



INFARMATION

Yukon Agriculture Branch Quarterly Bulletin

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MESSAGE FROM THE AGRICULTURE BRANCH

Everyone seemed to be worried about the weather this year. Adverse growing conditions are one of the challenges farmers and gardeners face up here and from the reports I have heard, you were up to it. Hay crops were average to above average and although our raspberries at the research farm yielded less than expected, it was probably due to top kill on the canes from the previous winter and not due to cool summer temperatures. Trial and error have shown us that we can manage the weather by using row covers and mulches, fall fertilizing and seeding to get a jump on spring, and innovating to produce better crops than many thought possible north of 60°. Well done. If this summer was a test, I think we passed with honours.

There is an article in this newsletter describing how you can have input into the programs being offered under the Canada-Yukon *Growing Forward* Agreement. *Growing Forward* is a cost shared funding agreement with the federal government to develop the agriculture industry in Yukon. *Growing Forward* replaces the agreement that we have had in place for the last five years.

In the past year alone, the agreement has funded the completion of 10 Environmental Farm Plans, redevelopment work to improve utilization on 190 acres of farm land, funded two cooperatively owned 22 tonne fertilizer bins and a new manure spreader that can be rented from Yukon Agricultural Association, provided funding to offset the training costs for three farm apprentices, funded a multiple location pre-school gardening program, provided horse show ribbons for shows in Whitehorse and Watson Lake, booth rental by Dawson farmers wanting to sell their products at the Dawson City Gold Show, and provided funding to operate the mobile abattoir. It's a long list, but you get the idea. Please take a moment to read the article, these programs may benefit you in the future.

It is also time to think about attending this year's North of 60° Agriculture Conference and Banquet being held on November 1, at the Westmark Hotel in Whitehorse. Details on presentations being made are included inside the newsletter. Make sure you book your banquet tickets early to avoid disappointment, as last year was a sell out, leaving a few folks on the outside looking in.

I hope to see you there.

Tony Hill
Director, Yukon Agriculture Branch

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NORTHERN AGRICULTURE

THE NORTH OF
60° AGRICULTURE
CONFERENCE 2008

WESTMARK WHITEHORSE
FRIDAY OCTOBER 31ST AND
SATURDAY NOVEMBER 1ST, 2008

Energy costs have increased substantially over the past few years. Optimizing fertilizer and diesel use is critical for maintaining a profitable farm. Add to this the management of forage and animal health, which help the bottom line. This year the North of 60° Agriculture Conference is exploring some of the management techniques to reduce on farm energy requirements.

Some of the guest speakers include:

DR. SURYA ACHARYA, who will speak of strategies for overwintering forages. He will help explain the reason for perennial winterkill of crops and the management techniques to allow persistence of these crops through the long Yukon winters.

Dr. Acharya is recognized as a leading scientist in Canada for his work on traditional and non-traditional forage crops. He is a Senior Research Scientist with Agriculture and Agri-Food Canada and is the National Leader for the Forage Breeding Study. He has developed and commercialized three high yielding disease resistant alfalfa cultivars, two high yielding cicer milkvetch cultivars and four orchardgrass cultivars. Dr. Acharya has developed and commercialized the first North American perennial cereal rye (PC rye) cultivar ACE-1 and the first forage fenugreek cultivar Tristar for western Canada. He was also instrumental in the development of nine native Alberta grass cultivars, presently used for reclamation and revegetation of

high elevation disturbances. Dr. Acharya collaborates internationally with human and animal nutritionists and makes sure his cultivars have improved nutritional quality along with high yield.

CLIFF HANNA will be speaking about Horse Dentistry in the North. Cliff practices equine dentistry in northwestern Canada, parts of the United States and South America. His main focus has become providing hands-on knowledge to horse owners.

Cliff and his wife Nicola travel extensively, presenting dynamic and enlightening equine dental awareness seminars, and have taught horse people about their horse's needs as far away as the University of Quito in Ecuador.

Cliff writes articles for horse magazines, on and off line, is author of two books. Horse people from many different parts of the world contact Cliff through email and his websites with their questions and

problems regarding their horse's teeth.

KENT LAMOUREUX from Sturgeon Valley Fertilizers will be providing detailed information on fertilizer requirements for forage and other crops. Kent has had years of experience in the fertilizer industry dealing with disease issues and soil deficiencies. He will be speaking about optimizing crop performance, enhancing disease resistance and plant hardiness through proper fertilization.

