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THE VERDANT ELEMENT

Lakeland Agricultural Research Association

Deepening Communities

To quote Paul Born, "We live in community. We need one another. Community has the capacity to improve our physical, mental, and economic health as well as our overall sense of happiness and fulfillment. It has the power to unite us in a common bond as we work together for a better world."
A few central things we know about community in the practical sense: It's about people: People form and maintain communities to meet common needs. Members of a community have a sense of trust, belonging, safety and caring for each other. People live in multiple communities: People participate in multiple communities within any given day. Meeting common needs is the driving force behind the creation of associational groups. Communities within communities: There may be many communities that live within a single neighbourhood, such as faith communities, hobby communities, gardening communities and sport communities, to name just a few. Community has formal and informal institutions: Communities form physical institutions to help members meet their needs, such as schools, community centres, libraries, food banks and credit unions. Just as important as the formal are the informal institutions (associations), such as garden clubs, agricultural societies and neighbourhood associations. Communities are organized in different ways: Culture, religion, age, and purpose all help to shape and form community.

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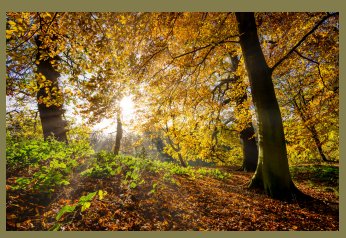


Poisonous Plants in Hay and Silage - Barry Yaremcio

There are many plants that are poisonous to animals. These plants can cause photosensitivity, abortions, birth defects, contact irritation, or have mycotoxins present that reduce animal performance or cause a quick death. When forage is plentiful, animals avoid these plants on pasture because they may taste bad, have physical barriers such as barbs to discourage consumption, or are in areas where cattle typically do not graze.

But with dry conditions in the last number of years, and virtually no feed carry over; hay is made in ditches, edges of dry sloughs and from areas that are not accessible in wetter years. These areas may contain poisonous plants (weeds) that could be present in silage or hay that was made. Some of these plants are still poisonous.

Some of the most common weeds that cause problems are:

Seaside Arrowgrass and Marsh Arrowgrass are found in salt marshes and in saline soil around sloughs. These plants (along with saskatoons and chokecherries) contain hydrogen cyanide (triglochinin) in the stems and leaves which causes poisoning. Death is caused by respiratory failure. Consumption of 7.7 pounds of fresh arrowgrass can kill a 1100 pound animal within 30 to 60 minutes. Hydrogen cyanide does not dissipate with time and maintains its' toxicity in stored hay or silage.

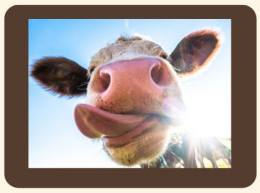
Death Camas is a plant that starts growing early in the spring. It can grow throughout the pasture especially in draws and depressions. All parts of the plant are poisonous. Highest concentrations of the steroid alkaloids (Zygacine) occur in the vegetative to bud stage. Ingestion of 0.2 kg of fresh material can kill a 50 kg sheep. Death is caused by cardiovascular failure. The toxins persist in cut hay.

Water Hemlock is considered the most poisonous plant found in low areas. The highest concentration of the toxin (Cicutoxin) is contained in the root and in the lower parts of the stem. The brown liquid that is found throughout the plant is also poisonous. When the plant is consumed, the root is often pulled out of the wet soil and is ingested. The cicutoxin acts on the central nervous system, causing convulsions, heart failure and death. Death can occur within 30 minutes of consumption. The toxin can also kill humans. Do not attempt to remove these plants without full protective equipment. Even when the plant is fully mature, the toxins remain in the plant and are a problem in hay.

There are three types of **Larkspurs** that are a concern. Tall Larkspur, Low Larkspur and Plains Larkspur. Tall Larkspur is found at higher elevations and the other two Larkspurs in lower elevations. These plants start to grow early the growing season. Mainly in areas where there is good moisture. There are many different alkaloids produced in the plant which cause muscular paralysis which leads to respiratory failure, bloat and often death. The concentration of alkaloids doesn't decline with maturity and may even increase in the flowers and pods. The alkaloids are present in mature plants that may be in hay or silage.

Vetches are plants that cattle like to eat. If it is in hay or silage, cattle can selectively eat these first. Milk Vetch is safe for animals to consume at any stage of growth. Unfortunately, mature Hairy Vetch and Mountain Vetch with developed seed are toxic. The seeds contain miserotixin, or 3-nitropropionic acid (a glycoside) depending on species. Toxicity is caused by lung problems and inability to breathe which slows metabolism. Nitrate / nitrite toxicity can also occur.

