

InFARMation

Yukon Agriculture Branch Quarterly Bulletin

Summer, 2019

Volume 32 Issue 3



What's Going on at the Farm?

Work at the Agriculture Branch research farm this year includes the first year of a three year national bush bean and potato trial that looks at improving food production in northern soils.

Many northern communities face a number of issues related to food security such as reliable access to diverse fresh produce, high transport costs, and frequent disruptions to the supply chain. One strategy to help address these issues is local field production. However, a number of challenges (short growing seasons, poor soil quality, extreme weather, etc.) can disrupt local food production. Many vegetable growers in northern communities produce on small scales and often have limited capacity for high-cost technologies (e.g. contained systems, greenhouses). Post-harvest diseases also limit the capacity to store crops. These diseases are also poorly documented. We see a need to co-develop low-cost field production and storage solutions with our northern partners.

Project Goals: Agriculture researchers co-developed a project with local partners to leverage local agricultural knowledge and infrastructure. Researchers established field experiments in Yukon, Labrador and Newfoundland to grow locally-relevant crops such as green beans, carrots, potatoes and rutabagas. The project's goals are to evaluate low-cost, environmentally sustainable solutions for increasing production of a diverse spectrum of marginal crops in relatively poor northern soils, to evaluate strategies that reduce post-harvest storage losses, and to assess local wild food resources.

Increasing Production of Marginal Crops: Using field experiments, the study is evaluating the impacts of different plasticulture systems (PCS). PCS such as low tunnels and bio-degradable and/or photo-degradable plastic mulches. PCS are low-cost and can address many key challenges to northern agriculture by warming air and soil microclimates and trapping soil moisture. The study will compare yield, crop nutritional content, and disease and insect pest incidence under field conditions using combinations of bio-plastic mulches and low tunnels.

Northern Soil Health and Environmental Impacts of Bio-plastics: The study will characterize soil health under PCS treatments by quantifying chemical, biological and physical properties. Researchers will evaluate soil biological activity and the effects of soil type and climate on decomposition rates using field and lab studies. They will also assess the environmental impacts of degradable plastic mulches in northern soils by evaluating the presence and accumulation of bio-plastic residues using mass spectrometry-based analyses.

Continued on page 2...



Director's Message

Hi folks,

It's been like living on the prairies this June. Warm temps and good rain falls should keep most crops in good shape. Hopefully there hasn't been any issues with hail, and hopefully it is dry out on the days you have to harvest.

Our office has been a hive of bees through this spring with a number of projects on the go. We even have staff working with bees, which seems like a great idea so long as you avoid getting stung.

We are supporting a national research trial on bush beans and potatoes under a variety of covers. We have been trying to reach out and get to every farm with sheep and goats to ensure everyone understands the upcoming control order. If you have sheep or goats and have not been in touch with the Agriculture Branch, please give us a call.

We have also been drafting an updated agriculture policy, which looks toward the year 2030. We released some larger agriculture-zoned lots out in the Ibex Valley through our Planned Agriculture Land approach, which focuses on and ranks the business case put forward by the prospective farmer.

I'm heading away for a stretch, in my place will be Kirk Price. Kirk will be acting until the end of December. Kirk has lived in the Yukon for the past 20 years working in forestry. Most recently, he's worked at Forest Management Branch as Operations Manager.

To date, he's met with farmers in Dawson and Whitehorse. He looks forward to meeting more of you in the coming months. He is excited to be part of the Agriculture Branch team and working with the agriculture sector. You can always reach him through our front desk to catch up.

Matthew Ball
Director, Agriculture Branch

What's Going On At The Farm? (...continued)

Post-harvest Storage Diseases:

Root crops will be sampled in storage to isolate and identify pathogens responsible for post-harvest losses in yield/quality. Researchers will characterize pathogens for traits such as pesticide sensitivity. This will provide the first dataset on pathogen populations affecting stored vegetables in the North. We will examine disease mitigation strategies that include both field and storage management criteria, harvesting techniques, germplasm choice and post-harvest treatments.



