Pest control options for local producers

The Lethbridge County Sustainable Agriculture Tour is going to be a great event to come out to. As I am writing this there are 90 folks signed up, can’t wait. Like any year this one seems to have really moved along. This newsletter is highlighting some really good soil health principles. Also, I have included an article on Enviro Span Modular Culvert systems. I see plenty of opportunity for producers to adopt this technology. So have a look and if you want more information feel free to give me a shout.

Page 2 provides information on how to obtain skunk traps from the county. As well it explains that if you are interested in doing some clubroot scouting after harvest, we can help show you how to do that through the protocols that have been set up.

On page 3 I included an article by Jay Fuhrer. He is a Soil Health Specialist employed by the Natural Resources Conservation Service in Bismarck, North Dakota. Graduating from North Dakota State University in 1976 with a degree in Agricultural Economics. He has boots on the ground the last 37 years working with cropping systems, grazing systems, cover crops, and gardens. His information is very relevant even for you irrigators out there.

On page 4 there is an article on Enviro Span Modular Culvert systems. This can be a great tool for producers in this county. Many of you have had to create crossings over irrigation drainage ditches to be able to get to your fields. As well, sometimes producers must travel on a mile or two of grid roads while hauling manure from storage to fields just to get around the drainage ditches. Utilizing this new technology can help you stay away from the grid roads when hauling manure and offer irrigation pivots a crossing at a fraction of the cost to install a concrete crossing.

Page 8 talks about what producers can do to voice their concern about the possible cancelation of Maxim 2% Liquid Strychinine for gophers. We deal with gophers every year and some years are worse than others. The cancelation of this product greatly reduces the tools that producers need to maintain a sound integrated pest management program. Type the link above into your computer, it will take you to the Government of Canada website so you can get involved. This will also be on our County website.

Lethbridge County Sustainable Agriculture Tour

September 26th, 2018

Lethbridge County hosts an information tour on:
Sustainable Agriculture Practices implemented by the agricultural industry in Lethbridge County

The tour bus will leave at 8:30 a.m. sharp from the Picture Butte Community Center parking lot, 607 Highway Ave, Picture Butte and will end at 3:30 pm.
Registration is from 8:00 - 8:30 am. Please wear closed toe footwear. Lunch will be provided.

Tour stops will include:
- Noble Meadows Farm - Family owned Goat Dairy and Creamery
- Dairy Farm Featuring Four Robotic Milking Machines
- Sugar Beet row crop machinery and harvesting
- Prairie Hill Fruits Ltd
- Enviro Span Modular Culvert systems and much more

Please RSVP by September 12, 2018 by calling (403) 732-5333 or call Dwayne Rogness Phone: (403) 380-1598 Email: drogness@lethcounty.ca

Gary Secrist
Agriculture Fieldman

Dwayne Rogness
Rural Extension Specialist (RES)
403-380-1598

Kevin Virostek, Foreman/Weed Inspector
SKUNK TRAPS

Skunk traps are free to use for county residents.

Please note that Agriculture Service Board Staff will not empty the traps, the person borrowing the trap will be required to dispose of any skunks caught in the trap.

THESE TRAPS ARE FOR SKUNK REMOVAL. The skunk traps can be booked by calling the Agriculture Service Board at (403) 732-5333.

CLUBROOT

Clubroot is an infectious disease that can significantly reduce yield and quality, or even destroy a susceptible crop entirely, if infestation levels are high. Although clubroot itself is not new to Alberta, the first case reported in farm-grown canola in western Canada was in the Edmonton area in 2003, and it has continued to spread since.

If you are interested in scouting your canola fields after harvest give us a call. The Ag Service Board can instruct you on the protocols for scouting harvested canola fields and we are eager to help any of our producers.
BUILD STRONG FOUNDATION
with 5 Soil Health Principles

- By Jay Fuhrer, Natural Resources Conservation Service soil health -

Soil health is “the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals and humans.” The soil health foundation consists of five principles: 1) Soil armor; 2) minimizing soil disturbance; 3) plant diversity; 4) continual live plant/foot; and 5) livestock integration. These principles are intended to be applied in a systems approach, maximizing the soil building impact.

1. Soil armor
Soil armor - or cover - provides numerous benefits for cropland, rangeland, hayland, gardens, orchards, road ditches and more.

Let’s take a closer look at some of the soil armor benefits:
- **Controlling wind and water erosion:** Armor protects soil from wind and/or water as it moves across the soil surface. It holds the soil in place, along with valuable soil organic matter and nutrients.
- **Evaporation rates:** Armor reduces the soil evaporation rates, keeping more moisture available for plant use.
- **Soil temperatures:** Armor helps soils maintain a more moderate range of temperatures, keeping soil warmer in cold weather and cooler in hot weather. Like us, the soil food web functions best when soil temperatures are moderate.
- **Compaction:** Rainfall on bare soils is one cause of soil compaction. When rainfall hits the armor instead of bare soil, much of the raindrop energy is dissipated.
- **Suppresses weed growth:** Armor limits the amount of sunlight available to weed seedlings.
- **Habitat:** Armor provides a protective habitat for the soil food web’s surface dwellers.

