Grain, Grass & Growth

October2019

www.ChinookAppliedResearch.ca

Catching Up with CARA's Soil Health Lab

CARA's Soil Health Lab (CARA SHL) recently celebrated its first anniversary of accepting soil samples for processing. Dr. Yamily Zavala and Lab Tech Lizanne Booker, with part-time assistance from Technicians Karen Raynard and Jerry Pratt, have processed 800 samples to date. Majority of the samples are part of a provincial Soil Health Benchmark project which CARA has partnered with 10 applied research and forage associations to collect and analyze soil samples from farms across the province. The data base developed from this project will enable monitoring of the impact on soil health by different management practices. Some of the samples processed belong to applied research projects related to crop rotations and soil amendment products, but a number are directly from farmers, ranchers and dairymen from British Columbia to Ontario, all interested in understanding and improving their soil resources.

Yamily's dream of a 'farmer's lab' has become reality. She worked with 2 groups of farmers in hands-on lab sessions following CARA's Soil Health Mini-Conference back in February. The response to these sessions was very encouraging, and showed a need for future workshops. The Soil Health Lab also hosted 8 young 'Soil Biologists in Training' in August. These students spent a day with Yamily learning about in-field soil assessment and soil health sampling protocols. In the lab, they were exposed to soil health constraints in the province and mastered the use of microscopes to view soil micro-organisms (biology). They were very enthusiastic learners and will be invited back for a level 2 camp.

A busload of grades 9 through 12 students from Altario, Youngstown and Berry Creek schools visited CARA SHL October 8 as part of Altario's Ag School of Excellence initiative. While weather prevented planned field activities, the students were given an overview of what CARA is all about and the projects and extension activities which make up the CARA program. Lizanne led the students through the initial stages of receiving and processing soil samples in the CARA SHL. Yamily provided a tour of the CARA SHL and guided the students in using a microscope and viewing various biological components of the soil.

We all look forward to participating in Altario's Agriculture School of Excellence again in the future. View a feature on the initiative on you tube at

youtube.com/watch?v=lTuz19x-nqk.

Damp, Tough Conditions – Tips for Drying Cereal Grains

By Mitchell Japp, MSc, PAg, Provincial Specialist, Cereal Crops and John Ippolito, PAg, Crops Extension Specialist, Kindersley - October 2019

Harvest has been a challenge for many in 2019. Uneven emergence in many fields followed by a number of precipitation events has made for slower harvest progress than normal. Grain has been harvested in a tough state and when the weather improves producers are likely to harvest some more tough grain. Drying by using natural air is a slower process as we enter a period of shorter days and lower daytime temperatures. Storage goals may need to be adjusted to keep the grain cool to prevent spoiling until you have access to a heated air grain dryer.

Grain stored at high moisture is at greater risk of harvest storage pests or fungal growth. Fungi (Penicillium verrucosum) that produce the mycotoxin ochratoxin A require high-moisture conditions. There is no visual damage from this fungus or the mycotoxin. Grain stored at low temperature and low moisture will prevent development of this fungus and mycotoxin. Information on combinations of temperature and moisture content for proper storage can be found on the Canadian Grain Commission website. Proper storage is one of the basic principles of the Keep it Clean campaign.

For producers dealing with tough or damp grain, grain dryers will likely be in demand. It is important to understand that each crop tolerates supplemental heat differently - be sure to follow recommended settings for the crop being dried. It is also recommended to not remove more than six per cent moisture in one pass through a heated air dryer. Maximum safe drying guidelines (summarized from the Canadian Grain Commission) are based on not drying to more than one per cent below recommended moisture content.

Crop	Drying Guidelines (Air temperature in degrees Celsius)
Barley – seed or malt	45 (note – maltsters in Canada prefer barley not be dried by the producer)
Rye	45
Barley – commercial use	55
Barley, Oats, Rye, Wheat for feed use	80-100
Oats – seed	50
Oats & Rye – commercial use	60
Wheat – seed	60
Wheat – commercial use	65 (excessive hear can reduce the suitability of wheat for bread making)

Grain Dryer Components Funding Available

Funding is currently available for Alberta Producers for new and retrofitting Grain Dryer Components. Funding is only available **until MARCH 2020**, be sure to apply early.