Join us for a day of learning about technological innovations and research that can have huge impacts on your livestock operation



Precision Ranching
Learn about virtual fencing, drones, GPS eartags, pedometers

Herd Health Innovations
Lidocaine infused castration bands, long action grass implants, neonatal mineral and vitamin supplementation

Tools for the Ranch
Range Ward (Razer Grazer), offsite watering systems

Speakers include: Dr. Ed Bork, Dr. Susan Markus, Dr. Brenda Ralston, Andrea Hanson, Neil Thorsteinson, Zoetis, and more!

Check out the latest tech at the trade booths

ASHMONT AGRIPLEX
NOVEMBER 23, 2022
10 AM TO 4:30
LUNCH PROVIDED WITH REGISTRATION

Cost: $10
To register call 780-826-7260 or email sustainag@laraonline.ca

LARAONLINE.CA

LAKELAND AGRICULTURAL RESEARCH ASSOCIATION PRESENTS

JOEL WILLIAMS

What's New In Soil Health

Including: cover crops, plant species diversity, intercropping, and nitrogen interactions with soil organic matter

November 24th, 2022
7 PM

TO REGISTER FOR THIS WEBINAR:
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10 AM - 4:30 PM
FLAT LAKE HALL
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Upcoming Events

NOVEBMER 17TH: LESLEY KELLY; WHEN STRESS LASTS MORE THAN A SEASON

NOVEMBER 18TH: YOUNG FARMER SOCIAL

TUESDAY NIGHTS IN NOVEMBER: FORAGE WEBINAR SERIES

Environmental Farm Plans

The environment is becoming a more prominent issue. It is a large factor in marketing agriculture and food products in today's global markets. Consumers are demanding more transparency and are demanding high quality and safe products. Reputation of food safety is critical to retain and gain access to domestic and international markets.

Environmental Farm Plans (EFP) provide a tool for producers to self analyze their operation and identify environmental risks, current standards, areas for improvement and also highlight what they are doing well.

Having a completed EFP allows producers to access different funding opportunities, such as the Canadian Agricultural Partnerships Programs or OFCAF. It is also useful in product branding that demonstrates specific environmental standards.

The EFP is a living document and should be reviewed and updated periodically.

If you wish to complete an EFP or have any questions regarding EFP please contact Kellie at the LARA office at 780-826-7260

Building Communities continued

The assortment of communities that exist are determined by people's needs and desires for that sense of trust, belonging, safety and caring for each other.

Today, many elements are affecting our communities such as: change to family and social structures, work and time pressures, technology, costs associated with being socially connected, and individualism - from "we" to "me". These pressures can create a lack of community that can impact our lives in a negative way. Strengthening social ties is the necessary foundation for positive community change: it contributes to community resilience, and positively impacts individual health and well-being. The complex challenges facing communities require deep community.

Like a morning sunrise reminds us of the dawning of another day filled with new possibilities, so too can community provide us with the support and strength to navigate our challenges and move forward one day at a time.

To learn more about building the case for deepening communities: https://www.tamarackcommunity.ca/hubfs/Building-the-Case_What-Is-Community.pdf

Salt Tolerant Tree Species - Toso Bozic

Planting trees along roads and driveways requires additional considerations due to potential damages and injuries due to salt that will occur during their lifetime. Trees affected by salt will have a stunted appearance and reduced growth; as well as many will succumb due to higher dose of salt in the soil or on the trees themselves. It is very important to plan ahead and plant trees that are best suited to handle a higher amount of salt that they can be exposed to.

You must also understand the biology, growth, and site requirements for each species planted along roads or driveways to ensure their survival. It is crucial to plant more salt tolerant species along roads and driveways as they will protect the less salt tolerant species from salt damages. Less winter hardy plants are more susceptible to salt injuries. If you plant trees along very busy roads, start with salt tolerant shrubs as a first line of defence followed by salt tolerant trees and furthest away, the trees that are the least salt tolerant. A little planning ahead will save you a lot of headaches down the road and will allow you have a long-lasting shelterbelts/trees around your property.