Other topics include irrigation technologies and techniques to reduce fuel consumption, and understanding farm finance and access to funding. We will also be spending some time organizing a Yukon Agriculture Research Committee.

For further information please contact Matt Ball at (867) 393-7410 or 1-800-661-0408 ext 7410 or email matt.ball@gov.yk.ca.

NOMINATIONS FOR 'FARMER OF THE YEAR'

Is there a farmer or farm family in your community that has shown the kind of commitment and passion for agriculture in the last year that you feel should be recognized? With the Agriculture Branch's annual fall conference fast approaching, this is your opportunity to nominate a producer or farm advocate for the Agriculture Branch farmer/farm family of the year award. The award is presented at the annual Yukon Agriculture Banquet being held on November 1, 2008 at the Westmark Inn in Whitehorse.

Nominations should be submitted in writing to the Agriculture Branch with a brief explanation of why the candidate(s) are worthy of the award. Nominations may link the nominee's contribution to agriculture or agri-business development in the Yukon, assistance with the future of agriculture in Yukon, good farm management practices, development of any new or innovate ideas, or any other reason you feel your candidate should be chosen.

All the nominations must be in writing and signed by the nominator(s) by Wednesday, October 29, 2008, at 4:00 p.m. Letters, facsimiles and e-mails will be accepted. We are located in room 320 of the Elijah Smith Building in Whitehorse, Fax: (867) 393-6222 or Email: agriculture@gov.yk.ca

NORTHERN AGRICULTURE



GROWING FORWARD: YOUR CHANCE FOR INPUT

Federal, Provincial and Territorial (FPT) governments are currently moving away from the funding available through the *Agriculture Policy Framework* and are in the process of developing a new agriculture framework agreement on agriculture, agri-food and agri-based products called *Growing Forward*. The vision for the new policy is for a profitable and innovative agriculture, agri-food and agri-based products industry that seizes opportunities in responding to market demands and contributes to the health and well-being of Canadians. The *Growing Forward* Framework Agreement coordinates the action for FPT governments on the investment of \$1.3 billion over the next 5 years. The funding is cost-shared between the Government of Canada and provincial or territorial governments. The FPT governments are currently working on the specifics of this investment and are developing bilateral agreements that will lay out in greater detail how national provincial and territorial programming will work within each jurisdiction to meet the needs of farmers and other industry stakeholders.

This is a good time to provide your input. Yukon farmers and industry stakeholders should make their opinions known through their industry representatives. These industry representatives sit on the Agriculture Industry Advisory

Committee (AIAC). The AIAC provides advice, feedback and recommendations on agriculture development and management in the territory and this feedback will be used to aid in the development of the next generation of agriculture programs and funding. Over the next few months the AIAC will provide feedback in determining what programming has been effective, what programming has not been effective and determining where there is room for improvement and changes. AIAC is composed of government and industry representatives, including representation from the main Yukon agricultural industry organizations. Current members include:

- Shiela Alexandrovich: Growers of Organic Foods Yukon
- Dave Andrew: Yukon Agriculture Association
- Rosa Brown: Fireweed Community Market
- Wayne Grove: Game Growers Yukon
- Ralph Mease: Yukon Agriculture Association

The Agriculture Branch is the primary Yukon government contact. The Agriculture Branch can also be your contact if you don't have a representative on this committee or if you want to express a view on past, present or future agriculture programs.

Any new programming ideas should fit under the vision for a profitable and innovative agriculture, agri-

food and agri-based products industry that seizes opportunities to respond to market demands and contributes to the health and well-being of Canadians. To achieve this vision, FPT Ministers agreed to put into place policies and programs to achieve three fundamental, strategic priorities:

- A Competitive and Innovative Sector;
- A Sector that Contributes to Society's Priorities; and
- A Sector that is Proactive in Managing Risk.

Full implementation of the new framework will take place on April 1, 2009. The fine print in achieving the vision and strategic outcomes for FPT governments will be guided by a number of specific principles, including most notably the commitment to flexibility in programming.

For more information on *Growing Forward* framework, please visit www.agr.gc.ca.

