

# INFARMATION

Yukon Agriculture Branch Quarterly Bulletin

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## MESSAGE FROM THE AGRICULTURE BRANCH

With the days getting longer and the sun shining brightly, it is time to get ready for spring. We are in good shape as we enter into the 2006 season.

We have to look beyond the obvious challenges in Yukon agriculture, from weather, to land, to the high cost of inputs and materials, and see that we have such a great place to grow crops: a community that supports locally grown, cohesive farmer associations, and a strong farm community that shares knowledge and is always seeking new, innovative ideas. You all should be very proud of the industry that you've built and, with new programming and infrastructure, be ready to realize some new opportunities.

Programs in the Agricultural Policy Framework are up and running, providing an avenue for producers to apply for funding in a variety of programs. Program information packages are available at the Agriculture Branch counter or contact us and we'll mail you a copy.

The recent federal election brought about some changes for the agriculture sector. Chuck Strahl was appointed Minister of Agriculture and Agri-Food and Minister for the Canadian Wheat Board. Minister Strahl was first elected to parliament in 1993. We welcome the new federal agriculture minister and look forward to developing a strong relationship with his office.

Best of luck in the upcoming growing season. The winter has been warm overall with little snow cover and some freeze / thaw cycles. This may cause concern for some but as we look ahead these abnormal seasons will continue and we have to grow accordingly.

David Murray,  
A/Director  
Agriculture Branch



Summer day at the LaPrairie Bison Ranch

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## NORTHERN AGRICULTURE

## INDUSTRY APPOINTS NEW MEMBERS TO THE YUKON AGRICULTURE INDUSTRY ADVISORY COMMITTEE

A new advisory committee has been formed by the Yukon government to seek agriculture industry input on policy, programs and industry development issues. Nominations were sought from the Yukon Agricultural Association, the Yukon Game Growers Association, Growers of Organic Food Yukon and a member at large from the industry not affiliated with any of the territorial farm organizations.

Minister of Energy, Mines & Resources Archie Lang made the appointments for two years beginning on April 1, 2006. Wayne Grove and Dave Andrew will represent the Yukon Agriculture Association, Bill Drury represents the Game Growers, Sheila Alexandrovich will represent the Growers of Organic Food and Art Hutchison will be the industry member at large. These appointments carry the responsibility to provide representative input to government and report back to their respective organizations on the issues the committee works on. The first meeting of the committee is scheduled for April 7, 2006.

Anyone wanting more information or interested in providing comments is encouraged to contact one of the representatives named above or give us a call at the Agriculture Branch, phone: (867) 667-5838.

## THE RED MEAT MOBILE ABATTOIR IS COMING!

Earlier this past year, the Yukon government announced the proposed purchase of a multi-location red meat abattoir (mobile abattoir). After a final round of discussion with local producers to confirm specifications for the abattoir, the unit has been ordered. It is expected in the Territory for August of this year.

The next step is an open house to explain the design and operation of the unit and how producers will be able to access the mobile facility. On March 29 at the Westmark Whitehorse from 7:00 to 10:00pm there will be a presentation by Agriculture Branch staff. Representatives from the Canadian Food Inspection Agency will be on hand to answer questions of livestock identification and meat processing.



Cattle grazing in the Haines Junction area

## SOAP BUBBLE GREENHOUSES

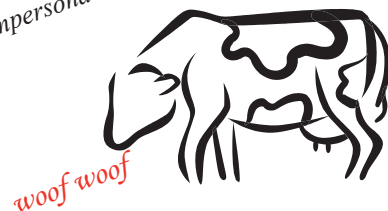
Soap bubble-insulated greenhouses are an innovative technology that may provide an environmentally friendly solution for lengthening our short greenhouse-growing season here in the Yukon. The soap bubble-insulated technology works by employing a foam generator to fill a cavity in a double walled greenhouse with soap bubbles, which insulate the greenhouse during the night. The soap bubble insulation can then be removed during the day to gather passive solar heat and to allow light in for plant growth.

Andy Lera from Whitehorse recently met with Ross and Kat Elliot in Perth, Ontario and toured their innovative soap bubble-insulated greenhouse that they operate year-round.

