

InFARMation

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Yukon
 Renewable Resources

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Message from the Ministers



Honourable Dale Eftoda, Minister of Renewable Resources
 Minister of Environment, as of April 1, 2002

For the past two years, it has been my pleasure to work with Yukon's agriculture industry as Minister of Renewable Resources. As many of you may know, the Government of Yukon is going through a process of renewal, which will lead to enhanced efficiencies and accountability to the people of the Yukon.

On April 1, 2002, the Agriculture Branch will become part of the new Department of Energy, Mines and Resources (EMR). The agriculture industry has a long and proud history in our territory. It is built around dedicated, hard working and skilled people who are determined to succeed and make a positive difference to our economic future. I wish the industry continued success under the direction of Scott Kent, Minister of Energy, Mines and Resources.

Honourable Scott Kent, Minister of Economic Development
 Minister of Energy, Mines and Resources, as of April 1, 2002

I would like to take this opportunity to welcome the Agriculture Branch and all of its clients to the new Department of Energy, Mines and Resources. This change is a result of renewal, a change that supports our government's vision of a healthy natural resource sector.

The Department of Energy, Mines and Resources is responsible for the managing and developing our natural resources. This includes oil, gas, and agriculture, combined with policy and planning functions associated with mining, forestry, energy, pipeline development and disposition of undeveloped lands.

I look forward to meeting many of you and working with the Agriculture industry. I believe you'll find that the new department's mandate focusing on service to clients and support to industry will better suit the needs of agriculture in the Yukon.



► Biofuels for Transportation

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 the product of his dream – an efficient internal combustion engine, powered by crude oil or even vegetable oil. He believed that 'the engine that can be fed vegetable oils would help considerably in the development of agriculture in countries which use it.'

The early 1900s saw another plan to utilize renewable fuels. Henry Ford planned to use ethanol as the primary fuel for his Model T; however, the less expensive gasoline emerged as the dominant fuel and relatively inexpensive crude oil prices led to the predominant use of fossil fuels since.

The term biofuels can refer to fuels for electricity and for transportation. Biofuels for transportation include bioethanol, biodiesel, biomethanol, and pyrolysis oils. The two most common types of biofuels being developed and used in North America are biodiesel and bioethanol.

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. Other oils will also work.

Biodiesel is usually sold as a fuel additive in 1% 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 CO₂, 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 CO₂ out of the atmosphere, biodiesel adds no net CO₂ to the atmosphere – an important consideration in reducing greenhouse gas emissions (GHGs).

Biodiesel also displays advantages for engine lubrication. Various tests indicate there is 45% less en-

gine 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 ten-fold 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 sulfur. Sulfur is however, a major source of air pollution and allowable limits in diesel have been reduced from 3,000 to 500 ppm. There is great potential for biodiesel as an engine lubricant! The benefit of biodiesel carries over to producers of the raw materials. Adding just 0.1% biodiesel to the diesel used in Canada would require 250,000 acres of canola. 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 other countries. Europe has produced and used biodiesel for 20 years!

From Saskatchewan Agriculture Biotechnology

► Joint Damage

Lameness can result from damage to any of the tissues associated with the joint. If ligaments, tendons or muscles that help stabilize joints become disrupted due to injury, instability of the joint can result. This ultimately results in a change in the normal range of motion of a joint and lameness. Likewise, disease of the supporting bone can lead to collapse of the joint surface and painful lameness. Damage to the articular cartilage such as breakdown of collagen and loss of proteoglycan result in weakened cartilage. This weakened cartilage develops cracks and holes and loses its smooth articulating surface resulting in lameness again. Likewise, damage to the synovial membrane and changes in the makeup of the joint fluid result in alternations in normal joint viscosity and still another reason for lameness. So what is the underlying reason for joint damage? The answer is quite simple - "inflammation".

Inflammation is normally a protective mechanism initiated by the body in response to injury. It is often localized to a particular area of the body and begins as a result of injury to or destruction of body tissue.

The purpose of inflammation is to destroy, dilute or isolate both the injured tissue and/or any foreign material. It is the initial response in a series of events that lead to the attempted repair of the injured tissue. Inflammation causes blood vessels to dilate and allows fluid and cells to leak out. The cells that are released into tissues during inflammation are mostly white blood cells. In turn white blood cells release a variety of chemicals and enzymes into the inflamed area.

