoon of Nelson Irrigation in Walla Walla, Washington. During the presentation, he asked for a show of hands on how many growers had ever checked their irrigation system for uniformity or measured their sprinkler nozzles for wear.

Cranberry growers rely on irrigation more than most other farmers in BC. Utilized as a distribution mechanism to control pests and diseases, irrigation is also a frost protection tool.

Noting little response to the US expert, the BC Cranberry Marketing Commission asked agrologist Mike Wallis to lead a survey of irrigation systems on a variety of BC cranberry fields to describe the types of systems used and their age, and to test for irrigation uniformity and measure nozzles for wear.



Mike Wallis checks sprinkler nozzle pressures in cranberry field during irrigation system assessment survey.

Twelve different cranberry farms, representing a diverse range of irrigation systems, were surveyed in Pitt Meadows, Langley, Richmond, Delta and on Vancouver Island. The age of the irrigation systems varied from nearly new to 20-years old and field sizes ranged from two to 20 acres. Catch cans were used to measure uniformity and a pressure gauge fitted with a pita tube was used to measure sprinkler nozzle pressure.

"We were very encouraged to observe that 86% of the farms surveyed were designed with tail water recovery. This increases the farm's water use efficiency and reduces their environmental footprint," observed Wallis. "However, 28% of the survey group's water distribution systems required attention to bring uniformity levels to recommended guidelines, so we have some room for improvement."

Cranberry farmers use the services of certified irrigation designers to create solid set irrigation systems that have a high coefficient of uniformity. The key to keeping that uniformity relies on regular inspection and maintenance. By performing two additional simple, non-technical tests, growers can retain or even improve the performance of their irrigation systems.

"Checking distribution and measuring nozzles is part of our routine now," notes grower Allen May of Columbia Cranberry in Richmond. "This project was a real eye opener."

Funding: \$7,805 provided by the Cranberry Industry Strategic Initiative, through the former federal-provincial Safety Nets framework. (S0002)



Understanding Hoary Alyssum

It may look pretty, but it's toxic to horses. We're talking about hoary alyssum (*Berteroa incana*) – an invasive weed found across the southern interior of British Columbia and beyond. This European native is a prolific seed producer that infests forage crops, rangelands and pastures and competes with desirable forages, reducing their yield. As a first step to developing effective management practices for this plant, researchers at the University of British Columbia undertook a two-year project to improve their understanding of hoary alyssum. First, samples of the soil seed bank were collected near Grand Forks to identify the magnitude of the problem. Then, a series of tests were conducted to monitor germination behaviour, determine its effect on different forages, evaluate its response to mowing, and identify whether herbicides and fertilizers could give the forages a fighting chance. There is no silver bullet for eradicating this weed, but a lot of new information was unearthed, much of which can point land managers and ranchers in the right direction and help keep the plant from spreading more rapidly.

Funding: \$32,100 from IAF and the Alberta Agriculture and Food Council through former federal adaptation programming. (W0127) *

It Pays to Plan Ahead

Communities across British Columbia are planning for agriculture. In the last year, Maple Ridge, Central Saanich, West Kelowna, Campbell River, North Saanich, Central Kootenay, Kootenay Boundary and Cowichan Valley finished their agricultural area plans. Many are now taking steps to implement recommendations, ranging from bylaw changes to support for farmers markets. Langley, Abbotsford, Denman Island and Haida Gwaii aren't quite as far along, but they recently completed agricultural inventories. This summer Denman decided to take it one step further and pursue a full agricultural area plan, joining six other communities who are at various points along the process. Over the past few years, there has been a noticeable increase in requests for IAF funding from local governments and regional districts to produce these inventories and area plans. And that certainly bodes well for the future of agriculture in these areas of the province.

Funding: up to \$45,000 through the former federal-provincial Safety Nets framework to create or update an agricultural area plan. (A0577, A0590, A0610, A0629, B0016.15, B0016.16, B0016.17, B0016.20, B0016.25, B0016.26, B0016.27)