Andy has prepared a detailed report on this technology and how it can reduce greenhouse heating costs. The report is available at <http://users.yknet.yk.ca/goofy> or contact Andy or Ruth at (867) 668-5871

*A project initiated by GOOFY and funded by AAFC and YAA*

*With the new abattoir, be wary of your livestock trying to impersonate your pets!*



## NORTHERN AGRICULTURE

### ANNUAL WEATHER REVIEW 2005

This was another unusual year for the Yukon with above normal temperatures and precipitation.

Whitehorse saw 10 months with above normal temperatures; only January and July showed temperatures cooler than normal. January 13 saw the coldest temperature of the year with the mercury plunging to -46.6°C. The longest stretch of below -40°C temperatures this past year was just three days. The warmest day wasn't recorded until August 11 when the temperature reached 29.3°C. The mean temperature of 1.2°C was 1.9 degrees above normal for the year. 2005 turns out to be tied for the third warmest year on record. The years of 2002, 2004 and 2005 all ranked within the 10 warmest years on record.

January, April and June saw nearly triple the normal amounts of precipitation, with a total of seven months of above normal precipitation for the year. The final tally of precipitation saw the Whitehorse airport receiving a total of 330.1 mm over the year. The year ended with 26% more precipitation than normal and ranking 9th in 62 years of records.

**January** – Heavy snowfalls in the southeast. The second heaviest snowfall on record was recorded.

**February** – Very warm in northern Yukon but little snow in most areas.

**March** – Very warm and very dry. The Dempster recorded 17 days of blizzard warnings.

**April** – Continuing very warm with near record snowfall amounts in the south but near record amounts in April are less than 20 cm.

**May** – Record monthly temperatures, slightly above normal precipitation.

**June** – Nearly unprecedented amounts of rain in the south with near normal amounts in the central and northern Yukon. Temperatures slightly above normal. A funnel cloud was spotted in central Yukon, a very unusual occurrence.

**July** – Cooler than normal and near normal rainfall.

**August** – Back to above normal temperatures and near normal rainfall. The summer was slightly warmer than average in the south and slightly cooler than normal in the central areas with above normal rainfall.

**September** – Temperatures continuing warm with above normal rainfall in most areas of the Territory.

**October** – Below normal precipitation, except in northern Yukon, which recorded above normal amounts.

**November** – Record early November snowfalls gave way to late November rain showers, which melted most of the snow.

**December** – Very warm and generally dry.

*Bill Miller*

*Client Services*

*Meteorological Services of Canada*

## SCIENCE & RESEARCH

### GOOFY LEGUME PROJECT

The 2005 growing season was an exciting one for Growers of Organic Food Yukon (GoOFY). The organization successfully completed the first season of what it hopes will be a five year legume study, funded by Advancing Canadian Agriculture and Agri-Food.

Five farms participated in the project, which aims to identify whether a lack of necessary trace elements in the soil is responsible for the frequently poor performance of legume crops in the Yukon. Canadian farmers depend widely on legumes, such as clovers, as “plow-down” or “green manure” crops, to improve the nitrogen content of agricultural soils. Nitrogen produced by nodules on the plant roots becomes available in the soil when the plant is killed by tilling under. Poor nodulation and poor legume survival in the north has long been attributed to our cool soil temperatures, but some science suggests another cause: that the symbiotic relationship between leguminous plant roots and bacteria in the soil is inhibited when trace elements are lacking or severely imbalanced. GoOFY's legume study aims to identify the parameters of successful legume growth in experimental plots containing six legumes: alfalfa, yellow sweet clover, alsike clover, red clover, white clover, and field peas.

In this first season, field technician Karen Digby established experimental plots on the five participating farms, each of which has land which is either certified organic or that qualifies for certification. Soil temperatures, precipitation, and plant growth were monitored throughout the season, and soil samples taken in both spring and fall were analyzed by Kinsey Agricultural Services, a world leader in soil ecosystem balancing. In future seasons, organic amendments recommended by Kinsey will be added to some areas of each plot, while control areas will receive no added inputs.