Retrofit Grain Dryer Components - 50% Cost Share
(eligible back to 2017)
Hopper Covers, Automated Controllers, New Burners, Heat Exchangers, VSD, PTO to Electric Motor Conversion may be eligible in Retrofits. Eligible in retrofits on case-by-case basis. Applications must include specifications or calculations demonstrating energy savings of the proposed upgrades

New Grain Dryer Components – 50% Cost Share
upgrade options on new dryers that demonstrate clear energy savings over the standard dryer configuration Eligible on new dryers on case-by-case basis. Upgrade options such as heat exchangers, VSD, automated controllers installed as factory options only. Considered if they are an optional upgrade from the standard new dryer configuration and an accompanying specification or calculation demonstrates energy savings. Only cost of the options is eligible, not the cost of the standard dryer

www.alberta.ca/farm-energy-and-agri-processing-program.aspx
Call the CARA office at 403-664-3777 or email cara-3@telus.net to have staff help you navigate the Energy Efficiency & Grain Dryer Component Funding.

8 TIPS TO IMPROVE YOUR FARM SECURTITY

Producers have a lot at stake when it comes to personal property, and their property is often spread across multiple locations, in different buildings or in different fields. You cannot be everywhere at once, but there are still things you can do to be proactive.

1) Install a camera

Digital camera technology is much more affordable and reliable than it used to be. A picture, or even a video, of suspicious activity is valuable evidence. Place your camera somewhere where it will not be noticed by a perpetrator, and set it up so that it captures the angle you want. Consider buying a camera that is motion-detected, which will save on recording time, and the amount of video you need to review if there's ever an incident.

2) Use ample lighting

One of the simplest things you can do is install and maintain good lighting. Security lights and motion-detected lighting can make a big difference, but make sure your lights are working and functioning properly.

3) Post warning signs

If you want to restrict access to your property, make sure a sign is posted, and in a highly visible way. This includes signs about hunting, trespassing, biosecurity, dangerous dogs, etc. A sign can be a good defense, often deterring potential thefts from stopping in your yard.

4) Carry enough insurance

The right amount of insurance will differ with each farm, but you need to consider the many ways you could be liable and at risk. This not only includes your possessions and personal property, but also the transport and use of that property on roadways, on other properties, etc.

5) Protect your computer

In addition to tangible personal property, you also have your farm records and financial data to safeguard. Remember to keep your passwords in a safe place, and when you lose an employee — even a good one — consider changing the passwords that employee may know. You also want to safeguard your computers with the latest virus protection and avoid any obvious security risks.

6) Lock your locks and keep the keys

A lock is only good if it works, and when it's in use. Keys left in the farm truck, or even the tractor, are asking for trouble. You may need to periodically change your locks and keys, if you've terminated an employee.

7) Don't advertise your vacation

Since most robberies take place when people are out of the house, don't make thieves' jobs any easier by telling everyone and their mothers that you'll be away on vacation! It's also a good idea to make sure your house doesn't look uninhabited. Set lights or TV's on a timer, have the post office hold your mail, and ask a friend to come by and pick up the paper. It may sound silly but it could help protect your home from being burglarized.

8) REPORT suspicious activity

If you see something that doesn't look right, let someone know. It could be nothing at all, or it could be a valuable lead that helps prevent a future crime.

Eco-buffers breathe new life into shelter belts

THE WESTERN PRODUCER

September 5, 2019

The concept is designed to match a natural forest with a variety of trees and bushes to create protection and habitats

ROCKY MOUNTAIN HOUSE, Alta. — New tricks are being used to maintain the old idea of shelter belts.

Thousands of trees were planted across the Prairies during the 1930s to control erosion, collect snow and provide wind protection. Commonly, three rows of spruce, poplars and caraganas were planted but the trees were not always compatible.

The new concept of an eco-buffer is designed to match a natural forest with a variety of trees and bushes. It could include spruce, poplars, aspens, rose bushes, saskatoons or raspberries to create a wedge of protection, as well as habitat for animals and insects.

Planting trees is expensive and requires a lot of labour. Proper care is needed at the start so the seedlings survive for decades.

"If you are going to go to all that effort you might as well have something that is going to be there for 60 or 70 years," said Noel St Jean, executive director of the Agroforestry and Woodlot Extension Society.

