# INFARMATION Yukon Agriculture Branch Quarterly Bulletin Summer 2011 Volume 24 Issue 2

# RESEARCH INTO BIOCHAR FOR YUKON SOILS

Innovation Centre (YCCIC).

Yukon farmer and firefighter Warren Zakus of Zakus Farms is the Yukon expert on biochar as a potential agriculture amendment. Zakus developed his expertise for biochar originally as a training tool to help himself and fellow firefighters better understand common fire behaviors such as flashover and backdraft. Zakus used a tobacco tin to demonstrate these fire behaviors, which resulted in making charcoal that he threw away. That is, until he learned that this charcoal by-product was also known as biochar and is used as a valuable soil amendment in some parts of the world. With this new found knowledge, Zakus started to experiment with the making of biochar and using it as a soil amendment. Initial results in his garden showed biochar may have some benefits to Yukon soils and Zakus thought it would be a valuable project to further test biochar's effects and uses with a more rigorous research approach. In 2011, Zakus Farms applied for and received funding from the Canadian Agricultural Adaptation Program (CAAP) administered by Yukon Agricultural Association, and the Yukon Cold Climate

The research project has two components. The University of Alaska Fairbanks will test biochar produced from different materials to identify differences and establish which biochar will be the most effective for Yukon soils. The second component is a field study to test biochar under various soil conditions and with different types of crops. The field study will be conducted at the Yukon Grain Farm in the Yukon River valley, Zakus Farms in the Takhini River valley, and at the Yukon Agriculture Branch Research Farm located at the confluence of the Takhini and Yukon Rivers. The preliminary field study will be conducted over a three year period.

University of Alaska Fairbanks will be carrying out the research components of this project. The Agriculture Branch's Matt Ball and YCCIC Director Stephen Mooney will be members of the Steering Committee.

YCCIC is following Zakus' biochar production method to see if it demonstrates the need for a biochar production unit, particularly one that could also produce heat and power. If a need is shown, YCCIC may support the future development of a prototype for such a unit.

For more information on the Biochar project contact Project Manager, Kathleen Yung by email at kathleenyung@ewb.ca, or by phone at (867) 333-0546.



Setting up small plot brome trials at Zakus farms to evaluate biochar as a soil ammendment for a brome hay stand

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#### MESSAGE FROM THE AGRICULTURE BRANCH

One of the challenges we face as Yukon agriculturalists is a very short, usually dry, spring. In a month, the seasons changed from snow covering the ground to forest fires threatening and dry field conditions. In that month, Yukon farmers and gardeners had to be ready to get the ground prepared and crops seeded, knowing that the window for frost free conditions narrows with each day missed. Timing is part phenology and part luck. Satisfaction comes from getting it right and the rewards come from a successful harvest.

The Agriculture Branch can't help with the weather but we do continue to work on new research that may improve northern growing conditions. Beginning this summer, we have partnered with the Yukon College, Yukon Cold Climate Innovation Centre, Zakus Farms, Yukon Grain Farm and the University of Alaska to examine the effects of biochar additions to our northern soils. The application of biochar should help with nutrient cycling and better retention of both nutrients and moisture in the soil, resulting in better crop growth. At the research farm the biochar is being compared against a number of other soil amendments including compost, organic nutrients and synthetic fertilizer to give us a good understanding of the crop yields that can be expected from the different treatments.

We continue to conduct trials on grains and forages at both the research farm and at McCabe Creek Farm in central Yukon. These trials are to investigate the potential to become more self-sufficient in animal feed components and ways to lower the cost of these inputs for livestock production. Central Yukon is showing great promise for maturity of field peas and wheat under irrigation and fertilizer management. By the end of this year we will have three years of data and can begin to analyse trends. You are invited to the research farm for the Agriculture Branch research and demonstration day on July 27th to discuss the trials with staff and see the different treatment results.

On a final note, I want to remind anyone, at any level of production, producing an agriculture product with intent for sale that this is a census year and that it is really important that you fill out your agriculture census form. This information helps us understand industry development, trends in different sectors and very importantly, provides solid rationale for funding programs that help with industry expansion.