*Karen Digby*

## SCIENCE &amp; RESEARCH

RESEARCH AND DEMONSTRATION  
FIELD SEASON 2005 HIGHLIGHTS

Last summer the Yukon Agriculture Branch increased the research area at the Gunnar Nilsson and Mickey Lammers research forest and teamed up with producers for new on-farm trials.

The focus of research at the Gunnar Nilsson and Mickey Lammers research forest was to continue work on the berry input management trial initiated in 2002; to implement an alfalfa study; and to establish a new forage demonstration trial.

New co-operator trials were initiated this year in conjunction with the alfalfa study looking at alfalfa establishment within existing forage stands.

There was an increase in the number of collection sites for agroclimatic data. Five climate stations were setup in the southern and central Yukon, collecting air temperatures to help understand microclimate variations and to calculate the agroclimatic ratings.

Air temperatures at the research forest were near normal resulting in a class 5 rating, but we had significantly more rainfall over the growing season. During the early morning on August 1, the site had two hours of killing frost  $-2.7^{\circ}\text{C}$ , and there was concern that this would kill the blossoms of the berries resulting in little fruit being developed. Fortunately, little damage occurred and the next killing frost did not hit until September 9.

Results from the berry input management trial are mixed this year. The raspberry orchard was established in 2002 and it took until 2005 before the orchard was mature enough to produce a meaningful

harvest. Work on the orchard began as soon as the snow left in 2005, with thinning and pruning taking place in early May and floricanes being tied to trellis wires on the outside of the rows. A light application of Princep-9T herbicide was applied to the rows prior to new shoot emergence, to reduce weed growth within the rows where cultivation would not be possible after the leaves came out.

Raspberry harvest began on August 17, starting with the lower branches of the Alaskan variety Kiska. The harvest peaked for both Kiska and the Canadian variety Souris on August 29, and by September 6 Kiska was almost finished and Souris was beginning to slow down in production. The harvest was over on September 9 due to a killing frost that destroyed any remaining berries.

Strawberry harvest started on July 12 and continued until August 22, with peak harvest weights being reached on July 26. The harvest was light, due to the large number of replacement plants. Culled fruit in the early part of the season was largely due to damage caused by *Otiorhynchus ovatus* (commonly referred to as the Alaskan snout beetle), birds (primarily robins and grey jays) and later in the season by a resident red fox that developed a taste for ripe strawberries. There was also a high number of misshapen, smaller berries likely due to flower bud damage on winter stressed plants and thrip damage on the blossoms during fruit set.

A new alfalfa study initiated in 2005 involved a variety of experimental designs setup to determine the nitrogen fixation ability of alfalfa in Yukon, and to determine if alfalfa

added to a grass stand can provide adequate nitrogen to replace the chemical fertilizer nitrogen added to the stand.

Five trials in three locations were established for the 2005 season. Two co-operator sites on forage production farms and the government research site - all located near Whitehorse were used.

The co-operator sites had a much longer growing season when compared to the research site. At the research site the agroclimatic rating for 2005 was Class 5 which is the most common agroclimatic rating at this site. Both co-operator sites have identical lengths of growing season with only slight differences in heat units, resulting in a class 3 rating.

Alfalfa growth and nodulation were successful on all but one of the locations. All data has been collected and a portion has been analyzed.

Results to date, with limited statistical analysis, show that the combination of the low fertilizer rate with the Tag Team (Philom Bios) inoculant provides the highest yield of alfalfa. There is an inverse relationship between the alfalfa yield and the grass yield. Regardless of treatment, where there is lower grass yield the alfalfa has better establishment and yield. Also, the addition of 25 kg/ha of 46-0-0 provided a 79% higher yield in brome grass. The brome grass nitrogen use efficiency is around 50%. Overall, in the establishment year of alfalfa, the nitrogen fixing ability is not adequate enough to replace high nitrogen fertilization, but the results are encouraging as we head into year two.

## OUTSTANDING IN YOUR FIELD

### BIODIESEL

Did you know that the internal combustion engine designed, built, and demonstrated by Rudolf Diesel at the 1900 Paris World's Fair ran on peanut oil? This was a dream product – an efficient internal combustion engine, powered by crude oil or even vegetable oil. He believed that an engine that could be fed vegetable oils would help considerably in the development of agriculture in countries which use it.