The inflammation response in a joint is also a process designed to breakdown and remove injured or foreign material. The process of breaking down and removing the foreign bodies from the area changes the chemical makeup of the fluid in the joint, introduces excess fluids and a high concentration of destructive enzymes and prostaglandins into a closed area (the joint capsule). This destroys the lubricating GAGs. The synovial fluid begins to lose viscosity. The chondrocytes eventually suffer from a compromised nutrient supply, can't keep up with repairs, and the cartilage develops damaged areas opening the bone ends to direct trauma. The bone responds with a defense that only causes further destruction, it lays down new bone to strengthen the surface (sclerosis) and extends its margins in the form of bone spurs. If left unchecked, inflammation will totally destroy the joint as a disease called arthritis.

From Alberta Agriculture 2002



Bill Drury and Randy Hallock provide annual health care to game farmed elk

► Treatment Strategies for Joint Damage

Many options exist for treating joint disease in horses. The major treatment goals are to reduce inflammation, improve joint fluid, and/or to improve cartilage. Treatments to accomplish these goals generally fall into two categories: physical therapies and medical therapies. Physical therapies include rest, bandaging, application of heat, application of cold, and mild, controlled exercise to maintain range of motion. Forty years ago, medical therapies to treat joint disease were limited to liniments, blisters, sweats, poultices, application of DMSO (Dimethyl Sulfoxide, an anti-inflammatory), NSAIDS (Non-steroidal Anti-inflammatory Drugs - such as Phenylbutazone or bute) and corticosteroids injected directly into the joint.

Treatment options for horses with joint disease began to change some thirty years ago when scientists first attempted to replace some of the natural constituents of joint fluid and/or cartilage, in the hope that the body could use those building blocks to restore normal joint function. The first product used was Hyaluronan. Hyaluronan is a proteoglycan that's an important component of joint fluid and joint cartilage. Hyaluronan can be injected directly into the joint, and more recently, a new form of the drug can be injected systemically and find its way to the joint. Hyaluronan is thought to increase the viscosity of synovial fluid, inhibit some of the damaging enzymes and promote the synthesis of more sodium hyaluronate. Polysulfated Glycosaminoglycans (PGAG's) are another powerful class of drugs for the treatment of joint disease. Remember the GAG's are negatively charged molecules that bind and hold water. The water helps the articular cartilage manage the pressure of weight bearing.

These drugs have been shown to be anti-inflammatory and to increase the production of the proteoglycan component of cartilage. PGAG's can be injected directly into the joint and also into the muscle to achieve positive treatment results.

► Dispelling Myths: "Horses must be cooled down after exercise before allowing them to drink"

For generations horsemen have been warned against allowing their "hot" horses to drink because of a perceived risk of colic and cold-water founder. However, with the possible exception of very hard galloping, it is safe for horses to drink right after exercise. In fact, recent research has shown that withholding water after exercise may be more of a disservice because it prolongs dehydration. Horses are more likely to drink and replenish fluid lost in sweat soon after exercise when their thirst drive is high, compared to waiting until they are "cool" and have lost interest in drinking.

The caution about hot horses and cold water probably originated from complications experienced by field hunters. At midhunt checkpoints, horses were allowed to drink deeply from frozen streams after hours of galloping and jumping. Although complications were linked to horses drinking while being hot, they likely resulted from winter-frigid water temperatures on top of extreme exertion. Understandably, great gulps of ice-cold water could shock a hot horse's system, but most horses aren't ridden this hard, nor are they given such cold water.

Dehydration can be quite harmful to your horse, so offer water as soon as is practical after your ride. Unless you have been running your horse hard, give him access to tap water right from the start of the cooling out-period. It may take a few minutes for his thirst mechanism to kick in, so allow him to drink his fill and then keep coming back to the bucket as long as he wants a refill. If you ride over long distances, or for prolonged periods of time, stop periodically and allow your horse to drink during your ride.

For more information on horse care come by the Agriculture Branch and pick up a copy of the booklet *Horse Care in the North* by Patricia Smith DVM

► Consultations for a New National Agriculture Policy Under Way

The Government of Canada and the provincial and territorial governments are consulting with members of the agriculture and agri-food industry over the next two months to develop an agriculture policy for the 21st century. Federal agriculture minister, Lyle Vanclief has identified five planks in the agricultural platform hammered out at the agriculture ministers meeting in Whitehorse last summer: environment, food safety, renewal (skills and farm transfer), science, and safety nets.