Let's hope that the long term forecast is right this year and that we get above average temperatures to help with the challenges we faced in the spring.

Tony Hill Director, Agriculture Branch

## HAINES JUNCTION PLANNED AGRICULTURE LAND SALE **DELAYED**, DUE TO WATER

The planned land sale of five Phase II lots in the Haines Junction Agriculture Subdivision has been delayed because the access road was too wet for travel this spring. Agriculture Branch will be monitoring the situation and now that the water is decreasing, a new date will be set for the land sale.

The lots, ranging in size from 9.8 ha to 29.1ha (24 acres to 72 acres), will be sold using an evaluative process that requires prospective purchasers to put together a detailed farm development plan laying out all the steps to create an economically viable farm operation. All the projects proposed for a specific lot will be compared and evaluated by the Agriculture Branch with the offer of sale made to the applicant who shows the clearest understanding of developing a farm business in the region. This planned land disposition process increases the emphasis on developing economically viable agriculture in Yukon; an important objective of the 2006 Yukon Agriculture Policy.

The land sale will be scheduled to allow prospective applicants ample opportunity to become familiar with the new application process and to inspect the lots to familiarize themselves with the topography and soils.

For updates or more information including a map go to www.agriculture.gov.yk.ca and follow the links to the Haines Junction Agriculture Land Subdivision or contact David Murray at david.murray@gov.yk.ca or phone (867) 667-3699.

#### TELL YOUR STORY

During the first two weeks in May, every farm in Canada received a Census of Agriculture questionnaire. This is your opportunity to create an up-to-date picture of agriculture in Canada by completing and returning this census form.

The farmer of the 21st century works in an industry that is becoming more and more complex. Farmers wear many hats to operate a successful business: accountant, mechanic, carpenter, heavy equipment operator, and environmental steward. In addition to farming, an operator often has to work off the farm. In short, farmers are busy people working in a dynamic and challenging industry.

The profile of Canada's farmers is different from that of the general working population. Census information from 2006 tells us that farm operators have a higher median age than the comparable labour force population of selfemployed workers — 52 and 44 respectively. Moreover, the group of farmers under 35 years old poised to move the industry into the future is a smaller one, representing only 9% of all farmers. Nearly 20% of the self-employed workers in the general labour force were under 35. Among all workers in the general labour force, 40% of all workers were less than 35 years old.

Agriculture is continually changing. The Census of Agriculture provides information on the many sides of this vital industry — from crop area to manure management to access to high speed internet. The data "snapshot" captured by the Census of Agriculture every five years highlights trends and new developments in agriculture.

The farm industry, as a whole, benefits from census data in many ways. For example, agricultural producer groups are guided by data from the census when:

- informing their membership about industry trends and developments;
- putting operators' viewpoints before legislators and the Canadian public; and,
- defending their interests in international trade negotiations.

Governments use census data to make decisions about crop insurance, agricultural credit policies, transportation, market services and international trade. Census information also helps other businesses market their products and services to farm operators and is a valuable tool when making production and investment decisions.

By law, Statistics Canada is required to protect the information provided on Census of Agriculture forms — privacy is a fundamental component of the census.

Tell your story by counting yourself in as part of Canada's farm community in this Census.

Fill out your questionnaire on paper and mail it back in the prepaid envelope or take advantage of the internet application which automatically adds totals and skips you through the parts of the questionnaire that you do not apply to your operation.

For more information on the 2011 Census of Agriculture visit the website at www.statcan.gc.ca/ca-ra2011 or contact Erik Dorff by telephone at (613) 951-2818 or by e-mail at Erik.Dorff@statcan.gc.ca.