One of the most common biofuels is biodiesel. Biodiesel refers to products derived from any vegetable oil, yellow grease, or animal fat that can fuel a diesel engine. Typical sources are canola, soybean or palm oil.

Biodiesel is usually sold as a fuel additive in 1% (B1) or 20% blends (B20) for use with petroleum diesel in compression ignition (diesel) engines. Other blends can be used depending on the cost of the fuel and the desired benefits. Neat biodiesel (B100) is 100% pure and is considered superior to petroleum diesel, based on environmental standards. Australian research has shown that neat biodiesel produces 80% less CO<sub>2</sub>, 90% less unburned hydrocarbons, and 90% fewer cancer-causing pollutants. Additionally, neat biodiesel spills are less dangerous, as biodiesel is 10 times less toxic than table salt and is biodegradable. Since it is made from feedstocks that take CO<sub>2</sub> out of the atmosphere, biodiesel adds no net CO<sub>2</sub> to the atmosphere – an important consideration in reducing greenhouse gas emissions.

Biodiesel also displays advantages for engine lubrication. Various tests indicate there is 45% less engine wear when using a biodiesel blend. Barry Hertz at the University of Saskatchewan has studied

biodiesel since the early 1990s. His work demonstrates that the use of biodiesel contributes to a tenfold reduction in engine wear. Even the use of biodiesel as an additive at 0.1% has been shown to increase diesel lubricity, reducing engine wear. The lubricating properties in petroleum diesel come largely from sulphur. Sulphur is however, a major source of air pollution and allowable limits in diesel have been reduced from 3,000 to 500 ppm.

The Energy Solutions Center, in collaboration with the Yukon Conservation Society, is examining the availability of used vegetable oil from deep fryers that can be converted to fuel. To supplement the supply of used deep fryer grease available in the Yukon for biodiesel there is also the possibility of growing oilseeds. Off-grade canola can be used to produce biodiesel, opening up a market for lower grade crops. Biodiesel's potential has already been realized in the US and in southern Canada. Some European countries have been using biodiesel for 20 years.

The Agriculture Branch, in co-operation with the Energy Solutions Center and Yukon producers, is developing a 4 year project to determine the viability of oilseeds for biodiesel in Yukon conditions. This is an exciting project ... stay tuned.

*Adapted from Saskatchewan Agriculture 2002*

### GARDENING TEACHES CHILDREN VALUABLE LESSONS & SKILLS

Gardening is about caring and nurturing. There are many lessons we learn from gardening. The responsibility of watering, chasing bugs, weeding and pruning is part of it, along with the risks and disappointments nature offers. If you have space in your garden to include your children or grandchildren, here are some ideas:

- Create the boundaries of the garden to help the child recognize it is their special space and to give them a sense of ownership. Use a fence, flowers, bricks or stones to define the edges.
- Children will be happier and feel more successful if they have tools suited to their size. Weight is as important as height, so cutting off the handle of a hoe or rake will still leave it too heavy.
- Start by looking through seed catalogues together, selecting fast and easy-to-grow plants. For younger children, choose plants with large seeds, such as beans, pumpkins, gourds or peas.
- Growing vegetables gives a child something they can eat or serve to adults, giving them pride and an increased desire for eating vegetables.
- Make a garden journal. Clip pictures from seed catalogues or attach the seed packets to the journal page. Chart when you sow the seeds, when they germinate and when you harvest. Record special events such as sighting a butterfly.
- Add art. Paint rocks to decorate the garden with faces, animals, flowers, bugs or bright patterns.
- Build a scarecrow and set it in the garden.

## TIPS &amp; TRICKS

## FROST PROTECTION

Although June 1 is generally considered the date without risk of frost, there is concern throughout the growing season that the temperature will drop below 0°C. Depending on the stage of plant growth this can cause severe damage. The aim of frost protection is to maintain the temperature of a soil-plant-air system above some critical temperature. There are three principle ways to protect the plants: 1) slow the energy loss from the system, 2) redistribute existing energy within the system, or 3) add new energy by artificial means.

