

February 2017

Volume 11, Issue 1



Have an interesting topic you want discussed in the Newsletter or municipal meeting? Send suggestions to Asst. Agricultural Fieldman Tanis Ponath, asb@mdwainwright.ca or 780-842-4454

Spray Truck

For Sale

The M.D. of Wainwright is again accepting "sealed priced proposals" for lot 1, municipal spray truck sold with sprayer component. In addition to lot 1 we have various sprayer components and parts available. If you would like more information please visit www.mdwainwright.ca or contact James Schwindt at 780-842-4454.



Alberta Agriculture has launched a new tool called the Soil Information Viewer that helps producers understand the soils of the province. Visit the Alberta Agriculture website at www.agric.gov.ab.ca

Municipal District of Wainwright No.61

The Municipal Agricultural Connection

Alberta Agriculture and Forestry



Partners in Rural Conservation
www.mdwainwright.ca



2nd Annual Livestock Workshop for Ladies

Hosted by the M.D. of Wainwright

Who: LADIES!!! Young, old, new to experienced ranchers.

What: Enjoy a fun and educational night out on us!

Where: Wainwright Elk's Hall (Upstairs)

When: February 21 5:30 p.m.—9:00 p.m.

Why: Build on last years calving workshop, increase your knowledge and learn about new hot topics in Alberta's Ag Industry.

Featured Speakers

*Dr. Lacey Fowler, Viking Vet Clinic:
Vaccinations and What you Need to Know*

*Barry Yaremco, Beef and Forage Specialist
with Alberta Agriculture and Forestry:
Nutrition for Pre/Post Calving*



Please contact Tanis Ponath Asst. Agricultural Fieldman with the M.D. of Wainwright at 780-842-4454 to register. Please register by Feb 17th.

Weed on the Rise: Absinth Wormwood

AKA Common Wormwood or Madderwort



Absinth wormwood is a perennial herb that infests disturbed areas such as abandoned cultivation, heavy traffic areas and pasture that has been damaged from too early or heavy grazing. It grows in soils with ample moisture, loamy to clay-loam soils and gravelly soils. It grows from a woody base with multiple stems to form a bushy plant. It produces ample amounts of seed and has a very high germination rate especially when given sufficient moisture, seeds can remain viable for up to 4 years in the soil. It develops an extensive taproot that can grow up to 2 inches in diameter and the plant can grow anywhere from 2-5ft high. Its appearance and smell can resemble that of pas-



ture sage therefore, it is good practice to positively identified if you are unsure.

In Manitoba and Saskatchewan Absinthe Wormwood is considered a noxious weed. Its is uncategorized in Alberta, however, producers should keep an eye out for it due to its invasive nature and ability to spread at an alarming rate especially in pasture. Some municipalities in Alberta have chosen to elevate Absinth Wormwood to the Noxious category if they deem necessary in their area.

Control options for Absinthe Wormwood are lacking. Grazing is not recommended as its unpalatable to cattle and horses, however, sheep will graze it. Healthy pasture stands are known to be your best line of defence when battling the weed.

Aminopyralid, glyphosate and dicamba are all registered for chemical control on the weed. Mechanical control has proved to be effective but can be difficult and time consuming if you have large established populations.

There has not been much work done on integrated control strategies for Absinthe. The M.D. of Wainwright does not have many Absinthe populations within its borders that we are aware of. Keep your eyes peeled and if you are unsure of identification swing by the office and myself or James will be able to help identify it.



Mycotoxins and Cattle Feed

Producers should exercise caution and test feed for mycotoxins before feeding it to livestock. Mycotoxins is not a new issue however, the issue is on the rise in Western Canada due to favourable weather conditions, more aggressive fungal strains and some management practices by producers.

Mycotic (caused by mycotoxins) diseases are normally not immediately identified in cattle. These diseases cannot be passed from animal to animal and treatment with antibiotics has little effect for. Mycotoxins suppress livestock immunity which in turn causes secondary diseases that can be caused by viruses, bacteria or parasites. These symptoms are often more obvious than the primary infection. Outbreaks may be seen seasonally due to weather influence on fungal growth and toxin production. Below is a list of common toxins and their affects on livestock.