Overall Impact:

This research will leverage local northern knowledge/infrastructure relating to field production. It will lead to co-developed field management practices for maximizing production of marginal crops in Northern climates and minimizing post-harvest loss. This research will also identify sustainable field production practices for boreal and northern communities, particularly as they pertain to northern soil health and quality.

Julia A. Wheeler, Ph.D.
Research Scientist
Science and Technology Branch
Agriculture and Agri-Food Canada
Government of Canada
julia.wheeler@canada.ca
709-793-3164



ForageBeef.ca Gets a Facelift

This article was written by Dr. Reynold Bergen, Science Director at the Beef Cattle Research Council. It originally appeared in the June 2019 issue of Canadian Cattlemen magazine and is reprinted with permission.

Canada's National Beef Strategy has four goals that our industry aims to achieve by 2020. For the past year this column has explained how research is contributing to a 15% increase in carcass cut-out value (the Beef Demand pillar), a 15% improvement in production efficiency (Productivity), and a 7% reduction in cost disadvantages compared to Canada's main competitors (Competitiveness). The fourth goal (Connectivity) is about improving communication within industry and with consumers, the public, government and partner industries. Research contributes science-based information to underpin fact-based communication, policy and regulation, as well as extension (also known as technology transfer) activities to translate research results into improved on-farm production and management practices.

Extension used to be a core mandate for governments and universities; they all had extension staff, held field days and published producer-focused bulletins. Some researchers are still active in extension, but most institutions have shifted their focus to scientific research and technology development. The private sector has filled the extension gap in spots, especially where there is a clear profit motive for the company or individual doing the extension. This often works best when there is a product to sell, like a nutritional supplement, vaccine, or electric fencer. It is more challenging for the private sector to justify extension when the product is a management practice that is hard for a company to charge for, needs to be highly customized to suit individual operations, or primarily benefits the customer. Examples include low-cost winter feeding, crossbreeding, rotational grazing, and low-stress handling. Private sector extension can also be difficult with practices that benefit the overall industry but might not directly or immediately profit any specific individual (e.g. some animal welfare practices, antimicrobial and environmental stewardship). The BCRC tries to fill those gaps.

The BCRC first dipped its toe into extension when we co-funded www.foragebeef.ca in 2002. This initiative was spearheaded by AAFC's Duane McCartney and became a comprehensive forage resource that Alberta Agriculture maintained as a standalone website. Consequently, the BCRC didn't develop competing forage resources when we created our www.beefresearch.ca as a credible, one-stop-shop for beef and cattle research, production and management information.

Times change, though. In 2018, Alberta's government decided that it couldn't maintain www.foragebeef.ca as a separate website. The BCRC was presented with three options. One was to leave www.foragebeef.ca alone but not maintain it, letting it gradually erode as links got broken and content became outdated. A second was to transition some select content onto Alberta Agriculture pages. A third option was to incorporate www.foragebeef.ca into www.beefresearch.ca. That's the option we chose, with support from the Alberta government via the Alberta Beef, Forage and Grazing Centre. That's why you've been directed to www.beefresearch.ca if you've looked for www.foragebeef.ca lately.

The BCRC has an archived copy of the www.foragebeef.ca content, and we are gradually updating, repackaging, and transferring it to the Forage and Grasslands section of www.beefresearch.ca. This will take time, given the amount of information involved. Our first step was to conduct web analytics to learn which www.foragebeef.ca topics are most popular. We're using that information to prioritize the topics we update and edit. For example, the www.foragebeef.ca Drought Management page was recently updated and posted on www.beefresearch.ca.

The way things look today, drought will be on the minds of a lot of producers attending the Canadian Beef Industry Conference (CBIC) in Calgary on August 13-15. The CBIC is co-hosted by the BCRC, Canada Beef, Canadian Beef Breeds Council, the Canadian Cattlemen's Association, and the National Cattle Feeder's Association. The CBIC's Bov-Innovation session is a popular workshop full of tips and ideas that producers can take home and adopt. Bov-Innovation pairs an expert explaining the science behind best practices with a leading producer explaining how they have adopted these practices to benefit their cattle and their profitability.