Soil armor should be evaluated by looking straight down at the soil surface and asking yourself, “What percent of the soil is protected by the residue?” Erosion needs to be controlled before you can start building soil health. The goal is to cover 100% of the soil with a green plant/residue during the growing period and residue during the dormant periods.

2. Minimizing soil disturbance
Soil disturbance can generally occur in different forms:
- **Biological disturbance**, such as overgrazing, which limits the ability of the plants to harvest CO2 and sunlight.
- **Chemical disturbance**, such as over application of nutrient and pesticide, can disrupt the soil food web functions.
- **Physical disturbance**, such as tillage, which we will focus on in this article.

A typical soil is approximately 45% mineral (sand, silt and clay); 5% soil organic matter; 25% water; and 25% air. The water and air portions exist in the pore spaces between the soil aggregates. Over time, tillage implements reduce and remove the pore spaces from our soils, restricting infiltration and destroying the biological glues that hold our soils together.

Residual armor after corn planting was completed at Menoken Farm, located just east of Bismarck, N.D. At a minimum, the armor should last until the new crop is fully canopied. How quickly this residue decomposes depends on the carbon/nitrogen ratio of the residue. High-carbon residue (e.g. wheat at 80:1) decays much slower than low-carbon residue (e.g. pea at 29:1). When we supply the soil surface with a diversity of residues from one year to the next, we can achieve the benefits of soil armor and still maintain a fully functioning nutrient cycle.
2. Minimizing soil disturbance

Ultimately, tillage results in one or more of the following:
- **Water erosion**: Transporting soil, nutrient and water to off-site locations, which negatively impacts water quality and quantity
- **Wind erosion**: Transporting soil and nutrient to off-site locations, which negatively impacts air quality, human health and animal health
- **Ponding water**: Staying saturated on the surface for long periods of time, a result of reduced infiltration and increased runoff
- **Crusting easily**: Restricting plant emergence
- **Soil organic matter depletion**

Can we reverse the impacts from tillage and improve soil function? Yes, we can. Minimizing soil disturbance is a good start to rebuilding soil aggregates, pore spaces, soil glue and soil organic matter. This is an essential step for long-term soil productivity.

3. Plant diversity

The journals of Lewis and Clark describe the northern plains landscape as having abundant plant diversity. Numerous species were observed, working together as a plant community to provide forage for large herbivore populations. Our soils where built over geological time in this environment.

However, settlement of the plains brought agriculture, which resulted in the polyculture perennial landscape being replaced by a monoculture annual landscape. Where the soil food web used to receive carbon exudates (food) from a diversity of perennial plants harvesting sunlight and carbon dioxide, it now receives carbon exudates from only one annual plant at a time.

We can start to mimic the original plant community by using crop rotations, which include all four crop types. Diverse crop rotations provide more biodiversity, benefiting the soil food web. This, in turn, improves rainfall infiltration and nutrient cycling, while reducing disease and pests.

Crop rotations can also be designed to include crops that are high water users; low water users; tap root; fibrous root; high-carbon crops; low-carbon crops; legumes; and non-legumes, to name a few.

The following lists the four crop types with a few common crop examples of each:
- **Warm season grass**: Corn, sudan and millet
- **Warm season broadleaf**: and soybean
- **Cool season grass**: Wheat, oat, barley and rye
- **Cool season broadleaf**: Flax, pea and lentil

Diverse crop rotations mimic our original plant diversity landscapes. They are important to the long-term sustainability of our soil resource and food security.
4. **Continual live plant/root**

Our perennial grasslands consist of cool-season grasses, warm-season grasses and flowering forbs. Consequently, adaptable plants are able to grow during the cool spring and fall weather, as well as the summer heat. This allows for a continual live plant feeding carbon exudates to the soil food web during the entire growing season.

Our cropland systems typically grow cool- or warm-season annual cash crops, which have a dormant period before planting and/or after harvest. Cover crops are able to fill in the dormant period and provide the missing live root exudate, which is the primary food source for the soil food web.

Cover crops may be incorporated into a cropping system as annuals, biennials or perennials. Starting on a small acre scale will allow farmers and ranchers to find the best fit for their operation.