It is important to keep in mind that all species of plants, shrubs and trees are affected by salt; some are able to tolerate greater salt levels than others but it will still affect them. There are NO tree or shrubs suitable for high and extremely high saline soils or in an area where annual road de-icing or dust control will accumulate high levels of salt in the soil. Some of the more salt tolerant tree and shrub species can be very invasive and it is crucial to check with local authorities if you are allowed to plant these species on your property. Trees and shrubs are rated to salt tolerance as high, medium and low:

High salt tolerance: Silver buffalo berry and Sea buckthorn Russian olive, Rocky Mountain juniper and Austrian pine

Medium salt tolerance: Caragana, Spreading juniper, Snowberry, Villosa lilac, Hawthorn, Chokecherry, Mountain Ash, Ponderosa pine, Green ash, Manitoba maple, Siberian elms, Laurel leaf willow, and some apples

Low salt tolerance: Raspberry, Rose, Dogwood, winged euonymus, Spirea, Colorado blue spruce, Douglas fir, balsam fir, Cottonwood, Aspen, Birch, Little-leaved linden and Larch

For more information:
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ISA Certified Arborist
CERT ID: PR 5356A
Phone (780) 712-3699
bozict@telus.net
www.yardwhispers.ca or

ON-FARM CLIMATE ACTION FUND - OFCAF

The Agricultural Climate Solutions On-Farm Climate Action Fund (OFCAF) is an initiative to help farmers tackle climate change. The program will provide financial support to producers to accelerate their adoption and implementation of on-farm Beneficial Management Practices (BMPs) to lower Greenhouse Gas (GHG) emissions, support production efficiency, sustainability and resiliency on their farm operations. To assist producers with their adoption of new BMPs, the program will offer producers resources to support BMP implementation and provide BMP design recommendations. The objective of OFCAF is to support Producers in adopting Beneficial Management Practices (BMPs) that store carbon and reduce greenhouse gases, specifically in the areas of:

1. Nitrogen Management
2. Cover Cropping
3. Rotational Grazing

These practices also provide other environmental benefits such as improved biodiversity and soil health.

MAXIMUM AMOUNTS FOR ELIGIBLE EXPENSES

· Applicants are eligible for multiple projects to a combined maximum grant payment of $75,000
· Applicants are eligible for a maximum 85% reimbursement of eligible cash expenditures across the three BMP target areas
· Applicants must pay for 100% of the upfront costs with no payment for in kind

NITROGEN MANAGEMENT Eligible expenses

· BMP action plan development, or specialized agronomic support provided by a PAg or CCA
· Costs of soil testing, soil mapping, and tissue testing
· Higher cost of the portion of nitrogen fertilizer switched from the fall to the spring application window
· Cost of fertilizer application equipment (rental or custom) to allow for banding, side dressing and injection
· Price difference between standard nitrogen fertilizer and nitrogen fertilizer with nitrification inhibitor
· Custom application costs of synthetic nitrogen fertilizer replacements (manure, compost, or digestate amendments) on cultivated land where it has not been applied in the past 10 years
· If transitioning to manure, rental or custom costs associated with spreading, using hoses or equipment for shallow incorporation (to avoid volatilisation)
· Seed and planting costs (custom or equipment rental) to increase perennial legume crops in rotation

ON-FARM CLIMATE ACTION FUND - OFCAF

COVER CROPPING Eligible expenses

· Costs related to BMP Action Plan development, or specialized services provided by a PAg or CCA
· Seed costs for regionally- and commodity- appropriate seed as recommended by a Professional Agrologist or Certified Crop Advisor
· Planting costs (custom rates or equipment rental)
· Cover crops underseeded with the main crop or seeded following harvest with sufficient time for adequate growth prior to winter
· Full season cover crops (annual, biennial or perennial in a rotation, e.g. non-marketable crops that do not take land permanently out of production), or underseeded within a main crop
· An expansion of a BMP to a different field where it has not been used before is eligible