Continued on page 4...

ForageBeef.ca Gets A Face Lift (...continued)

This year's topics chosen from producer suggestions are:

"Dealing with Drought" will pair Dr. John McKinnon with Graeme Finn (Crossfield, Alberta) to address the challenge of cost-effectively meeting the beef cow's current and future nutritional requirements for maintenance, lactation, and reproduction when feed is scarce and expensive, while still endeavoring to maintain a healthy forage stand.

"Alternatives to Antimicrobials" will see Dr. Steve Hendrick of the Coaldale Veterinary Clinic and rancher Stephen Hughes from Longview, Alberta discuss strategies to reduce the need for antimicrobials on your operation, and how this can benefit you. You're also invited to join us on the afternoon of Thursday, August 15th, as the BCRC explains how research and technology transfer is impacting farms and ranches across Canada. Examples of innovation and progress will be shared as well as ideas of future objectives and research priorities. Conference registration is not required for the Thursday open house.

Registration for the CBIC is now open and producers are encouraged to register soon. Information on the full conference, as well as registration, accommodations, flights, and agenda can be found at www.canadianbeefindustryconference.com. We hope to see you there!

The Beef Research Cluster is funded by the Canadian Beef Cattle Check-Off and Agriculture and Agri-Food Canada with additional contributions from provincial beef industry groups and governments to advance research and technology transfer supporting the Canadian beef industry's vision to be recognized as a preferred supplier of healthy, high quality beef, cattle and genetics.

The Corner L.O.T.

Land, Opportunities & Tidbits from the
Agriculture Branch's Lands Unit

What do livestock, trees, forage, carbon sequestration, and wildfire suppression have in common?

Silvopasture. The deliberate integration of trees, forages and livestock to take advantage of their beneficial interactions¹.

Trees have traditionally been important elements of temperate agricultural systems around the world, but there has been increasing separation of agriculture, forestry and nature over the past few decades². Trees at five metre trunk separation let in sufficient light for 95% of the land beneath to produce forage.

Silvopasture systems are deliberately designed and managed to produce a high-value timber product in the long term while providing short-term annual economic benefit from a livestock component through the management of forage or an annual crop component³. Five metre trunk separation reduces the risk of rapidly moving wildfire compared to fire control methods with closer spacing.

Silvopasture promotes carbon sequestration (the removal of greenhouse gases). Research suggests silvopasture far outpaces any grassland technique for counteracting the methane emissions of livestock and sequestering carbon under-hoof. Pastures strewn or crisscrossed with trees sequester five to ten times as much carbon as those of the same size that are treeless, storing it in both biomass and soil⁴.

A three dimensional utilisation of the land, supporting soil development, forage/crop and meat production, and timber resources works to reduce both the causes and effects of climate change.

1 Clason, T. R., and Sharrow, S. H. 2000. Silvopastoral practices. P 119-148 in: North American Agroforestry: An Integrated Science and Practice. H. E. Garrett, W. J. Rietveld, and R. F. Fisher, eds. American Society of Agronomy, Madison WI

2 Smith, Pearce & Wolfe. Jan 2012. European perspective for developing modern multifunctional agroforestry systems for sustainable intensification. Renewable Agriculture and Food Systems: 27(4); 323-332.

3 <https://www.silvopasture.org/>

4 Project Drawdown <https://www.drawdown.org/solutions/food/silvopasture>



If you are interested in silvopasture techniques and want more information, please call Jonathan Lucas with the Agriculture Branch at (867)667-3699.

Sheep and Goat Control Order Check-In



What is happening?

A Control Order is coming into effect on January 1, 2020 that sets conditions on how domestic sheep and goats are kept in Yukon. The Control Order is not to restrict farmers from raising sheep and goats, but rather to protect the industry and lower disease risks to our valuable wild sheep and goats.