It is a nonprofit society that puts on workshops and planting projects for shelter belts and riparian areas. The organization does not distribute trees but works with farmers and landowners about developing shelter belts that function for decades.

While many farmers practice no-tillage to seed crops, an eco-buffer needs well-cultivated soil so new trees are able to establish. Many sites have thick thatches of grass on the surface and the trees will die if the roots cannot reach soil.

"The most difficult time for any tree is the first three years. That is when you have the highest level of mortality," St Jean said during an agriculture field day at Clearwater County in west-central Alberta.

Competition from crops, weeds and native grasses can wipe out trees.

Mulches like a plastic cover made of corn meal or wood or hemp fibre mats or other landscape material are laid around the seedlings to keep out unwanted plants for the first year.

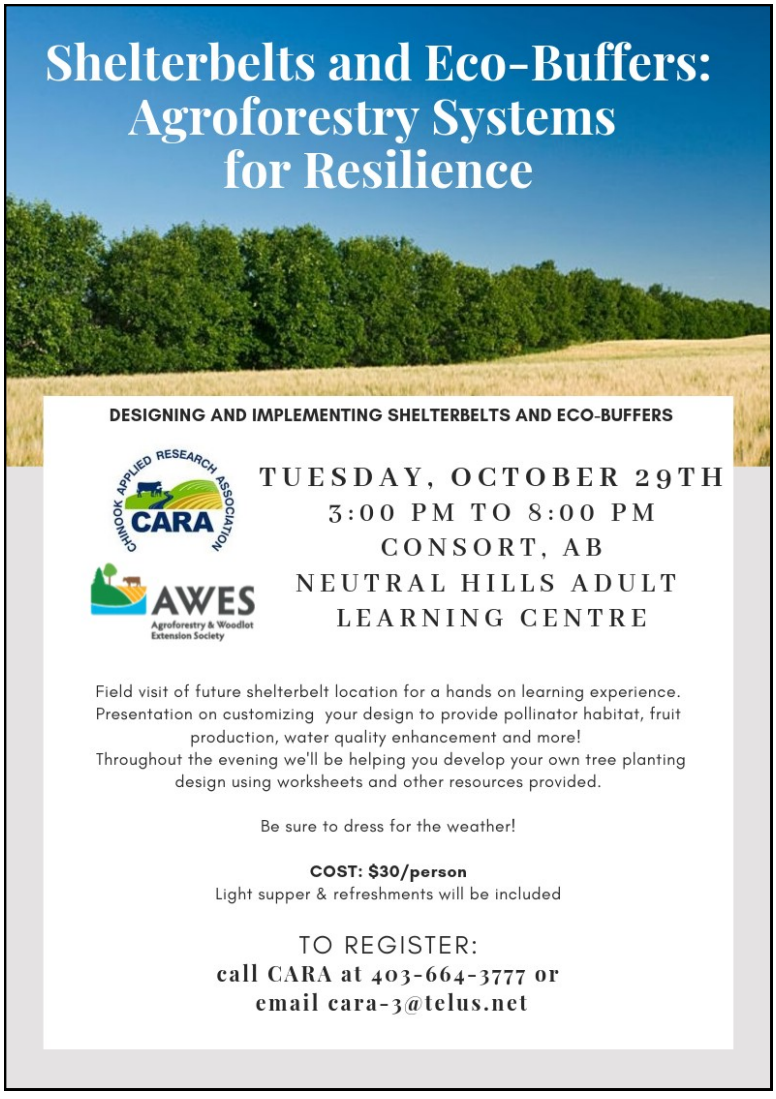
Wood mulch is porous and may introduce weeds. Weeds and grass also grow through.

Metal cages are also available to encircle the seedling to keep out deer. They are good for the first year and after that the tree may outgrow it.

The society grew out of a desire of government, industry and conservation agencies to sustainably manage the 8.9 million acres of privately owned forest in Alberta. It began as a woodlot extension program and eventually transitioned into the society, recognizing the importance of integrating agriculture and forestry.

The society works with landowners on woodlot management, riparian restoration, shelter belts and eco-buffers, silvo-pasture and wildlife habitat enhancement.

Help is also available for project design and tree health assessment.