To get involved in the discussion on the new program funding, contact your industry representative or the Yukon Agriculture Branch at (867) 668-5838 or 1-800-661-0408 ext 5838 or email agriculture@gov.yk.ca

NORTHERN AGRICULTURE

LIVESTOCK
WATERING
DEMONSTRATION

Adapted from Alberta Agriculture and Rural Development Remote Pasture Water Systems

The Yukon Agriculture Association, with funding from the Canada-Yukon Water Supply Expansion program and support from the Prairie Farm Rehabilitation Administration (PFRA), is working on a number of livestock watering demonstrations for Yukon agriculture producers. These demonstration projects are evaluating different methods of livestock watering that can reduce labour and energy costs, and reduce the impact on the environment. These systems are designed to operate in remote locations from spring to fall or, potentially, year round.

The concern in Yukon pastures is to limit the direct access to water sources by livestock while still maintaining year round water supply. These demonstration projects will show different methods of water supply from different water sources using different remote power options. Once these projects are installed we will be able to demonstrate how these systems work in the Yukon and how these systems help address local water supply concerns.

PROBLEMS WITH DIRECT
WATERING

Allowing livestock direct access to surface water sources has led to a number of environmental, herd health and pasture utilization problems.

ENVIRONMENTAL PROBLEMS

Environmental problems with direct watering include the following:

- damage to banks of streams and dugouts
- siltation problems in spawning

areas for fish

- loss of riparian habitat and vegetation
- deterioration in water quality.

HERD HEALTH PROBLEMS

A number of herd health problems are related to direct watering:

- increased exposure to water-transmitted diseases, bacteria, viruses and cyst infections
- foot rot and leg injuries
- death by drowning from falling through the ice or being stuck in mud.

POOR PASTURE UTILIZATION AND
NUTRIENT TRANSFER PROBLEMS

Other problems with direct watering include two aspects:

- overgrazing near the water source
- poor nutrient transfer caused by an accumulation of manure in the area near the water source.

DEMONSTRATION PROJECTS

The livestock watering demonstration is evaluating a frost free nose pump, a solar operated pump to a portable watering tank and also a continuous flow sling pump.

FROST-FREE NOSE PUMP

The frost-free nose pump is a good option for both summer and winter watering of livestock. The pumps are operated when the cows push the nose pad that moves a piston in the bottom of the wet well. The piston lifts the water up into a small drinking bowl. The cow drinks the water out of the bowl, and then can pump more water. When the cow is finished drinking, the water in the bowl and drop pipe that brings the water up from the well drains back below frost line, leaving no water in the watering bowl or line to freeze.

SOLAR-POWERED PUMPING
SYSTEMS

Solar-powered systems are popular because of their reliability and low maintenance. Although not suitable for Yukon winters, the system can be used efficiently during summer grazing periods. A solar system is used to pump water from a water source to a livestock watering tank allowing for protection of the water source and riparian areas. An array of solar panels collects and converts sunshine into electrical energy, which can be used to pump water or be stored by rechargeable batteries. Due to the variation in sunshine intensity, a minimum of three days water or battery storage is sensible.

Solar powered systems have the added advantage of pumping the most water on hot sunny days when cattle are drinking lots of water. Excess power can be used to energize an electric fence for the pasture. Although the initial costs of a solar-powered system are somewhat higher than for others, the system will last for many years. The portability of the solar pumping system is another advantage.

The solar pump unit used in the demonstration is set up to be a self contained portable or moveable watering station designed to be rotated around to protect pastures and water supplies.