# AGRICULTURE PHOTO CONTEST



It has been a few years since the Agriculture Branch has held a photo contest and with farming providing a great subject for photos, it is well overdue. This year, we are looking for your best agriculture photos in three categories: crops and gardens, livestock, and farmers in action. We are looking for photos that scream Yukon agriculture, whether it be through telling a story, showcasing the breathtaking scenery, or capturing a unique moment in farming

We will collect photos over the summer months and do a last call out for photos in the fall. The top photos will be posted on the Agriculture Branch website in October for you to be the judge. The winners will be announced at the annual North of 60° Agriculture Conference and Banquet. The prize for each category will be bragging rights and two free tickets to the banquet (one of the best Yukongrown dinners of the year).

Submit your photos to agriculture@gov.yk.ca or provide a copy to the Agriculture Branch. See contact information on the last page for mailing or drop off details.

Happy picture taking.

## YUKON PRODUCER PROFILE Highlighting producers and their agri-businesses

This column is an opportunity to introduce readers to some of the interesting farm operations in Yukon. This segment will feature a variety of Yukon's amazing producers, farm products and how farmers are overcoming some of our climate, production and market obstacles.

## RIVENDELL FARM

Rivendell Farm is currently one of the oldest running producers in Yukon, and one of the first in the Takhini River valley. Since the farm started producing over 25 years ago they have produced everything from bedding pants, to market vegetables and game farming of elk. And with that experience, owners, Rolland and Mary Girouard know what varieties will grow and what won't.

Apart from experience growing, they also have industry experience in marketing and selling. Rolland and Mary's first market experience was at the Six Carrot Farmer's Market in 1987, where they got their start selling bedding plants and vegetables. Then in '88 Rivendell began selling wholesale produce to Kelly, Douglas and Company. They were able to maintain this relationship by being consistent and providing the buyer what they wanted. Rolland's other industry experience includes membership in the Yukon Agricultural Association and a term as its president from 1989 to 1991.

Nowadays, Rivendell's diverse business model keeps them busy from March 15 until the end of October. Their season is so long because they have expanded their passion for growing by pairing up early season bedding plants



with market garden vegetables. Starting in March, the bedding plants get Rolland and Mary into the greenhouse. Then in the spring, when bedding plant sales start to dwindle, they switch gears and focus on their vegetables.

For Rivendell, this is a very natural set-up. When the greenhouses heat up in June, farming moves down the hill to the lower bench. It's here, along the Takhini River, that their market vegetable operation lives. You can tell by the layout of the garden that a lot of thought has gone into the setup. The area is designed for easy management with an automated irrigation system, room for crop rotation and expansion, and easy access to plots for weeding.

Recently, Rivendell has been moving away from taking the produce to market. While they sell to the Fruit Stand and Porter Creek Indoor Garden Centre, their newest initiative is their Private Pick Your Own Produce program. This members-only program saves Rolland and Mary the trip to market by having their customers come to them. The entry cost is \$350. Of that, \$150 is a membership fee that goes to covering the actual cost

of gardening (tools, infrastructure, etc..), while the remaining \$200 is an upfront purchase of produce. Members use the \$200 to make purchases and when it is used up, they start paying for produce from the farm again.

As much as the garden is set up for production, Mary and Rolland are looking at ways to have their garden market itself, by setting up their garden to invite people to come down, stay and enjoy their experience. They've installed attractions like a raspberry bush labyrinth, a picnic area, and Rolland has even ordered a giant chess set he hopes to arrive soon.

If you happen to be an astute fan of fantasy novels you may very well recognise the name Rivendell from J.R.R. Tolkien's legendary trilogy. "I was a young man," says Rolland with a grin, "and very much into Lord of the Rings." Meanwhile, across from Rolland and Mary's kitchen window is a steep cliff that forms the side of a deep valley, quite literally, a riven dell.

Over the years, Rivendell has had many different experiences as a farm. Reflecting back on it, Mary simply says "we've tried everything;" Rolland adding "wild boar was pretty cool." At the height of Rivendell's time with livestock they had over 99 animals, over half of which were elk. Unfortunately, due to Rolland's allergies to the elk, the farm was forced to exit the industry.

Even after 26 years in operation, it seems Rivendell is still refining and experimenting with their business model. However, the farm has always managed to be their livelihood

Sometimes, new business opportunities found them, as in the case of their bedding plants. According to Mary, this part of the business started itself up when "neighbours came and raided our greenhouse and left money."