- **Listeria monocytogenes**: A bacteria that causes abortions in cattle and is associated with silage. A common source of infection for cattle is moldy forages or improperly cured silage with a high ph.
- **Moldy Sweet Clover**: Occasionally seen in Alberta moldy sweet clover can cause reproductive issues in cattle. Sweet clover silage and hay is difficult to make because the moist nature of the plant encourages mold growth.
- **Aflatoxins**: These are fungi that commonly grow on corn and cereal grains. It grows well in high moisture and temperature conditions. Aflatoxins causes vaccines to fail and suppresses natural immunity. It will also cause abortions, deformed calves and decreased fertility due to low Vitamin A levels.
- **Vomitoxins**: This is the most commonly detected Fusarium mycotoxin. Wet, rainy and humid weather promotes the infection of corn and cereal grains. Vomitoxins have been associated with reduced feed intake, growth rate and lowered immunity.
- **Ergotism**: Ergot toxicity is most frequently seen during cool, wet seasons. It infects the heads of rye, triticale, wheat, barley, oats and some grasses. There are two forms of the disease, the first affects the nervous systems and results in convulsions and staggers. The second, gangrenous form causes lameness and the loss of extremities.

Have feed tested yearly especially when feed such as silage is kept from year to year to detect if mycotoxins are present. You can contact your local vet or Alberta Agriculture and Forestry call center at 310-FARM if you have any questions.

Agricultural Drainage and Water Quality Concerns

Drainage water is defined as “surface drainage that moves excess water off fields or the farm either naturally or by constructed channels”. Subsurface drainage is installed to remove groundwater from the root zone or from low lying wet area, subsurface drainage is typically done through the use of buried pipelines.

What are the Water Quality Concerns with Drainage Water?

Drainage water can be a source of nutrients, salts and other contaminants that affect water quality. There are many parameters that effect water quality , this is a list of the most common ones:

- **Nutrients:** Nitrogen and phosphorous are the most common nutrients found in run-off water. Nitrogen is highly soluble and readily leaches through the soil profile. Excess nitrogen is a concern for aquatic life and groundwater potability. Phosphorous has low solubility and generally remains near the soil surface. Excess phosphorous contributes to toxic algal blooms such as blue-green algae.
- **Total Suspended Solids:** These are inorganic particles. High concentration of total suspended solid affects water clarity.
- **Pathogens:** Are disease causing organisms than can affect not only livestock but humans as well. Any water that comes into contact with human, livestock or wildlife feces is at risk of contamination.
- **Pesticides:** Includes herbicides, insecticides and fungicides.
- **Metals:** Metals can be introduced to aquatic systems as a result of human activity and the weathering of soil and rocks. And excess of metals can be poisonous to humans.
- **Salts:** Electrical conductivity is the level of dissolved salts, a high EC will stress plants and cause productivity loss. Sodium absorption ratio is a measure of salt levels determined by sodium, calcium, and magnesium.

Main parameters that should be considered when testing agricultural drainage water quality, with specific recommendations in brackets. The risk can be evaluated by referring to provincial water quality guidelines.

	Surface drainage	Subsurface drainage	Risk
Nutrients	✓ (N, P)	✓ (nitrate)	aquatic life, drinking water
Salts	(TDS, SAR)	✓ (TDS, Cl ⁻)	aquatic life, agricultural use ²
Total suspended solids	✓		aquatic life
Metals		✓ (aluminum, arsenic, iron, vanadium)	aquatic life, agricultural use, drinking water
Pathogens	✓ (<i>E. coli</i>)	✓ (<i>E. coli</i>)	recreation, agricultural use, drinking water
Pesticides	✓ (dicamba, MCPA)		aquatic life, recreation, agricultural use

um. High rates degrades soil structure and reduces aeration and water movement. Chloride can be used as an indicator of manure contamination in groundwater, high concentrations can be toxic to wildlife and affect crops. Lastly, total dissolved solids include salts, organic matter and minerals. There accumulation causes salinization problems where water discharges.

Are There Water Quality Guidelines for Drainage Water?

There are currently no water quality guidelines for drainage water from agricultural lands in Alberta. However, drainage water that enters an irrigation canal, wetland, creek, river or lake will affect the quality of the receiving water body. Hence, water quality guidelines for all existing and future water use of the receiving water body should be considered when examining drainage water. Drainage water should be managed so that receiving water bodies meet relevant water quality guidelines for use.

What is the Quality of Drainage Water and Receiving Waters in Alberta

Alberta Agriculture and Forestry research shows that agricultural drainage water is typically poorer than the quality of the receiving water bodies. Water quality varies based on land use, soil type and other factors.

Range of water quality of receiving water bodies.

