

Grow With Us

2024, Issue 4



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July/August 2024

Are Cows Getting Enough Quality Water?

by Barry Yaremcio, Yaremcio Ag Consulting

There have been studies conducted in Western Canada that evaluated the differences between cows drinking directly out of a dugout compared to a system that prevents cow entry into a dugout.

When stock drink more water, they eat more forage. This increases nutrient intake, which results in cows producing more milk that in turn improves calf growth rates.

Dr. Walter Wilms conducted research in Lethbridge (1990) that compared animal performance when cows either walked into the dugout to drink or from a water system attached to a fenced off dugout. The test period was 30 days. Cows drinking from the dugout did not gain any weight. Those drinking from a water system gained 16 pounds. The calf growth for the calves was 22 pounds higher for those on the water system. In a second trial, steers gained an additional 44 pounds over 71 days when drinking from a water system.

More recent work by Dr. Bart Lardner at the University of Saskatchewan (2005) found that calves were 18 pounds heavier at the end of grazing season when a water system was set up at the dugout.

Water quality declines throughout the summer due to evaporation, thus mineral content in the water becomes more concentrated. Sulfur content in the water above 2000 ppm combined with sulfur from the feed can result in final levels above 0.4%. This can result in polio. On average, a 1,400 pound lactating cow consumes twice as much water at 34 degrees Celsius compared to 25°C, up to 112 litres or 24.6 gallons per day. When consumption increases in hot conditions, the safe level of sulfur could be as low as 1000 ppm.

Sodium is another concern. Levels above 300 ppm will reduce free choice salt or mineral consumption. To improve intake, reduce the amount of salt in the mineral, add garlic or a flavoring agent, or dry molasses.

Cows that are allowed to walk into a dugout stir up the bottom causing an increase in Total Dissolved Solids (TDS) or “mud” that is suspended in the water. As TDS levels increase, the amount of water consumed decreases.

Investing in a pasture water system improves animal performance and health.



For additional information about water quality, contact Barry at 403-741-6032 or bjyaremcio@gmail.com.

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Top 10 Steps to Prepare for Harvest

by Canola Council of Canada

1. Watch this video. <https://www.canolacouncil.org/canola-watch/2016/08/04/top-10-steps-to-prepare-for-harvest/>
2. Have a plan to measure losses out the combine. Find something around the farm they can use as a drop pan. How to measure combine losses. Then use the Combine Seed Loss Guide to take pan results and translate them into bu./ac.
3. Prep bins for canola storage. Clean them to remove treated seed and animal protein that may have been stored inside. Do not use malathion in bins to store canola.
4. Consider these storage questions: Do you have storage to match projected harvest? Will you sell some crop off the combine? Will anything go in grain storage bags?
5. Assess plant populations and disease situation to establish a harvest plan for each field. Should it be swathed early due to alternaria? Is it a candidate for straight combining?
6. Fields planned for straight combining may benefit from a

pre-harvest application of glyphosate, glyphosate plus HEAT or Reglone.

7. Check chopper blades. Sharp blades are a good first step in helping the combine cut and spread cereal residue for improved canola establishment next spring. Some growers also retrofit their complete chopper system, as shown in the photo.

8. Consider other steps to improve residue management in heavy cereals, such as cutting higher and baling straw if needed.

9. Harvesting under wet conditions? Equipping combine with duals may be necessary.

10. Use pre-harvest herbicide on cereals to stop specific weeds — such as cleavers — from setting seed. This is in preparation for canola the following year.

Lakeland Agricultural Research Association hosts field tour to showcase latest work

by Corrina Dickens, Bonnyville Nouvelle

Farm folks gathered for dinner and homemade pie under a tent at the Lakeland Agricultural Research Association (LARA) Fort Kent location on Friday, prior to informative presentations and a guided tour out into the research crop land.

The LARA farm tour showcased research currently taking place, such as the impact of Allelopathic cover crops, barley mixtures, white and subterranean clover on nitrogen rates on silage crop yield, weed pressure, disease, and forage quality, and organic and inorganic fertilizers for forage barley. LARA also showcased prospective types of silage crops that had been grown.



Dr. Boyd Mori from the University of Alberta spoke to the group about the latest in pest management, resistant crops, and what challenges this area might face in the future. Mori is an expert on grasshoppers, flea beetles, and cutworm integrated management.

The event held a friendly and open atmosphere that fostered asking questions, getting curious about the research, and granted attendees the opportunity to pick the experts brains as well as foster new connections.