Photo: Frost-Free Nose pump

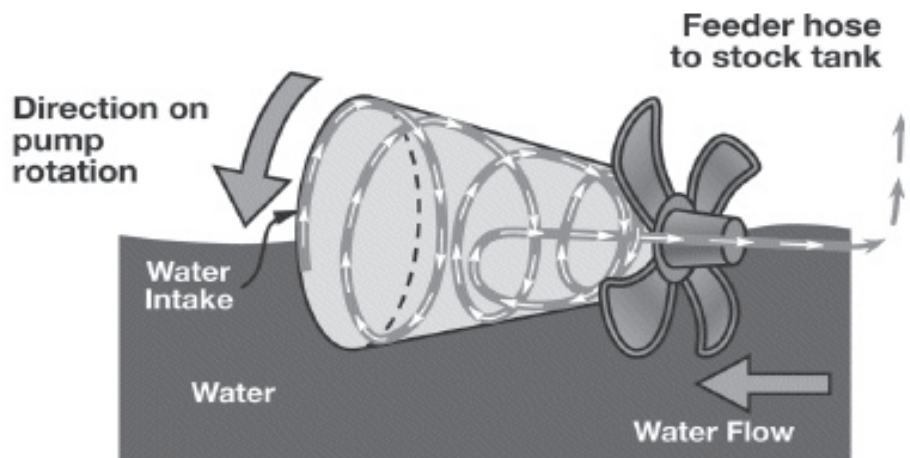
NORTHERN AGRICULTURE

SLING PUMP

A sling pump is a type of coil pump powered by the flow of moving water. The unit operates when it is half submersed in a moving current, the flow of water powers a propeller that rotates the entire unit. Inside the unit is a coiled pipe which on each rotation dips into the stream taking a “gulp” of water, sufficient to fill the lower part of the coil, and on the upper half of the rotation the unit traps air in the coil. With each revolution, the water moves along the coil and a new “gulp” of water is taken. As water (and air) move through the coil with each revolution the rotating force and compression of air can then pump water to a livestock holding tank. This design is limited in available water lift and volume, but is a very simple device, easy to set up, portable and requires no external source of energy other than a strong current from a river or creek.

The sling pump over the duration of a day can deliver up to 3,000-6,000 litres (650-1,300 imp. gallons) depending on model available and can generally provide between 8 m (26 ft.) to 25 m (83 ft.) of lift.

For more information on any of these livestock watering demonstrations or other possibilities please contact Rick Tone at the Yukon Agriculture Association
Phone (867) 668-6864 or
E-mail admin@yukonag.ca.



Conceptual diagram of how a sling pump works. (Source: The Stockman's Guide to Range Livestock Watering From Surface Water Sources)

WAS THIS THE COLDEST GROWING SEASON IN 10 YEARS???

You may not believe it, but according to weather data available from the Whitehorse airport, 2008 does not have the distinction of being the coldest growing season in the last 10 years. The 1st year of the new millennium, in 2000, holds the honours of being the coldest growing season in the last 10 years, followed closely by 2008. The growing season is roughly from May 1st to September 15th, and upon tallying the growing degree days from the 2008 growing season the year was found to be cool but not as cold as 2000. In both cases the cooler temperatures would result in limitation to what could be grown and how plants matured in the Whitehorse area.

Although 2000 may have been the coldest growing season, June and July of 2008 on average were the coldest in over 20 years. The average June temperature for 2008 was 10.5°C and the July average was 12.4°C. We have not seen weather in June this cold since 1987 and we have to go back to 1974 to find a average temperatures in July as cold as the past season we just experienced.

A more detailed report of the 2008 growing season will be published in the winter issue of InFARMation. This will include precipitation and growing degree days for the central Yukon, the Takhini Valley, Haines Junction and Watson Lake.



TIPS & TRICKS

FALL LAWN MAINTENANCE TO ENHANCE WINTER SURVIVAL.

Adapted from an Ontario Ministry of Agriculture Food and Rural Affairs Fact Sheet.

After a summer that saw some timely rain, lawns throughout the Yukon are looking greener, but that doesn't mean Yukon gardeners should abandon their lawn chores entirely for berry picking. In the fall we can do a few things to help prepare lawns for survival during the winter and a quick green-up in the spring. In Yukon we may have missed the timing on this because of our short fall season and fast approaching winter, but here are a few tips for next year.

REPAIR DAMAGED LAWNS BEFORE WINTER WITH A FALL FERTILIZER APPLICATION; OVERSEED WHERE NECESSARY

Damaged areas in turf will recover more quickly in spring with an application of fertilizer in the fall. The fall application should be made in early fall (mid-August is good). This will help turf recover from damage that occurred during the growing season. Nitrogen and potash stimulate turf growth and repair, and harden off the turf for winter. Fertilizer should be applied at a rate to deliver 0.5 kg of nitrogen per 100 m².

Some damage is too extensive to be fixed with just an application of fertilizer. For those areas, uniformly distribute the desired seed mixture, making sure the seed is in contact with the soil. Seed-to-soil contact can be enhanced by scratching up the thatch layer to expose the soil before spreading seed. The recommended option for overseeding is a mixture of perennial ryegrass, red fescue and

Kentucky blue grass. Rolling newly seeded areas also helps. Water the seeded areas frequently to ensure good germination. The ideal time for overseeding is also mid-August.

Another option for overseeding lawns is a frost seeding. The ideal time to frost seed is in the very early spring or late fall (mid October). When frost seeding the ground should go through a few freeze and thaw cycles after the seed is broadcast. Fall seeding should be done after all the growth has stopped for the year, it's too cold for the seed to germinate and in areas which normally receive good snow cover and do not experience prolonged winter thaws when the seeds could germinate. Do consider late October seeding when a light skiff of snow may help to show where you have seeded.