With the pace of change in global agriculture and recent events such as foot-and-mouth and mad cow disease over seas and the tragedy at Walkerton, closer to home, the objective is for Canada to become the world leader in food safety, innovation and environmentally-responsible production. The ministers see this as a strategic, competitive move to capture the benefits and opportunities that will go with the nation that moves first. The goal is to have "agricultural products from Canada" synonymous with excellence worldwide.

Over the next two months, meetings are scheduled to take place across the country with farmers, food-industry representatives and consumer representatives to gather input on the policy. The Agriculture Branch is sending participants to the meetings in Edmonton and Vancouver.

To learn more or provide input, visit: www.agr.gc.ca/puttingcanadafirst or call: 1-800-622-6232.

► Thank You

Another successful Master Gardener course was held this past February. All 25 students passed the course and soon will be out in their communities completing their volunteer hours and passing on what they learned to others. Special thanks to all those who taught during the week long course: Roy Ness, Ingrid Wilcox, Bev Gray, Bruce Bennett, David Murray and Tony Hill for bringing it all to-



The pressure is on –
Master Gardener students writing the final exam

► Yukon Grown Asparagus

Asparagus (*A. officinalis*), a perennial member of the lily family, is one of the earliest spring vegetable treats. Harvest starts as early as the second week of May in Whitehorse and lasts until the end of June, when other early veggies are just maturing. Asparagus is a finicky crop to grow in the Yukon. It is best planted in a sunny location, with warm, well drained soil, in a spot where it need not be disturbed for a decade or so. If you are going to grow only a few plants, asparagus can be integrated into your flower garden – a sunny location against a fence is perfect, where it's summer foliage will provide a light textured, dark green backdrop for flowering perennials. Keep in mind that it does need ample room to produce well.



Plants can be grown from seed, if you have the patience to wait four years, but purchasing one or two year old roots is the best way to go. Plant rhizomes (roots) early in the spring, as soon as the soil can be worked. It is very important to incorporate generous amounts of organic matter, preferably compost or well-rotted manure into the soil as asparagus is a heavy feeder.

Dig a trench 30cm deep and 30 cm wide, backfill the first 5 cm with a mixture of topsoil, compost and

bonemeal. Set rhizomes, buds up, 50 – 60cm apart in the trench with the roots spread out flat and cover with 5cm of topsoil and water thoroughly. Fill the trench gradually as the plants grow, and by mid-August the trench should be filled.

Water and weed regularly through the summer and allow foliage to grow to develop and strengthen the root system. Harvesting can begin the second year after the initial planting year, but go easy! Harvest for only two weeks and let the remainder of the spears grow into ferny stems. Using a serrated knife, cut the spears about 6 cm below the surface of the soil. In subsequent years, you can harvest for up to six weeks. It is important to stop by the end of June to insure food reserves are built up for spear growth in the next season.

In the fall, cut the top growth after it turns yellow, before the seeds fall. Mulch with 5cm of compost or well-rotted manure.

Mary Washington is an old variety that has been grown here with moderate success but there are newer male hybrid varieties such as Jersey Knight and Jersey Prince that are more vigorous and therefore should be hardier in our region.

Adapted from: Plant and Garden, April 2000

► Agriculture Cost of Production Spreadsheets

The Cost of Production work is almost complete. A total of 17 different Yukon enterprises from Honey to Beef to Bedding Plants have been analyzed using spreadsheets. These spreadsheets allow you to enter your own information and compare it with a sample enterprise. All calculations are done automatically and the spreadsheets automatically generate an income statement as well as a cash flow statement. This information will go a long way in helping to determine whether an operation will be profitable. For more information or a copy of the spreadsheets, please visit the Agriculture Branch or phone (867) 667-5838.