Mori spoke generally about his research program, and about some things he has been seeing out in the field.



“[I’ll] maybe draw your attention to some things that you may not have seen before, or maybe you’ve seen and always wondered what it is,” started Mori. “We work on a variety of crops and pests... A big push right now is in alfalfa and alfalfa seed production - working on the alfalfa weevil.”

Mori explained the difficulties faced with insecticide resistance, particularly with alfalfa weevil. “There are very few limited available products, and we all know we’re losing

more products than we are gaining at the moment. So, a lot of our research is looking at insecticide susceptibility, resistance monitoring, and resistance management.”

Mori displayed different types of pheromone-based traps for insect monitoring, as well as display cases of insects, and a live specimen of a newer insect called the canola flower midge that they identified in Canada in 2016. The canola flower midge is widespread across the prairies.

“We suspect it’s a native species that started using canola as a host... right now we don’t consider it a big economic threat, but it is something we’re worried about and we’re keeping our eye on it,” cautioned Mori.

After dinner, Mori’s presentation, and ample socializing, attendees were loaded up into a covered trailer to be shuttled over to LARA’s experimental crops.

LARA’s team of researchers offered a wealth of knowledge and gave attendees the opportunity to learn from local experts, as well as presenters.

LARA Research Agrologist Lance Ouellette led attendees through the cover crops to their applied research trial plots where people could see the results up close and personal. He spoke on the impact of white and subterranean clover.

LARA Research Scientist Dr. Angelica Ouellette took the mic to speak about Allelopathic cover crops, and Cropping Agrologist Momna Farzand explained their research on two-row and six-row barely mixtures.



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Winter Wheat Planning

by The Growing Point, Alberta Grains

Which field is suitable for winter wheat? (crop rotation, soil condition, etc.)

Winter wheat can be seeded into early harvested crops, such as canola, silage or pea stubble. Canola is a popular stubble crop for winter wheat. It provides good weed sanitation and adequate stubble. Pulse stubbles provide additional nitrogen but generally less snow trapping.

It is recommended to direct seed winter wheat into stubble, so the stubble can trap snow, providing the crucial insulation for winter survival.

What is the optimum time to plant winter wheat?

The optimum stage for winter wheat to survive winter is when they have at least three leaves and develop a crown. To make that happen, the ideal winter wheat seeding time is:

- Southern Alberta: the first two weeks of September
- Central Alberta: the last week of August to the first week of September

Which varieties are available?

To find the variety best suited in your region, check [Alberta Seed Guide](#) and [Winter Wheat Variety Selection Guide](#). Besides yield, pay attention to other traits such as winter hardiness, disease resistance, lodging resistance etc. Selecting a variety best suited to local conditions sets you up for outyielding spring wheat by 15-40%.

What are the benefits of winter wheat

Winter wheat yields up to 20% more than spring wheat, depending on growing conditions. Winter wheat is harvested several weeks before spring wheat. It helps to spread out the workload. Winter wheat takes advantage of spring moisture.

What are the best management practices for winter wheat seeding?

The most critical factors that set the stage for a successful winter wheat crop are to:

- Seed early
- Seed heavy: seed 45 live seeds/ft² to reach the target plant stand of 30-35 plants/ft² after winterkill
- Seed shallow: 0.5 to 1 inch (do not exceed 1 inch)
- Seed slowly: seeder speed around 4 mph
- Use a seed treatment

Fertilizer planning

Phosphate placed with or near the seed increases winter hardiness. A rate of 20 to 25 lb/ac phosphate placed with the seed is usually adequate.

For nitrogen, it is recommended to apply 40-70% of the nitrogen requirements at the time of seeding. Do note that the safe seed-placed rate of nitrogen is 30 lb N/ac using urea. Consider binding and/or using an enhanced efficiency fertilizer when the nitrogen rate exceeds that.