CONTROL THATCH IN THE FALL

Thatch harbours disease-causing organisms such as snow mould. In turf with excess thatch, the growing point of the plant is elevated above the soil. The soil has insulating properties that the thatch does not. Lawns with an abundance of thatch are more prone to winter injury. The ideal time for thatch control is the same as for fall fertilizing. There are two major ways of controlling thatch - core aeration and de-thatching. Core aeration cuts cylindrical plugs out of the lawn, breaking up the thatch and bringing up soil, which contains microorganisms that help break down the thatch. De-thatching, or verti-cutting, is done by a machine that cuts into the thatch vertically -- bringing up the debris, which can then be raked up and removed.

REMOVE FALLEN TREE LEAVES BEFORE SNOWFALL

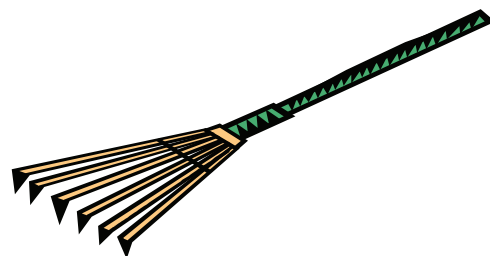
If fallen leaves are not removed, the lawn will not get light and will eventually die. If we had earthworms, an alternative to leaf removal would be pulverizing tree leaves with a mulching mower and letting them decompose on your lawn. In the Yukon this practice is not recommended as it would only add to the thatch layer that harbours snow mould spores.

LEAVE THE LAWN CUT AT THE RIGHT HEIGHT

Raise the mowing height slightly in the fall. Rooting depth is proportional to mowing height: the longer the leaves, the deeper the roots. Longer grass blades provide some insulation for the crown (growing point) of the grass plant. However, if the grass is too long going into the winter it will become matted, which encourages winter diseases such as pink and grey snow mould.

APPLY A LATE SEASON FERTILIZER APPLICATION

To insure good winter survival and early spring green-up, make this fertilizer application when the turf has stopped growing but is still green, usually in mid September. Timing is critical. Fertilizer applied too early will promote succulent growth in the fall that will make the lawn more susceptible to winter injury. Fertilizer applied too late will be of no benefit to the turf. The application rate for this time of the year is the same as for the early fall application, approximately 2.5 kg of 21-7-7 per 100 m².



TIPS & TRICKS

PRINCIPLES OF LATE-SEASON FERTILIZATION

- Nitrogen is taken up by the roots even though shoot growth has ceased. This is because roots remain active at cooler temperatures than shoots.
- Nitrogen increases chlorophyll content and hence enhances fall colour.
- Increased chlorophyll content means increased photosynthesis.
- Increased photosynthesis means increased sugars. Since turf is not growing at the time of the fertilizer application, the sugars that are produced are not used for growth, but are stored to enhance winter survival and spring recovery.
- These sugars make the grass plant less susceptible to freezing. A good analogy is that a bottle of juice in the freezer will take longer to freeze than a bottle of water. The grass plant cells are full of sugars and hence take longer to freeze, and freeze at lower temperatures.
- Late-season nitrogen applications promote deep rooting during the fall, so plants go into the spring and summer with deeper, healthier roots.
- Spring green-up is early, because the nitrogen that is stored in the roots is ready when shoot growth resumes.

With the addition of properly timed fertilizer applications your lawn will survive the winter better, green up earlier in the spring and have deep roots that will give you a healthy lawn your neighbors will envy. For you forage producers, some of these tips will also work well in a hay stand.

FERTILIZER COSTS

A quick call to a fertilizer dealer down south sends a shock to the cheque book these days. Urea is more expensive than ever before, with a cost up anywhere from \$900 to \$1100 per tonne and phosphorus even higher.

Why have fertilizer costs gone up so much and is it worth applying fertilizer at these costs?

In most cases, the price of fertilizers has more than doubled over the last 4 years. The price is increasing for a number of reasons.