Here are some important principles for protecting your crop against frost:

Choose a site where cold air does not accumulate. Low-lying areas such as basins or terrain depressions, and areas behind obstructions to downhill flow such as walls or hedges can become much cooler than surrounding areas.

Place some type of screen over the system to reduce energy loss. Create artificial clouds of mist or fog by spraying water, or by building smoky fires. These clouds will absorb some of the radiation and re-radiate it back to the ground.

Apply mulch to the soil surface to control soil heat loss. This is especially effective if the mulch is applied at the end of the day when the soil has absorbed a significant amount of energy.

Add warm water by irrigating - this maximizes the transmission of heat through the soil.

Spray the plants continuously throughout the cold spell. When water freezes it releases latent heat which elevates the temperature of the system.

Use large motorized fans to mix the air, usually a frost will occur with an inversion and mixing the air can warm the lower layers.

Heat the system artificially by using fuel-burning heaters or electrical heating cables.

## RASPBERRY PRUNING

Proper pruning of raspberries is essential. Pruning produces higher yields, helps control diseases, and facilitates harvesting and other maintenance chores. Pruning procedures are based on the growth and fruiting characteristics of the plants.



Ripe raspberries at the Takhini Research Forest

The growth and fruiting characteristics of the raspberry plant are rather unique. The plant's roots and crown are perennial, while the stems or canes are biennial. Each spring red raspberries produce new canes from buds located at the base of the previous year's growth. Red raspberries also produce new shoots from buds located on their roots. The individual canes live two years and then die.

The shoots of summer-bearing (floricane) red raspberries are strictly vegetative during their first growing season. The following year, these same canes flower, produce fruit, and then die.

The growth and fruiting characteristics of fall-bearing (primocane) red raspberries are slightly different. Fall-bearing varieties naturally produce two crops. The first crop is produced in early fall (weather permitting) at the tip of the current season's growth. The following year, a summer crop is produced on the lower portions of these same canes. After the second crop, the canes die.

A number of yellow raspberry varieties are also available. With the exception of fruit color, the growth and fruiting characteristics of yellow raspberries are identical to red raspberries.

All raspberries should be pruned in late winter/early spring from April to early May.

## TIPS &amp; TRICKS

## ROTATION

Plant crops in rotation based on their nutrient demands to allow for the cycling and restoration of soil nutrients. Alternate light, medium and heavy feeders through the years. Some crops, such as peas, return nitrogen to the soil through bacteria activity fixing nitrogen in the soil.

Light feeders / soil builders:  
beans, peas

Medium feeders:  
carrots, lettuce

Heavy feeders:  
corn, cabbage, cauliflower,  
potatoes and brocolli

## PEAT POTS

Peat pots do not disintegrate quickly enough in northern soils. Be sure to remove the plants from the peat pots before transplanting to prevent restriction of developing root systems.

## TRANSPLANTING TOMATOES

To be successful, tomato plants should be transplanted away from peppers or potatoes. Peppers attract insects and potatoes suffer the same blight as tomatoes. Dig a hole deeper and wider than the root ball. Fill the hole with compost or nutrient rich soil to the height of the first true roots. Stems can be protected from cut worms with a collar pushed 4 cm into the soil. Regular deep watering and application of manure tea will encourage successful transplanting and boost plant health.

## HARDENING OFF - TRANSITION FROM INDOORS TO OUT

About ten days before transplanting your indoor seedlings into your garden, begin the process of hardening off. This is the gradual introduction of seedlings to the outdoor environment to maximize transplant survival. Begin by reducing the indoor temperature



Vegetables from Tagish Farms

to 15.4°C and remove coverings. On the first day outside, place flats in partial sun for two to three hours during the warmest part of the day. Each day, increase the time outside by one hour and position the flats in more direct sunlight. On the tenth day, the plants should be able to handle direct sun exposure for the full day. The seedlings are now ready to transplant.

## THINNING ADDS TO THE ROOTS

Plants growing too close together will need to be thinned regularly; particularly carrots, beets, radishes, turnips, and parsnips. Crowded vegetables produce luxuriant tops and minimal roots. Root vegetables need to be thinned at least 10 cm apart.