Mental health checkups are for farmers, too

Feb 25, 2016

Farming is a unique way of life that offers many rewards. But many pressures also come with the territory, from market prices and debt loads to machinery upkeep and repair to weather and dealing with family. And unlike most jobs, farmers can't go home and leave those worries behind.

Stress and mental health

You don't have to be a rocket scientist – nor a psychiatrist – to get an inkling for the impacts that such relentless responsibilities can have on mental health. Many studies show a direct correlation between chronic stress and a multitude of mood disorders, including depression. It also increases the risk of developing a host of health problems, including diabetes, heart disease, cancer and weakened immune systems.

Trouble is, farmers have a reputation for being tough, and learn from an early age to put on a brave face and work through their problems.

"I fooled a lot of people," says Gerry Frieson, a prominent Manitoba farmer who struggled with depression a decade ago and now talks and writes about his recovery.

"Looking back, I now recognize it's ingrained in us that if we just work harder we will get rid of these problems, whether it's financial stress or depression."

Awareness is half the battle

It doesn't have to be that way. Awareness campaigns by various mental health care stakeholders, for example, have helped to both increase understanding and reduce the stigma of mental health conditions. Treatment methods, too, continue to improve, as has the access to mental health services and programs.

"Many more Canadians deal with mental health problems every year than cancer, diabetes and respiratory problems combined," says Mark Henick, program manager with Mental Health Works, an offshoot of one of Canada's oldest charities, the Canadian Mental Health Association.

According to Henick, who became a mental health advocate after a passerby stopped him from jumping off a Cape Breton bridge at age 15, most mental health conditions are treatable.

"The challenge for many people, especially middle-aged and older men," he adds, "is to realize mental health issues are normal." Henick says that realization can make it easier to seek help.

Help is available

While that help is more accessible for people who live in big cities, where most mental health services are concentrated, the Internet is breaking down the distance barriers to rural regions. Saskatchewan, for example, is the first and so far only Canadian province to offer an online counselling service for depression and anxiety called OnlineTherapyUser.ca.

In Alberta, resources are available include local FCSS offices that can be found in Oyen, Consort, and Hanna; Distress Line 403-266-4375; Mental Health Helpline 1-877-303-2642.

Buyer Beware

The quality and quantity of forage in Alberta, really Western Canada and below the 49th parallel, is extremely varied. Some producers have all they need, some are looking to buy and others have feed to sell. Those producers looking to buy forage feed need to be aware of the unwanted or unexpected plants they may be introducing to their farm or ranch through their purchases. It is very important to know what you're buying.

Not all plants are alike. Some plants are beneficial to the farm while others could cause big headaches. A producer may be willing to accept some plants while others are ones that are simply not acceptable. Weeds fall into three categories; common, noxious and prohibited noxious. The latter two categories could create long term problems for control.

It is important for the person growing the forage to know what is growing in the field when the forage is cut and baled. It is also important for the buyer to ask what possible weeds could be in the forage before buying it and introducing it to the land.

If the forage is being bought from the neighbor across the fence, chances are, the weed species are close to the same. Wildlife are a very effective way of spreading seeds throughout the countryside.

If the feed is coming from a significant distance, the weed issues in one area could be very different than the weeds in another and by moving the forage in, weed problems are introduced.

Where the feed is fed during the winter also affects the decision. If the feed is going to be fed on perennial or native grasslands, the weed issue is even more important. The cost of introducing a problem weed to that area could mean the elimination of beneficial plants such as alfalfa, clovers, vetches that are killed or injured if herbicides are required to control the weed(s).

Utilizing the feed on land that will be tilled in the spring MAY reduce the concern and how the field is managed later will be very important.

A feed sample does not identify any of the plant species in the feed. There have been lots of articles about feed testing and that a visual appraisal does not tell the whole story; well this is a situation where a feed analysis won't tell the whole story either. The only way to know what might be in the forage feed is to visually look for weeds or develop a rapport with the seller and feel comfortable enough to take their word.