The price of nitrogen fertilizers is directly related to the price of natural gas (methane). For example manufacturing 1 ton of anhydrous ammonia fertilizer requires 33,500 cubic feet of natural gas. This cost represents most of the costs associated with manufacturing anhydrous ammonia. When natural gas prices are \$2.50 per thousand cubic feet, the natural gas used to manufacture 1 ton of anhydrous ammonia fertilizer costs \$83.75. If the price rises to \$7.00 per thousand cubic feet of natural gas, the cost of natural gas used in manufacturing that ton of anhydrous ammonia rises to \$234.50, an increase to the manufacturer of \$150.75. All forms of manufactured nitrogen fertilizer come from the production of anhydrous ammonia. Urea is formulated by a reaction between anhydrous ammonia and carbon dioxide at high temperature and pressure. Ammonium nitrate is formulated by combining anhydrous ammonia and nitric acid in a very corrosive manufacturing climate.

Nitrogen is all around us, unfortunately most of it is not in a form plants can use. Nitrogen is converted to plant-available forms during lightning strikes and some is returned to the soil when rainfall washes pollutants out of the air. Free-living blue-green algae convert small amounts of atmospheric nitrogen to plant-available forms. Bacteria in legumes' roots also convert atmospheric nitrogen to plant-available forms. However, of all these mechanisms, only the bacteria and legume conversion supplies enough plant-available nitrogen for high-yield agriculture. Therefore, we depend upon manufactured nitrogen for additional nitrogen requirements.

The story for potassium (potash) and phosphorus is different. Potassium can be mined or created through evaporation pans. It has become more expensive due to high demand and increased production costs.

Phosphorus is only generated by mining, so it is a limited resource in the long run. The supply of phosphorus has just barely outstripped demand over the past few years, therefore the costs have been driven upward.

Although it is becoming expensive, it continues to be worthwhile to use fertilizers, in terms of plant growth and plant hardiness. In order to make sure your costs stay within reason here are a few ideas:

- Build compost. Manures and plant wastes decompose to generate a suitable soil amendment, usually with all the necessary nutrients in small doses.
- Incorporate animals on farm and use the manure as a nutrient source.
- Collect soil samples to tailor the fertilizer blend for your crop needs.

CALENDAR OF EVENTS

21ST ANNUAL NORTH OF 60°
AGRICULTURE CONFERENCE
SATURDAY, NOVEMBER 1ST, 2008
WESTMARK WHITEHORSE



FARMER OF THE YEAR

Enter your nominations at the Agriculture Branch for Farmer (or Farm Family) of the Year by Wednesday October 29, 2008 at 4:00 p.m.

The presentation will be made at the Banquet November 1st.

BULK FERTILIZER SAVINGS – for 1 tonne or more.
Call the Yukon Agricultural Association for details at 668-6864.

YUKON PRODUCTS

The Agriculture Branch would like to give thanks to all the farmers who participated in the Fireweed Community Market and the Dawson Farmer's Market this year.

Watch for and request "Yukon Grown" on your next shopping trip.

InFARMation is..

A Government of Yukon 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 feel free to contact us.

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Call Agriculture Branch at (867) 667-5838, toll-free outside of Whitehorse at 1-800-661-0408 local 5838, or stop by the Agriculture Branch on the third floor of the Elijah Smith Building in Whitehorse.

Online: www.agriculture.gov.yk.ca

ANNOUNCEMENTS

**PICK UP YOUR AGRICULTURE
BOOKMARK**

The Yukon Energy, Mines & Resources Library has a new bookmark advertising all the Farming & Gardening Magazines they subscribe to for your reading pleasure. A good time to pick up your new bookmark would be during the EMR library open house October 29th, from 12-3pm.

Magazines available include:

- Acres
- AgriDigest
- AgriView
- Agroborealis
- Canadian Cattlemen
- Canadian Gardening
- Canadian Organic Grower
- Canadian Poultry Magazine
- Cattle Country
- Country Guide
- Farm Show
- Food For Thought
- Fruit Facts
- Gardener for the Prairies
- Gardening Life
- Grainews
- Hay & Forage Grower
- InFARMation
- Manitoba Co-operator
- Mother Earth News
- Organic Gardening
- Prairie Hog Country
- Small Farm Canada
- Western Producer

EMR Library also holds many Agricultural books, DVDs and videos, as well as helpful resources such as air photos and maps.

The Yukon Energy, Mines & Resources Library is located in the Elijah Smith Building, 300 Main Street, Room 335, Whitehorse.

Hours of operation:
Monday to Friday 8:30 a.m. – 4:30 p.m.

Contact information:
Phone: (867) 667-3111
Toll-free: 1-800-661-0408, extension 3111
Email: emrlibrary@gov.yk.ca