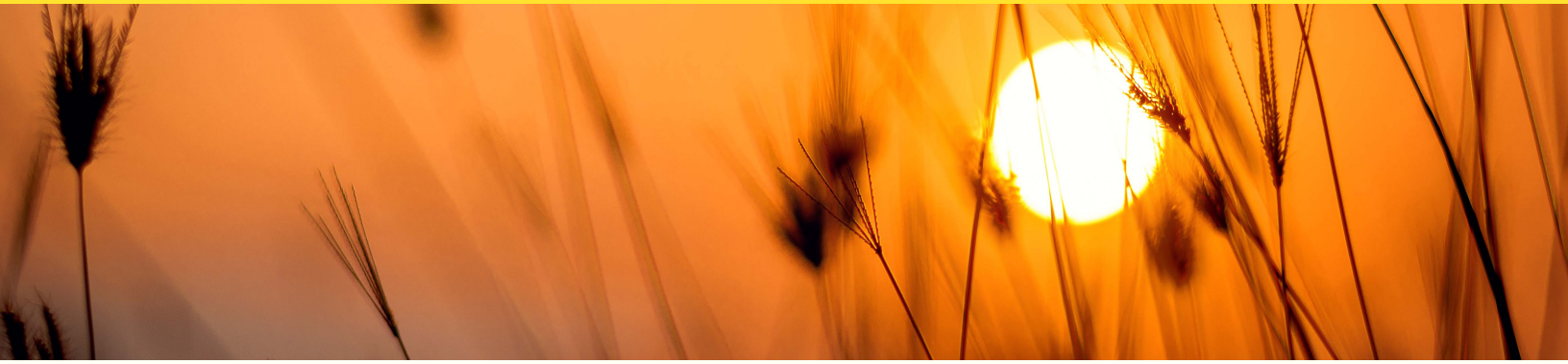
ROTATIONAL GRAZING Eligible expenses

· BMP Action Plan, grazing management plans, technical assessments or engineered designs
· Rotational grazing materials and installation (e.g. cross fencing, wildlife friendly fencing, temporary fencing, energizers, shallow water pipelines less than 15" (38 cm) and waterers, including remote watering systems when powered by renewable energy)
· Improved pasture composition (seeding, custom planting or equipment rental costs for alfalfa, sainfoin, etc.)
· Forage testing (fall or winter)
· An expansion of a BMP to a different field where it has not been used before is eligible

Online applications via ARGO, RDAR's Grant Management System will be accepted from August 4, 2022 – November 7, 2022 for this fiscal year. Projects for this fiscal year must be completed with invoices submitted by January 6, 2023. Applications for project funding for 2023 will open up in February.

A completed Environmental Farm Plan is a requirement for payment of this program. Please contact LARA to have yours completed.

For more information on this program go to: https://rdar.ca/ofcaf



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Sustainable farming encompasses a wide range of practices and principles; combining environmental stewardship with profitability and ensuring that the family farm will be there for generations to come.

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Poisonous Plants in Hay and Silage **Continued from Page 2**

Leafy Spurge is a contact irritant. They do not create metabolic problems but rather the toxin (phorbal esters) that creates skin rashes, gastric inflammation and severe irritation that does not rely on sunlight for activation (not photosensitivity). One example; is a rash that forms around the mouth when spurge is consumed. At the same time, the ingested spurge causes an irritation and inflammation in the mouth, and digestive tract. The esters remain in the plant even if it is mature and remains in hay or silage.

Tall Buttercup is also a contact irritant. A glycoside (ranunculin) and an enzyme produce an irritant oil when ingested plant material is digested and cell contents are released in the rumen. When activated, the combination causes irritation of the digestive system, abdominal pain and diarrhea. Fortunately, during harvest either for hay or silage the cellular tissue is damaged releasing the enzyme that combines with the glycoside resulting in most of the ranunculin to be released and is generally not a problem in stored feed.

Kochia is a weed that is often used for winter forage. It is a plant that can accumulate nitrate and cause nitrate poisoning. The secondary problem with kochia is that there can be high amounts of oxalates present. Oxalates bind calcium that is in the ration. This causes a calcium : phosphorus imbalance which reduces metabolic efficiency. If feeding kochia, limit the inclusion to 20 – 25% of the total dry matter intake to reduce the risk. Also, increase the amount of calcium in the ration to offset the tie up by the oxalates.

There are many more environmental conditions that cause animals distress or cause death.

High nitrates in annual cereal crops caused by hail or a light frost can become toxic. Excessive sulfur consumption can cause polio. This is a cumulative effect of both sulfur in the feed and in water. This illustrates that toxins can be present in many forms not only in weeds.

Some of the information in this document was found in the publication authored by Majak, Brooke, and Ogivie. It is worth the time to review.
https://www.beefresearch.ca/files/Stock_Poisoining_Plants_of_Western_Canada.pdf

Additional information was obtained from the USDA Poisonous Plant site https://www.ars.usda.gov/pacific-west-area/logan-ut/poisonous-plant-research/docs/arrowgrass-triglochin-maritima-and-t-palustris/