# "This has always been a business, it was never a hobby farm," says Mary.

Rivendell Farm is one of the modern pioneer stories of Yukon. With hard work and patience, Rivendell has kept itself going and even taught its owners a thing or two along the way. "If you're thinking of starting a farm up here, have a good plan and expect it to be a lot of work," is one piece of sage advice from Rolland and Mary.

Rivendell Farm is located off the Hot Springs Road north of Whitehorse. They can be contacted at (867) 633-6178 or through e-mail at girouard@northwestel.net

We are currently looking for our next producer to profile. If you want to suggest a Yukon farmer or even volunteer to be featured in an upcoming issue, contact the Agriculture Branch through the information on the last page.



AGRICULTURE DEMONSTRATION DAY

Date: Wednesday July 27, 2011.

Time: 10 a.m. to 2 p.m.

The Agriculture Branch is hosting its annual demonstration day Wednesday, July 27<sup>th</sup>. The event gives the branch a chance to bring the agriculture community together during the summer and discuss the research being conducted at the site and share information with each other. There will also be a Yukon themed barbeque over the lunch hour.

With the addition of the centre pivot irrigation system in 2010, there has been a few changes to the research farm. The raspberry plot is slowly getting moved to make room for more field crop trials. Also, the whole first plot has been systematically subdivided to allow for multiple trials of market garden vegetables which include trials on biochar, compost and additional soil amendment. As well, a new small garden seeder will be on demonstration. This new seeder has allowed for improved seeding and plot set up.

Trials being conducted at the research farm for 2011 include:

- field pea, wheat and oat variety assessment;
- dryland forage demonstration;
- soil amendment evaluation for market garden vegetables-this includes the use of city compost and or biochar; and,
- · raspberry orchard yield evaluation

The research farm is located in the Gunner Nilsson and Mickey Lammers Research Forest just north of Whitehorse near the corner of the North Klondike Highway and the Hotsprings Road; there will be a sign out on the North Klondike Hwy. to point you in the right direction.

Please come join us and take a tour of the research farm. The barbequing will start at 11:30; bring your lawn chairs and relax awhile, or bring your hiking boots and stroll some of the research forest interpretive trials.

Hope to see you there, The Agriculture Branch.

# THE DIRT ON WORMS! Written by Treharne Drury

Topsoil is built up naturally in a number of ways depending on a variety of factors. In northern latitudes where there is limited mesofauna (the critters in the ground grinding up and eating organic matter), organic material is broken down primarily through soil bacteria and fungi. In temperate latitudes, soil build up is enhanced by the presence of earthworms (I'd give you the scientific name here but there are about 600 different species). The presence of these worms in the soil can drastically increase the production of topsoil. By some estimates their presence can speed up the natural production of 1 inch of topsoil from 1,000 years to just five.

In the gardening world the earthworm is a superstar. As they plough through the ground they consume large (relatively of course) amounts of soil and organic matter. The organic component of ingested material is broken down in the

digestive tract and mixed with the inorganic ingested component. This mixture is then excreted by the earthworm in what are called casts. Casts are akin to fertilizer in that they are small nuggets of concentrated nutrients in an easily assimilated form.

The earthworm's movement through the vertical profile of the soil also serves to mix the upper layers of the ground into a more plant friendly matrix. The burrows left behind by this movement act to aerate as well as soften the soil. This makes root growth for plants easier. Another benefit of this vertical movement of organic matter is adding nutrient stability within the soil. As earthworms move organic matter and nutrients lower in the soil profile the nutrients are less susceptible to leaching out of the system as surface runoff.