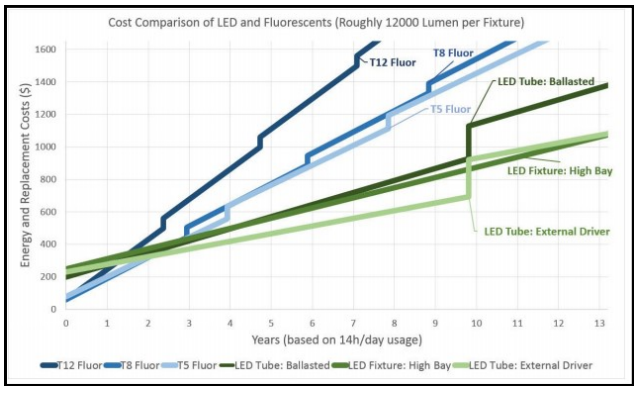
Don't expect rumen digestion, ensiling or composting to eliminate the weed issues. While these processes may reduce the number of viable seeds, they don't guarantee the elimination of seeds that will germinate and create future problems.

As a final note, be sure to get an accurate weight on the bales, especially if they are being priced by the bale and not weighed and sold by the tonne.

Andrea Hanson
Beef Extension Specialist
Airdrie. Sept 17, 2019.

Upgrading to LEDs: What Are the Options?

In the past the majority of farm buildings have been lit by fluorescent tubes, incandescent bulbs, or metal halide lamps. In recent years, Light Emitting Diode (LED) technology has progressed rapidly becoming both more available and affordable than ever before. Many producers want to know what the options are for LED upgrades in order to choose which type would be best for their farms. The lighting industry is moving away from using LED tubes in existing fluorescent fixtures in favor of upgrading the fixtures themselves to UL approved self-contained fixtures with integrated drivers, therefore no rewiring of existing fluorescent fixtures is required (this is explained in greater detail on page 2). This factsheet outlines what is available in the industry currently without promoting a certain brand or company. More information may be required to adequately select a lighting system for your needs. Contact a lighting professional to discuss which options are right for your system.



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High Bay LEDs and LED Fixtures

The lighting industry is moving towards self-contained LED fixtures that replace an entire fixture. For example, instead of just replacing the tubes in a fluorescent fixture with LED tubes, the entire fluorescent fixture is replaced by a self-contained LED fixture. High bay LEDs are available in many different sizes, wattages and lumen outputs making it easier to adapt to your current situation. In general these high bay lights are more effective at ceiling heights of 30+ feet. They can replace fluorescent tube fixtures, overhead High Intensity Discharge lights (HIDs) and others, depending on the building. In order to disperse the light in a desired manner there are many different light shades and reflectors of different angles. These can replace multiple fluorescent fixtures depending on the size and application. There are a variety of different LED fixtures available for any situation. They are generally sealed units with all of the lighting components built in. With a high lumen per watt rating and a long life expectancy these fixtures are ideal in most lighting situations both from a cost effective and an energy efficiency perspective. They come in many different sizes and wattages that can be fit to a variety of lighting systems.

LED Tubes

There are three different types of LED tubes available: 1) Tubes with matching external drivers. These drivers replace the ballasts in fluorescent fixtures, converting the power to an LED compatible voltage. 2) Tubes that are designed to be used with fluorescent ballasts. 3) Tubes that have internal drivers that are meant to be wired directly to the main power source (not recommended). The first two options are recommended and UL approved as a retrofit kit.

External Driver: (Best Performance) The LED tubes used with external drivers are arguably the best option when retrofitting a fixture. The ballasts in the fluorescent fixture are removed and replaced with an LED driver. The driver acts similar to a ballast; it steps the power down to be compatible to the LED tube. The LED driver and tube combination is considered by UL to be a retro-fit kit so once installed it is UL approved and more efficient than the other types of LED tubes.

Ballasted: (Easiest Installation) The LED tubes designed to be used with fluorescent ballasts are the simplest to install. Fluorescent tubes are simply removed and replaced with the LEDs. The downside to this type is that the inefficient ballasts are needed to step the power down for the LEDs, reducing the energy saving potential of replacing the inefficient ballasts with the highly efficient LED external drivers (fluorescent ballasts and LED eternal driver can be compared at roughly 40W and 12W respectively).

T5 Fluorescents

Some high efficiency fluorescents are still competitive in today's market with energy efficiency and therefore remain a viable option for lighting upgrades. For instance a 325W six tube T5 fluorescent fixture (shown on right) has similar lumen outputs to the 245W self-contained LED fixture. Although it is slightly less efficient (90 lumens/watt without the ballast, compared to the LEDs 100 lumens/watt) and has a shorter life expectancy (20,000 hours compared to the LEDs 100,000 hours) it has a cheaper upfront and replacement cost (approx. $200 compared to LEDs approx. $700 upfront cost).