► Whitehorse 4-H Multi Club

The year 2002 sees the start of a new 4-H Club in Whitehorse. The Whitehorse 4-H Multi Club has 20 members and 3 leaders. The club has 8 members in the horse project, 4 members in the sewing project and 8 members in the cloverbud project. The club had its first organizational meeting on January 10, that also was the day the president - Haily Austin, the secretary - Cassandra Andrew, the treasurer - Heather Boyd, club reporter - Kelly Bowers and safety officer - Ryley Andrew were elected as our executive. With the help of our leaders the executive will run the club. The Whitehorse 4-H Multi Club meets on the second Sunday of the month from 1-3 pm at Golden Horn School. When we meet we play a game while waiting for the meeting to begin. After the business section of our meeting we break into our groups and work on our projects.

*Kelly Bowers
Whitehorse 4-H Multi Club reporter*

► Buying Forage Seed

Quality, not cost, should not be the primary criteria when buying forage seed, says Michel Tremblay, provincial forage specialist, Saskatchewan Agriculture and Food.

“Quality seed is one of the cornerstones of establishing productive, long-lived forage stands,” says Tremblay. “Forage seed is often the single largest cash-cost input when establishing a new forage stand and, since most forage fields are in production for 10 or more years, it is imperative that producers select the correct type of seed and the highest quality possible.”

Quality seed benefits the producer in several ways. For example, it includes a minimal number of the weed seeds that can impair establishment and reduce yields or forage quality. If the seed is certified, it will be of a registered variety with known characteristics, including those of yield, quality, winter hardiness, and disease and insect resistance. Certified seed will also have high germination.

“Before buying forage seed, ask to see the seed testing certificate. Every lot of seed graded in Canada will have this certificate. It is issued under the authority of the Canada Seeds Act and informs the purchaser about the purity and germination of a seed lot prior to purchase.”

The seed testing certificate will have the following information: crop kind and, if Certified, variety; number and name of primary and secondary weed seeds present in a 25-gram sample; number and kind of other weed seeds present in the sample; total number of weed seeds of all kinds in the sample; germination percentage; pure living seed percentage; and sample date.

“Do not buy seed that does not have a seed-testing certificate available for examination. Look for seed with 90 per cent or higher pure living seed. It should have been sampled within the last three or four months, as the germination of seed sampled a year or more prior to the current date could have dropped by 20 to 30 per cent.”

Some weeds allowed in certified forage seed may be considered Noxious Weeds, so producers should examine the seed-testing certificate for the presence of these weeds to avoid spreading them throughout their fields.

When buying ungraded seed, he adds, producers should insist on obtaining a seed test certificate from an accredited seed lab to determine the purity, germination and weed seed status of the seed being considered. Producers should always ask to have all weed seeds listed by name.

“Equally important to seed quality is the species of seed. Producers should avoid buying mixtures that attempt to suit a broad range of conditions. Monocultures or very simple mixes of well-selected species usually will outperform complex mixes under most conditions. Many forage mixes marketed today have a collection of species that are not complementary in terms of adaptation or production characteristics, and don’t perform optimally in any situation.”

Information on species adaptation, whether alone or in mixes, is available from extension agronomists but, before seeking advice, Tremblay says producers should familiarize themselves with the characteristics of the land to be seeded, the intended use of the forage, and the characteristics of the available species. This will allow them to make informed decisions on what will work best in their own situation.

*Adapted from: Farm & Food Report
Saskatchewan Agriculture and Food
January 21, 2002*

► Farmers find ways to 'go on forever'

By Ian Bell

When speaking with a group of rural Grade 10 students earlier this winter, Gary Davis posed a difficult question: how do you define sustainability?

"I really had to work on them to get an answer."

But the answer he got wasn't a bad one. From their collective wisdom, the students decided that sustainability refers to something that will go on forever.

Last week, Davis was among a group of farmers at a two-day workshop who believe sustainability can work for them on their farms.

For Davis and his family, that meant converting their grain farm near Deloraine, Man., into pasture and hayland, and then using cattle as forage harvesters.

He doesn't want to own a lot of land. Instead, he wants to improve the soil, increase the land's productivity, and earn a living by tapping consumer demand for things like grass-finished beef.

At the same time, he and his family have found a quality of life that they enjoy. And they know of other farm families in their area who have re-examined how they farm and have also made changes to become more sustainable.

Robert Stevenson, a Kenton, Man., producer, is taking sustainable agriculture in another direction by testing the potential of pesticide-free production, or PFP.

The goal is to use less pesticides, which could save money, benefit the environment, and at least partially address public concerns about pesticides. Stevenson presented research that suggests there might also be a small premium for PFP crops.