So why are we talking about earthworms in Yukon? As most of you may know, Yukon is not overrun with these tubiform creatures. Some gardeners have brought in their own "breed stock" that they use to improve garden and greenhouse soils. These worms are brought up from southern regions, incubated indoors for the winter, and then, come spring, released into the wilds of the backyard garden . In the fall, gardeners round up a few choice specimens for overwintering to keep the cycle going. You don't need many for this task. Due to earthworm biology, about 15-20 worms should do the trick. These guys are prolific reproducers and your worm farm (you will need to feed them) should double every month or so. The 101 on life cycle and reproduction: earthworms are neither male nor female (or maybe they are both, your call) either way when they meet they are able to fertilize each other. They then go their separate ways and begin producing eggs. They release between 2 and 4 eggs a day which take 30-60 days to hatch. The worms emerge as tiny versions of their adult selves and become sexually mature about a year later.

Traditional southern earthworms have a tough time overwintering in our frozen soils which is why most gardeners bring some indoors before freeze-up. Earthworms can overwinter in both the worm stage and the egg stage but the frozen dry soils of the Yukon winter can kill them off. So really what we need is an earthworm species that has evolved in the North and can resist freezing temperatures.

What may be exciting news to some, THERE HAVE BEEN SIGHTINGS OF NATIVE EARTHWORMS IN YUKON!

However, research into the Yukon earthworm has not yet been conducted and until more is known about the soil building qualities of this critter, gardeners will still need to cultivate their own supply.

## **BUY YUKON GROWN**

#### Because.....

- "I want to teach my kids that they can choose where their food comes from, and that reading the labels, and buying local is important."
- "Like many things, I make this choice based on a variety of factors.
   I believe that it tastes better. That it had a chance to grow and ripen naturally. It was not grown under artificial (commercial) conditions.
   There are less or no transportation chemicals/processes added to local grown foods. These are but a few reasons."
- "Because I want to support a strong local economy, I want to support more sustainable practices, because I want to maintain some control over the food system and really – I want to eat fresh, tasty food!!!"

Share your reason to buy Yukon Grown with us by emailing agriculture@gov.yk.ca

This takes a little time and energy but should pay dividends in the long run. According to one local gardener, cultivating earthworms went a little something like this: the overwintering stage requires, first and foremost, an appropriate receptacle. Large plastic tubs do the trick, and they should be kept in a dark space that doesn't freeze during the winter. Your average garage should do just fine. Second that receptacle should be filled with an appropriate matrix of materials that foster the growth and reproduction of your worm supply. This can be comprised of peat, sand and soil. Thirdly you need to provide the worms with food, the great thing here is that they will turn all your unwanted food and table scraps (you might want to limit it to veggies and fruit) into compost for your garden. Depending on the size of your worm bins and the amount you are feeding you may find that you need to change out the newly minted compost once or twice throughout the winter.

If starting your own worm ranch is something that you think you may like to try your hand at there are a number of sources for starting stock. There are internet suppliers where you can order everything you need to start, you can get a handful from a friend, or on your next trip south you can dig up a bucket full for carry-on (you may want to check the legality of this first)!

For some additional resources on worms visit the EMR library, room 320 in the Elijah Smith Building, 300 Main St. Whitehorse, or contact the library at (867) 667-3111 or emrlibrary@gov.yk.ca.

Happy worm ranching!



FIREWEED COMMUNITY MARKET

The Outdoor Market is now in full swing, and there is a great line up of demonstrations and workshops planned throughout the summer:

- June 30<sup>th</sup>, Homemade Bio Diesel. Demonstration of homemade uses for bio diesel technology and how it can help alleviate fossil fuel needs while utilizing a waste product. Workshop leader: Dan Halen
- July 7<sup>th</sup>, Local Fibre Art. Display of various local fibres alpaca, cashmere, sheep, quiviut, bear, bison, dog, etc. and a chance to try wet felting with spinning demonstrations. Workshop leader: Carolyn Campbell, local grower and artist
- July 14<sup>th</sup>, Homemade Smoked Salmon. Demonstration of smokers and what you can cook inside them to preserve you wild or farmed proteins.
- July 21<sup>st</sup>, Berry Mania. Cooking demonstrations using only locally grown and collected foods found for sale at the market. Recipes will be shared to encourage use of local in season produce. Workshop leader: Miche Genest, local chef and author.
- July 28<sup>th</sup>, Urban Chickens. How to keep and care for backyard chickens, what breeds are ideal for the beginner and how to keep happy, healthy chickens for your family. Workshop leader: Jeff Diment, student and 4H club member
- Aug 11<sup>th</sup>, Permaculture Principles. Introduction to backyard permaculture and how it can make your garden more productive and easier to maintain.
- Aug 18<sup>th</sup>, Wild Mushrooms. How to forage for wild mushrooms and how to prepare your finds.
- Aug 25<sup>th</sup>, Soil Potions. How to make compost teas and brews to feed your garden. Workshop leader: Heidi Marion, Foodscaper
- Sept 1<sup>st</sup>, Home Sprouting. How to grow your own living food all year round. Build a sprouting tray to take home and learn how to take care of all kinds of sprouts. Workshop leader: Philippe Mouchet, local grower
- **Sept 8**th, **Bedding Down for Winter.** How to prepare your garden beds for the winter. Learn how to feed and prepare your soils so they ready for spring growth, in addition learn how to start and maintain an indoor composter. Workshop leader: Heidi Marion, Foodscaper

The market runs Thursdays evenings from 3-8 pm at Shipyards Park. The last day of the market will be September 15 culminating with the **Celebration of the Harvest** by Yukon Educational Theatre.

Visit fireweedmarket.yukonfood.com for more information.

#### ANNOUNCEMENTS

## THE BOREAL HERBAL

Bev Gray's new book, *The Boreal Herbal, Wild Food and Medicine Plants of the North* is now out.

The Yukon Agricultural Association and Agriculture Canada supported this book through the Advancing Canadian Agriculture and Agri-Food Council (now the Canadian Agricultural Adaptation Program).

We wish Bev the best for its success.

# YUKON AGRICULTURE ASSOCIATION (YAA) HAS A NEW BOARD

A new board was elected for YAA at their annual general meeting held in late April. The new Executive positions include: Warren Zakus; President, Cain Vangel; Vice President, and Mike Blumenschein; Secretary-Treasurer. The director's positions include: Tiana Zakus, Alan Stannard, Dallas Schaber, Ralph Mease, Claudia Heath, Wayne Grove, Andre Fortin, Vanessa Falle, Ray Falle, Barbara Drury and Dave Andrew.

YAA fosters and promotes Yukon's agriculture industry.

#### RENTAL EQUIPMENT AND CUSTOM WORK

YAA has a batwing mower, no till seed drill, aerator, manure spreader and plough available for rent. For more information contact the YAA.

YAA is also compiling names of people available for agriculture contract field work or custom work. If you need someone to do some custom work on your farm or would like to include your name in the database contact the YAA office.

YAA can be contacted by: phone at (867) 668-6864 or e-mail admin@yukonag.ca

#### PLANT A ROW, GROW A ROW

Plant a Row, Grow a Row invites all gardeners to grow an extra row of vegetables and donate the harvest to the Whitehorse Food Bank. Your garden can help feed people in need! It may be too late to plant the row, but it is not too late to grow the row and donate the harvest to the Food Bank.

For more information contact the Food Bank, phone (867) 393-2265, e-mail: office@whitehorsefoodbank.ca or visit their website at www.whitehorsefoodbank.ca

# PREMISE IDENTIFICATION FOR YUKON CATTLE, HOG, SHEEP AND POULTRY PRODUCERS

The Agriculture Branch is engaging producers to assign a unique identifier to their location as part of the National Agriculture and Food Traceability System. Information collected as part of premise identification will be kept strictly confidential and will only be shared with those authorized to assist in the event of an emergency.

The Agriculture Branch is only registering locations where cattle, hogs, sheep and chickens are kept. To register or for more information go to www.agriculture.gov.yk.ca or contact Kevin Bowers at (867) 667-3043.

### YUKON MADE STORE

Open 11 am to 5 pm Tuesday to Saturday, Frank Slim Building, Shipyards Park. More information is available through email at yukonmadestore@yukonfood.com

#### InFARMation is:

A Yukon government 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 or contribute a story, please feel free to contact us.

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