Cover crops can address a number of resource concerns:

- Harvest CO2 and sunlight, providing the carbon exudates to the soil food web
- Building soil aggregates and pore spaces, which improves soil infiltration
- Cover the soil, controlling wind and water erosion, soil temperature and rainfall compaction
- Catch and release of inorganic nutrients, improving water quality
- Salinity management
- Pollinator food and habitat
- Weed suppression
- Wildlife food, habitat and space
- Livestock integration
- Adding crop diversity
- Adjusting the cover crop combination's carbon/nitrogen ratio, to either accelerate or slow decomposition

5. **Livestock integration**

Animals, plants and soils have played a synergistic role together over geological time. In recent years, animals are playing a reduced role due to being placed in confinement and fewer farms now include livestock as part of their overall operation.

Why do we want to return livestock to the landscape?
There is a unique new stream, canal, drainage, or pipeline crossing product called the Enviro Span Modular Culvert System. The product was developed to address many age old and recurring problems with stream crossings. These include; the virtual elimination of both in-stream and stream bank disturbance, simplification and cost reduction of installation and shipping, ease of handling, elimination of toxins, extension of life span, reduction of permit requirements, reusability, and increased endurance under extreme conditions.

Old culvert technology can be both heavy and awkward to handle. Enviro Span is lightweight and stackable so that a full sized (7’ diameter) crossing can be transported on a pickup truck or small trailer for installation. A full seven foot diameter Enviro Span arch comes in modules that are easily handled and placed by two people in the field. Far less equipment and manpower are required to install Enviro Span. A backhoe is the most efficient. For farm applications, a mini hoe, front end loader or a skid steer will do the job.
Once in the field, Enviro Span is extremely easy to install due to its light weight, ease of handling, and elimination of cumbersome footings and fasteners for assembly. Sensitive fish bearing streams can be crossed in any season as no excavation either in-stream or on stream banks is required for many crossings. Envirospan modules come as either straight or angled pieces, designed to follow the natural curves of a stream without requiring channelization. Since it is modular, a crossing can be made as narrow or wide as is needed without any custom sizing.

Enviro Span’s new material technology is long lived and reusable and allow it to be easily removed and re-used many times over. With Enviro Span, the user now has an asset that becomes part of a stream crossing inventory to be used over and over again for many years, in many places.

When comparing Enviro Span with older, conventional culvert technology, Enviro Span offers many distinct advantages:

1. **Transportation and Handling** – Enviro Span is lightweight, modular and stackable. **Installation** – The product can be installed very quickly... often in less than 4 hours for a logging road crossing.

2. **Strength** – Enviro Span is designed and tested for the maximum loads found in the logging, oil and gas, and mining industries (150 tons on a five axle log truck or 400 tons on an ultra class mining truck).

3. **Longevity and Reusability** – Enviro Span is long lived and reusable.

4. **Environmental Responsibility** – Enviro Span has a lighter footprint and low disturbance.

   **Enviro Span... a great irrigation and farm solution.**

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5. Livestock integration

- Balanced carbon/nitrogen ratio: Fall or winter grazing to convert high-carbon annual crop residue to low-carbon organic material balances the carbon/nitrogen ratio and manages our crop rotation residue for no-till seeding.
- Better regrowth: Spring or summer grazing annual and/or perennial plants with short exposure periods followed by long recovery periods allows the plants to regrow and harvest additional sunlight and CO2.
- Reduced nutrient export: In lieu of transporting feed to a feedlot, we can reverse the roles and have the livestock graze the material in place, reducing nutrient export from our cropland and hayland fields. This recycles the majority of nutrients, minerals, vitamins and carbon.
- Managed weed pressure: Grazing in lieu of an herbicide helps manage weed pressure.
- Higher nutritional diet: Grazing cover crops and/or crop residues allow us to take the livestock off the perennial grasslands earlier in the fall, extending the grass recovery period and providing a higher livestock nutritional diet.
- Reduced livestock waste: Grazing reduces livestock waste associated with confinement, helping manage our water quality and nutrient management concerns.

How do we return livestock to the landscape?
- Winter and fall grazing cover crops and annual crop residues.
- Summer grazing a full season cover crop, allowing adequate plant recovery, followed by a second grazing during the fall or winter.
- Winter feeding on hayland fields by rolling out bales or bale grazing.
- Seed rotational perennials, graze and manage as part of the crop rotation.

Health Canada is proposing to cancel the registration of Maxim 2% Liquid Strychnine Concentrate

Health Canada is proposing to cancel the registration of Maxim 2% Liquid Strychnine Concentrate, and to require removal of ground squirrel use from the label of S.A.R.M Gopher Poison R.T.U. Strychnine is a registered pesticide used by growers to control ground squirrels.

Following a scheduled re-evaluation under the Re-evaluation Program, Health Canada’s Pest Management Regulatory Agency is consulting Canadians on the proposal to cancel the use of strychnine for ground squirrel control due to effects on non-target animals. This review identified environmental concerns in the potential poisoning of non-target animals, including species at risk such as the swift fox and burrowing owl. There is concern mitigation measures would not be practical.

CONSULTATION ON STRYCHNINE – How to get involved