Cost, longevity, and efficiency are factors to consider when choosing a lighting system.
With those three factors in mind, CFL and LEDs are shown to be superior by the data in Table 1. Both of these bulbs are directly compatible with incandescent fixtures. They simply screw in with no alterations needed. With CFLs having a relatively cheaper initial cost and above average energy efficiency and LEDs having best in the market energy efficiency with a more expensive upfront cost, other factors should be taken into account in order to decide which type is best for your system.
The CFL has a few draw backs that LEDs do not have. CFL bulbs do not operate well in cold temperatures and have trace chemicals integrated into the bulb (roughly 5mg of mercury per bulb). Most CFLs are not compatible with household dimmer switches, while most LEDs are (check the manufacturer's specifications to be sure it is dimmable). While LEDs operate well in most common temperatures, they have cooling requirements that necessitate the need for open fixtures. Airtight fixtures limit the air movement to the cooling components and could decrease the performance and the longevity of the LEDs.

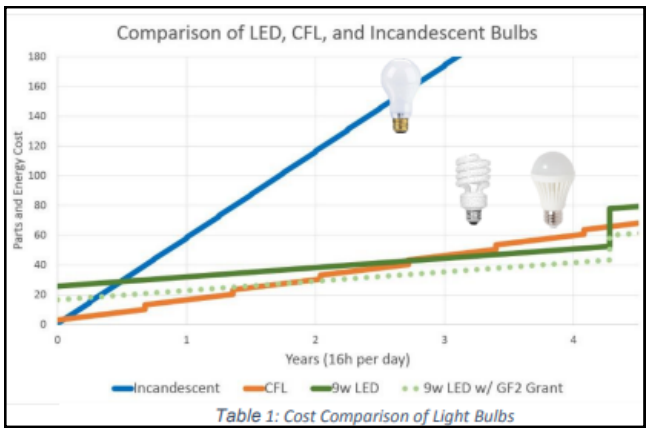

Table 1: Cost Comparison of Light Bulbs

FUNDING IS AVAILABLE TO UPGRADE TO LED LIGHT. PLEASE VISIT CALL THE CARA OFFICE FOR MORE DETAILS.

Upcoming Events

Shelterbelt & Eco-buffers: **Agroforestry Systems for Resilience** October 29 Consort, AB	Field visit of future shelterbelt location for a hands on learning experience. Presentation on customizing your design to provide pollinator habitat, fruit production, water quality enhancement and more! Throughout the evening we'll be helping you develop your own tree planting design using worksheets and other resources provided.
10th Annual Cattlemen Clinic November 18 Oyen, AB	Join us for our 10th Annual CATTLEMEN CLINIC Getting Through The Winter on Low Feed Supplies Importance of Body Conditioning and more For more information and to register please call CARA at 403-664-3777 or email us at cara-3@telus.net
Feed What You Need & CowBytes Workshop November 25 Handhills, AB ——— November 27 New Brigden	JOIN US at one of our morning Feed What You Need seminars to learn Strategies For Getting Through The Winter on Low Feed Supplies and a discussion on Mineral Supplements: are custom blends worth it? JOIN US in the afternoon for the CowBytes Workshops to learn how to use the CowBytes ration balancing software. The program will allow you to balance all the major nutrients and micro-nutrients. LIMITED SEATS AVAILABLE for the afternoon workshop. For more information and to register please call CARA at 403-664-3777 or email us at cara-3@telus.net
Western Canada Conference on Soil Health & Grazing December 10-12, 2019 Edmonton, AB	Conference theme: Our Future Is In The Soil Www.absoilgrazing.com Sorry the conference is SOLD OUT, but watch for info on video recordings following the conference.

CARA Soil Health Lab

VISIT www.CARASoilHealthLab.ca to have your Soils Health analyzed to help your farm become more sustainable

CARA's Soil Health Lab Update
Watch for updates as we move forward in the development of our NEW Soil Health Lab.
www.CARASoilHealthLab.ca

More of a Digital Person?

If you would like to receive this newsletter via email, please contact Olivia at cara-3@telus.net

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