Agriculture Branch and Animal Health Unit staff are visiting with sheep and goat owners throughout Yukon to begin testing and to discuss fencing and funding options. At this time, a number of farms completed the first round of testing, with some others having completed all three rounds. What we have found is there are considerably more farms and individuals raising domestic sheep and goats in Yukon than originally anticipated. It has been very encouraging to see the strength of this industry and the diverse ways farmers have chosen to engage in livestock. The following Q&A is meant to help ensure as much information is available to affected farmers.

Q: How do I make sure I'm ready for the Control Order?

A: You can contact the Animal Health Unit (867-667-5600) on the steps you need to take to be in compliance with the Control Order. An Animal Health Inspector and a member of the Agriculture Branch will then make a site visit to your farm to discuss the Control Order, requirements for testing and fencing, and funding available to help you comply.

Q: I understand that my animals need to be tested for M. ovi. How do I access this service?

A: Your sheep and goats need to be tested for M. ovi before January 1, 2020. There is no cost to owners for testing and owners may be compensated for their time to assist with sampling. The test involves taking a swab from the nostrils of each sheep and goat. The exact testing schedule may vary slightly from farm to farm. The testing usually requires a series of three swabs collected from each animal with about 30 days between each swab. Ongoing testing requirements will be based on risk and determined on a farm-by-farm basis. Contact the Animal Health Unit to arrange for testing.

Q: Have there been any positive tests for M. ovi in domestic sheep or goats in Yukon?

A: Yes, some domestic sheep or goats have tested positive for M. ovi. Testing is ongoing, and the Animal Health Unit and Agriculture Branch are working directly with livestock owners whose animals are affected by these results.

Q: What if I want to bring in domestic sheep and goats from outside Yukon?

A: After January 1, 2020, an import permit from the Agriculture Branch will be required before domestic sheep or goats are introduced to Yukon. This permit will outline conditions for import intended to reduce the risk of disease transmission. An Animal Health Inspector will work with you to set conditions specific to your farm.

Q: What are the fencing requirements under the Control Order? Are funds available to assist with fencing?

A: The requirements for fencing will be determined on a farm-by-farm basis, following these three principles:

1. Prevent livestock from escaping an enclosure;
2. Prevent contact between wild and domestic sheep and goats; and
3. Discourage wild sheep and goats from getting into an enclosure.

Management strategies and the existing fences on the property will be factored into the requirements. Funding is available to help farmers upgrade fences, if required. Owners can contact the Agriculture Branch to learn more about funding and how to apply.

Q: What are my options if I do not want to continue raising sheep or goats under the Control Order?

A: If you no longer wish to keep sheep or goats under the Control Order, contact the Animal Health Unit to discuss your options. You may be eligible for funding support or compensation if you depopulate your herd through sale or slaughter.

For more information, please contact:

Agriculture Branch
867-667-5838
agriculture@gov.yk.ca

Animal Health Unit
867-667-5600
animalhealth@gov.yk.ca

Reflections on the 2019 Circumpolar Agricultural Conference



Despite the fact that 'North of 70' Lapland is half a world away, the look and feel of an early spring day in Roaniemi would be familiar to any Yukoner: stark blue skies, bright sunshine, cold winds, icy riverbanks, snowy footpaths, low rolling hills, and sparse boreal forests. The scenery is an immediate reminder that members of the circumpolar agricultural community work in very similar cold climate conditions.

The theme of the 10th Circumpolar Agriculture Conference held in Rovaniemi, Finland, was "new thinking about local agriculture in the circumpolar Arctic". For the last few months, I have been thinking about sustainability, integration of industry sectors, and adaptation to climate change. Several speakers talked about these three topics - among them was Mikko Peltonen of Finland's Ministry of Agriculture and Forestry - which are critical to the expansion and development of northern agriculture. The conference prompted me to think about them in new ways.

Consider the definition of sustainable agriculture. I often think about this topic because it is part of the Yukon Agricultural Association's mission statement "...to foster and promote sustainable Yukon agriculture...." A question that I have considered over the past few years is: what makes an industry sustainable? I usually think about the assessment of economic viability and profitability, as well as ecological conditions and environmental factors. However, Peltonen grabbed my attention when she added "social and cultural context" to the discussion of sustainability. How is this third concept relevant to Yukon Agricultural Association's mission statement? The association is already involved in building community relationships, supporting local businesses, thinking about cultural connections, and partnering with the culinary stakeholders. Until the conference, I had not linked them with the definition of sustainability.