"A lot of consumers are concerned about pesticide use and don't want excessive pesticide sprayed on their food," Stevenson said.

The idea is to grow a crop without the use of pesticides from the time the crop emerges until it is marketed. Last year, 40 farmers produced PFP crops on 55 fields in Manitoba.

Bob Mazer of Brandon added another twist to the discussion — that intensification is better than expansion.

He is president and chief executive officer of the R.G. Mazer Group, which farms 6,000 acres in Manitoba

and is part owner of several implement dealerships. His goal is to make more revenue per acre, either by diversifying or adding value to what is produced. While that might include growing a higher-value crop like potatoes or adding an intensive livestock operation, he said it could also mean improving a pasture so that it carries more cattle, which avoids the need to buy more land to expand.

When talking about the environment, he emphasized water, and the need for a water management strategy in Manitoba.

"The future of sustainable agriculture lies with how we deal with this precious commodity."

He also cautioned against putting too much hope on government subsidies, because Canada's treasury is not as big as those of the United States and the European Union.

Joe Federowich farms 6,000 acres with his family near Dauphin, Man. Hemp, sea buckthorn and livestock are only a sample of his diversification efforts. He took a step back into the past before talking about his thoughts on where the future might be for sustainable farming.

In the 1970s, he believed his position as a farmer was secure because he was growing crops to feed an increasing world population. The crops were planted, harvested and hauled to the elevator. The marketing was simple.

A lot has changed since then, Federowich said, pointing out opportunities to develop niche markets and to find alternative uses for crops that are no longer just a food. Their fibres and oils also lend themselves to a variety of industrial uses.

"Our job has really shifted."

Part of the job now is to become more market savvy and to find ways to add as much value to each farm commodity as possible, he said.

Western Producer, February 28, 2002

► Some of the Signs Calving Requires Attention

- the cow strains for 40 minutes and no progress is made;
- ninety minutes have passed since the first waterbag appeared;
- only the head or tail emerges;
- the cow has demonstrated more than six hours of anxiety, or walking about with its tail extended, apparently looking for something.

► **Tomato – a mistaken identity**

In 1883, the Supreme Court, in one of its landmark decisions, ruled once and for all that the tomato was a vegetable.

Botanically speaking the Supreme Court was wrong in its decision. The tomato is a fruit, as are watermelon, green pepper, cucumber and squash. A “fruit” is any fleshy material covering a seed or seeds.

Horticulturally speaking the tomato is a vegetable plant. The plant is an annual, nonwoody. Most fruits from a horticultural perspective are grown on a woody plant.


► **Did ya know?**

For a cow to make 9 gallons of milk per day, it has to drink 18 gallons of water per day. (2 gallons of water for each gallon of milk).

► **5 Rules for Getting a Good Forage Stand**

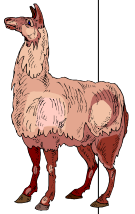
- choose the right variety and species;
- prepare seed;
- seed early;
- seed only for forage;
- seed shallow.

*Agri Digest
December 2000*

 **For Sale**

Llamas for sale

4 left – any reasonable offer will be accepted
Tack available
Phone Mark Trembley for more information
668-4876



Red Wiggler Worms

Composting Worms. \$5 for a 500 ml tub of 50-100 red wigglers & vermicompost.
Phone Randy at 633-4379

► **Turkey Trivia**

- The turkey is a variety of pheasant;
- Christopher Columbus and Hernando Cortez brought turkeys back to Europe. By the mid 1500s, turkeys were being raised in Italy, England and France;
- Ben Franklin suggested that the US national bird be a turkey, not the bald eagle;
- There are approximately 3,500 feathers on a mature turkey;
- Wild turkeys can fly short distances at speeds up to 90 km/hr – so much for the Turkey “Trot.”



InFARMation is...

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If you would like to add your name to the newsletter mailing list, contribute a story, idea or comment on an article in this issue, write to:

InFARMation
Department of Renewable Resources
P.O. Box 2703
Whitehorse, Yukon, Y1A 2C6

Or, contact Tony Hill at 667-3417. Outside Whitehorse, phone 1-800-661-0408. The Yukon culture Branch is located at 10 Burns Road.



Agri-