## COMPANION PLANTING

Be mindful of which seeds you are putting beside one another this spring. Some plants do not do well next to others. Here is a short list:

- Dill does not go well beside carrots, even though pickled carrots taste great.
- Broccoli should not be planted with tomatoes, lettuce or strawberries, but these combined in a salad with a little oil and vinegar are fantastic.
- If you are planting pumpkins for the Klondike Harvest Fair giant pumpkin contest, be sure to plant potatoes elsewhere.
- Potatoes are a poor companion to rosemary, though when combined together with some dill and oil make an excellent dish.

For a complete list consult your Yukon Gardener's Manual (available for purchase at the Agriculture Branch).



## CALENDAR OF EVENTS

## RED MEAT MOBILE ABATTOIR PRESENTATION

March 29 from 7:00 to 9:00pm

@ the Westmark Whitehorse

Agriculture Branch staff will make a presentation on the new abattoir, scheduled to begin operation this fall. Canadian Food Inspection Agency representatives will be on hand to answer questions on livestock identification, on farm food safety, and meat processing.

## FIREWEED COMMUNITY MARKET SOCIETY

After an extremely successful first year, the fireweed community market society is full of energy as they enter the upcoming season. Opening day is scheduled for **Thursday May 18**.

**Downtown Market**

Thursday 3 pm - 9 pm

Shipyards Park

May 18 - mid September

**Yukon Made Market**

Saturday 11 am - 2 pm

Throughout the summer at the Takhini Gas Station (corner of the Hotsprings Road and North Klondike Highway)

For Information

Phone (867) 393-4628 or email [fireweedmarket@yahoo.ca](mailto:fireweedmarket@yahoo.ca)

*"It's about more than good food"*

InFARMation is...

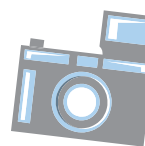
A Yukon government newsletter published by the Agriculture Branch of the Department of Energy, Mines and Resources. If you would like to add or remove your name from the newsletter mailing list, comment on an article, or contribute a story, please write to:

InFARMation  
Department of Energy, Mines and Resources  
Agriculture Branch  
Box 2703 Whitehorse, YT Y1A 2C6  
Phone: (867) 667-3417  
Fax: (867) 393-6222  
Email: [tony.hill@gov.yk.ca](mailto:tony.hill@gov.yk.ca)

Or call Tony Hill at (867) 667-3417, outside of Whitehorse at 1-800-661-0408 local 3417, or stop by the Agriculture Branch. We are located on the third floor Elijah Smith Building.

Online: [www.emr.gov.yk.ca/agriculture](http://www.emr.gov.yk.ca/agriculture)

## ANNOUNCEMENTS



## PHOTO CONTEST

The Agriculture Branch is going to run another photo contest this year. Submit your photos to the Agriculture Branch all season long. A showcase of the best photos and prizes for the top three will be presented at the North of 60° Agriculture Banquet November 4, 2006.

## FUEL CONTAINMENT

Within the Environment Chapter of the Agricultural Policy Framework we now have a fuel containment program that allows producers who have a completed Environmental Farm Plan to access cost shared funding for double walled fuel containment.

Visit the Agriculture Branch or phone Matt Ball (867) 393-7410 for more information.



## CLASSIFIEDS

**Elk Meat For Sale**

25 or 50 lb packages with lean burger, prime rib, t-bone, ribs, etc. Low fat, low cholesterol and high protein.

Ford Elk Farms Ltd 633-4342

**Velvet Antler For Sale**

30 or 100 capsule bottles. Natural and healthy.

Ford Elk Farms Ltd 633-4342

**Top Quality Yukon Grown Hay For Sale**

100% Guarantee. Buy 10 bales get 1 free!

800 lb round or 50 lb square.

Rafter A Ranch, Ibex Valley

Phone 667-7844 or email [raftera@northwestel.net](mailto:raftera@northwestel.net)

**YAA is looking for a Klondike Harvest Fair**

**Coordinator** - for more information about this position including a detailed work plan and budget please contact Rose Drury at the Yukon Agricultural Association office.

Phone 668-6864 or email [info@yukonag.ca](mailto:info@yukonag.ca).

*We are located in the Elijah Smith Building room 320. Stop by for a visit anytime.*