Peltonen also talked about how circumpolar farms are often connected with the harvesting of forest products, the surrounding wilderness, and other industries. The shared management of resources was a common conference topic, including farm-scale biogas plants and agro-forestry. Some of the most compelling presentations highlighted innovations related to agro-tourism in Iceland, Greenland and Mongolia. Additional revenue from tourists who visit Finnish reindeer farms helping to sustain the ancient herding lifestyle - here we are again thinking about the sustainability of agriculture in cold climate environments - in this case making a connection to other industries and shared resources. These relationships are a growing theme in my work with the Yukon Agricultural Association. On a daily basis, I manage communications related to wildlife, land management, forestry, and tourism. Each relationship presents challenges and opportunities, but they are important stakeholder groups in Yukon's 'North of 60' agriculture story. This conference topic reinforced the importance of Yukon Agricultural Association's work to forge new understandings about opportunities offered by other industries and stakeholder groups.

Not surprisingly, circumpolar climate change also featured in many conference sessions. Seven presentations focused on the ways in which agricultural industries are adapting to changing growing conditions. Presenters reported on future opportunities and threats: new pests and pathogens in northern Scandinavia, the extension of the growing season in Greenland mixed with severe storms and summer droughts, the expansion of ticks in Sweden, the growing of barley and cereals in Lapland regions, and the astounding increases in perennial grass production in northern Finland.

Peltonen's final comments included a sobering Scandinavian statement: "Arctic climates are vulnerable to climate change and the changes will be irreversible."

Although I receive regular emails and attend meetings on the topic, Yukon's agriculture sector is only just starting to think about how to respond and adapt to this global issue. It may prove to be an overwhelming challenge but it is reassuring to know that there is a wider circumpolar agricultural community that can provide an established framework of support.

Jennifer Hall is the executive director of the Yukon Agricultural Association. She wishes to thank the Canadian Agricultural Partnership for providing the funds that covered her conference fees and travel expenses. The 2019 Circumpolar Agriculture Conference took place at the Arktikum, a science centre and museum on the banks of the Ounasjoki River in Rovaniemi, Finland, from March 13 to 15, 2019. The next conference will take place in 2022 on the Faroe Islands.

When can the term organic be used in agriculture?



WHAT IS ORGANIC AGRICULTURE?

Organic agriculture is a production method that promotes and enhances biodiversity, protects long-term soil health and reduces the impact of agriculture on climate change by encouraging carbon sequestration in the soil. In Canada, organic practices are regulated by the Canadian Organic Standards, and producers or processors who use the Canada Organic Logo must meet these standards.

Organic production is designed to: respect the environment through the responsible usage of soil, water and air, minimizing agricultural pollution, protect the long-term health of the soil, encouraging soil biological activity and minimizing soil degradation and erosion, provide livestock with humane living conditions for their health and well-being, as well as recycle materials and resources whenever possible and reduce the use of non-renewable resources. Organic production does not permit the use of: synthetic pesticides, synthetic fertilizers, sewage sludge, genetically modified organisms, ionizing radiation, no growth hormones for animals that produce meat, poultry, eggs, and dairy products

ORGANIC COMMUNITY: Many organic farms are small, independently run farms which aim to produce food for their local communities. The organic philosophy of sustainability encourages consumers to buy local organic produce whenever possible.

STANDARDS: Certification standards assure consumers that organic foods and products have been grown and handled in accordance with sustainable procedures without the use of synthetic pesticides or synthetic fertilizers.

WHAT ARE CANADA'S ORGANIC STANDARDS?

The Canadian Organic Standards are a detailed set of principles, guidelines, and permitted substances that are used in the organic certification process. The use of the term "organic" is governed only by federal legislation. The 2015 release of the Canadian Organic Standards includes Organic Principles and Management Standards, as well as Permitted Substances lists. Canada's Organic Standards are under continual review in order to ensure that they remain up-to-date and incorporate ongoing organic research and other advances.