	Irrigation district source water (n=13 sites) ¹	Irrigation district return water (n= 21 sites) ¹	Oldman River (n=3 sites) ¹	Bow River (n=4 sites) ¹
Total nitrogen (mg/L)	0.2-0.5	0.3-0.8	0.2-0.3	0.2-1.0
Total phosphorus (mg/L)	0.01-0.03	0.01-0.11	0.01-0.02	0.01-0.03
Total suspended solids (mg/L)	2-8	1-65	3-11	2-12
Total dissolved solids (mg/L)	103-382	126-369	156-200	165-228
<i>E. coli</i> (counts/100 mL)	2-30	11-465	3-14	2-28

¹ Median values for irrigation water from 7 years (2006 – 2007, 2011 – 2015) of data (samples per site = 16 to 28), Irrigation District Water Quality Project, Alberta Agriculture and Forestry.

² Median values for the rivers from Government of Alberta, South Saskatchewan Regional Plan 2014 – 2024, pp. 179 – 186.

Range of water quality of agricultural drainage.

	Surface drainage from pastures (n=2 sites) ¹	Surface drainage from non-manured fields (n=3 sites) ¹	Surface drainage from manured fields (n=8 sites) ¹	Subsurface drainage from manured fields (n=2 sites) ¹
Total nitrogen (mg/L)	2.0-5.3	3.0-9.9	3.8-11.2	4.3-32.5
Total phosphorus (mg/L)	1.35-1.68	0.32-2.06	0.78-4.86	0.03-0.05
Total suspended solids (mg/L)	6-16	4-26	7-19	n/a
Total dissolved solids (mg/L)	97-172	179-450	130-2221	n/a
<i>E. coli</i> (counts/100 mL)	73-110	4-30	1-230	0.5 ²

¹ Median values from 6 years (2007 – 2012) of data (samples per site = 33 to 135), Nutrient Beneficial Management Practices Evaluation Project, Alberta Agriculture and Forestry.

² Median values for 2 years (1999 – 2000) of data (samples per site = 5 to 17), unpublished data, Alberta Agriculture and Forestry.

³ Median value is the same for both sites.

What are the Considerations for Monitoring Drainage Water

Site specific data collection is needed to understand Alberta's water resources. Drainage water and receiving water bodies should be monitored for water quality and flow. Water samples should be collected using a standardized protocol and samples should be analyzed by an accredited laboratory .

A measure of flow is particularly important to determine total volume and contaminant loads received by downstream water bodies. Long-term monitoring (10 years) is beneficial for determining trends.

What Approvals are Needed for Drainage>

Landowners must obtain provincial approval under the Water Act before starting surface or subsurface drainage projects and drainage of wetlands or wet areas may be subject to the Alberta Wetland Policy. The approval process will require technical information about the proposed drainage system and may require written consent from downstream neighbouring landowners, irrigation districts and municipalities. Approvals from the Department of Fisheries and Ocean and under the Public Lands Act may also be required.

What Does it all Mean?

The Alberta Land Stewardship Act regulates the development of regional plans to address cumulative effects, including effects on water quality. Even though individual points of agricultural drainage may be small, the cumulative effects of drainage from the landscape can be detrimental to water quality. Drainage into water bodies that supply farm water can effect water quality and subsequently crop and livestock production. Responsible management of land can mitigate or minimize detrimental effects of drainage water on the environment and downstream water bodies.

Important points on drainage water quality are:

- Know the quality and quantity of drainage water
- Know the quality and quantity of the receiving water body
- Determine the potential for the drainage water to have detrimental effects on downstream water bodies
- Consider implementing beneficial management practices to minimize risk, including retaining more water on the landscape

If you would like more information visit www.agric.gov.ab.ca and enter in the following searches:

- Introductory guide to surface water quality monitoring in agriculture
- Services for agri-processors and producers analytical labs
- Rural water quality information tool
- Growing forward 2

Go to www.aep.alberta.ca and enter in the following searches:

- Alberta Water Act Approvals
- Alberta Wetland Policy
- Water Act Contracts

This fact sheet was prepared by: Water Quality Section Alberta Agriculture and Forestry 2017

A Reminder to all Ratepayers....

Please consider this a courtesy note to all M.D. residents to remind them that it is prohibited for dogs to run at large in the M.D. Therefore, we are asking everyone who may own or harbour a dog in the M.D. of Wainwright to ensure that their dog is kept safe and in its owner's control at all times. According to our Dog Control Bylaw, dogs found at large can be impounded. Fines to reclaim the dog are due before the dog will be released. If you have any questions please contact the M.D. office at 780-842-4454.