WHAT DOES CERTIFIED ORGANIC MEAN?

Certification is the process used to ensure that organic products are in line with the Canadian Organic Standards. Canada's Organic Products Regulations legally require organic products to be certified according to the standards if they are traded across provincial or international borders or use the Canada Organic Logo. Organic certification is a system that helps ensure the integrity of organic products from field to table. It is a minimum benchmark that determines the basic requirements for organic food production systems. In Ontario and Canada, the certification of organic farms is carried out by third-party certification bodies which have been approved by the Canadian Food Inspection Agency.

It takes a producer up to three years to transition to the production and sale of certified organic products. During the transition phase, products can still be sold, but not as certified organic. If producers can prove that no prohibited substances have been used on the property in the last three years, it can take a minimum of 15 months to achieve certification.

For more information please visit:
<https://www.organiccouncil.ca/organics/>

Copies of Canadian the Organic Standards can be found at the Agriculture Branch and online at:
<https://www.organiccouncil.ca/organics/standards-regulations/>

ORGANIC FEED FOR SALE

Aurora Mountain Farm has 1 ton bulk bags of organic feed for sale. Paperwork that goes with the feed as well as the affidavit from the transport company assuring best practices in regard to maintaining the organic standing of the feed throughout the transport is available for those who may need it.

PRICES:

- Certified organic hog feed, it is \$1010/Metric Tonne (\$1.01/kilogram)
- Certified organic poultry layer ration is \$1085/MT (\$1.09/kg)
- Certified organic poultry broiler/finisher ration is 1148/MT (\$1.15/kg)

For more information please contact Tom and Simone Rudge at: auroramountain@yahoo.ca

Agriculture Demonstration Day

Date: Wednesday August 7, 2019.

Time: 10:00 a.m. to 3:30 p.m.

The Yukon Agriculture Branch's annual demonstration day is an opportunity to bring Yukon's agriculture community together during the growing season to highlight our agriculture sector and to share this season's challenges and wins. It also gives us a chance to share with producers and the public what is going on at the research farm.



There will be a barbeque over the lunch hour featuring Yukon-grown food, thanks to the hard work of our territory's food producers.

WHERE: Gunnar Nilsson and Mickey Lammers Research Forest, located on the North Klondike Highway, one kilometre north of the Takhini River bridge.

Join Yukon's producers and Agriculture Branch staff for a tour of our research fields, with discussions focused on commercial agriculture production, and a field visit to the Yukon Grain Farm, a commercial vegetable operation. For more information, visit www.agriculture.gov.yk.ca or contact the Yukon Agriculture Branch at 867-667-5838 or toll free in Yukon at 1-800-661-0408, ext. 5838.



FOR SALE HAY EQUIPMENT

Cause: Retirement

1 Tedder Rake - \$3,950.00
New Holland mod. 163 / 13' wide - Excellent condition
Ready to work!

1 Window Hay Rake - \$7,900.00
Krone SW38 / 13' wide - New! Used less than 10 hours

Please Contact: Fritz Lehnherr
Phone: (867) 393-3477

OUTDOOR FIREWEED COMMUNITY MARKET

Runs every Thursday
3:00 – 7:00 p.m.
Shipyards Park
Whitehorse
until September 12, 2019



InFARMation is a Government of Yukon newsletter published by the Department of Energy, Mines and Resources, Agriculture Branch. If you would like to add or remove your name from the newsletter mailing list, comment on an article, contribute a story, or post an advertisement, please feel free to contact us.

Agriculture Branch
Energy, Mines and Resources,
Box 2703, Whitehorse, YT, Y1A 2C6

Visit: Agriculture Branch, room 320, on the third floor of the Elijah Smith Building, 300 Main Street in Whitehorse.

Tel: (867) 667-5838 | Fax: (867) 393-6222,
toll-free outside of Whitehorse
1-800-661-0408 ext. 5838

Email: agriculture@gov.yk.ca

Online: www.agriculture.gov.yk.ca