For more information on winter wheat management in Alberta:

https://www.albertagrains.com/files/2023/08/agri_facts__management_of_winter_wheat_in_alberta.pdf



Winter Wheat Varieties for Alberta

Traits given as a % of Radiant											
Variety	Overall Yield	Winter Survival	Maturity Rating	Protein (%)	Height (cm)	LDG	Bunt	Stripe Rust	Leaf Rust	Stem Rust	FHB
Canada Western Red Winter											
Radiant	100	VG	L	12.0	90	VG	S	S	S	S	S
CDC Chase	104	F	M	+0.4	94	F	S	MR	R	R	MS
AC Tempest	97+	P	VL	+1.5	91	VG	MS	MR	S	S	I
Emerson	98	G	M	+0.7	86	G	S	MR	I	R	R
Flourish	100	F	E	+0.6	80	VG	MR	I	I	I	S
*AAC Wildfire	115+	VG	VL	+0.3	86	G	MR	R	I	S	MR
*AAC Elevate	105	G	M	+0.3	83	VG	MR	MS	I	MR	I
AAC Gateway	99	F	M	+0.9	77	VG	S	MR	I	MR	I
Meals	105+	G	M	+0.7	91	F	MS	MR	R	R	S
Canada Western General Purpose											
Accipiter	104+	G	M	-0.4	84	VG	S	S	I	R	MS
Broadview	99	G	E	-0.5	81	G	S	S	R	R	S
CDC Falcon	100	F	E	-0.5	75	VG	S	S	MR	MR	S
Piarmigan	106+	G	M	-1.7	93	F	S	S	S	S	I
Pintail	108+	VG	L	-1.4	88	G	S	MR	MS	MS	S

*Note: AAC Wildfire and AAC Elevate are in multiplication

Legend

VG - Very Good, G - Good, F - Fair, P - Poor

E - Early, M - Mid, L - Late

R - Resistant, MR - Moderately Resistant, I - Intermediate, MS - Moderately Susceptible, S - Susceptible



Western Winter Wheat Initiative

Understanding Peola

An excerpt from Top Crop Manager, November 2020

Who wants change for the better? Most people do. But who wants to change? That's a tougher question, especially as it relates to intercropping a mixture of pea and canola. While some farmers are making that change, the big production barrier is the need to clean peaola production at harvest – a bottleneck that can slow harvest progress.

Below are some advantages and disadvantages as seen by Scott Chalmers, diversification specialist with the Westman Agricultural Diversification Organization (WADO) in Melita, Man. and Chris Holzapfel, research manager with the Indian Head Agricultural Research Foundation (IHARF) in Indian Head, Sask.

Advantages of peaola

- Mixed rows offer higher yield than alternate rows, and less so paired or triple rows of individual crops – the thought was there would be less competition between the crops in separate rows, or that canola would receive preferential access to N. This wasn't the case.
- Applied nitrogen has little effect on overyielding of the system. Adding N fertilizer favoured an increase in canola yield but not pea yield. Nitrogen fertilization also reduced the number of pea nodules and N fixation. Chalmers doesn't recommend N fertilizer when targeting higher pea yield in the peaola crop.
- Applied phosphorous (in deficient soils) provided additional peaola yield benefits, and produced more pea nodules with increasing rates. Yield of both pea and canola were increased, with overall grain production rising from 43 bushels per acre with no added P to a significantly higher yield of 49 bushels per acre with 30 pounds of P₂O₅ per acre in two years of trials at WADO.
- Peaola offers significant protection against pea aphid infestations compared to monocrop peas. WADO research found that monocrop pea had about 16 aphids per plant in 2017 compared to about two aphids in peaola stands.
- In a peaola crop, peas stand taller to allow a higher cutting height. In addition to ease of harvest, the stubble left behind after harvest can catch more snow compared to monocrop pea. Monocrop pea often has little standing stubble left and can be prone to soil erosion and "spring drought."
- Peaola can reduce seedborne disease from Ascochyta compared to monocrop peas. In WADO research,

monocrop pea had 16.5 per cent Ascochyta diseased seed compared to 2.25 per cent when peaola was sown in single rows.

- Clearfield canola is grown in peaola crops so that Odyssey herbicide can be used for weed control. The denser peaola stand can mean a more competitive crop and improved weed control than in monocrop pea.
- Experience has shown that pea is more frost-tolerant than canola in the peaola crop. This can offer "intrinsic" crop insurance against spring frost in peaola stands so that, if the canola is damaged by frost, the pea crop may still continue to grow so that the farmer doesn't have to reseed their field.
- WADO research found that broadcasting alfalfa before or after seeding peaola established a satisfactory stand of alfalfa. The addition of alfalfa may provide an advantage on saline, saturated areas where peas or canola do not grow well. Chalmers says these benefits are difficult to measure in small plots but may be realized in field-scale conditions.
- Pea and canola have complimentary rooting depths. Pea is shallow-rooted while canola's taproot reaches much deeper into the soil profile. This allows peaola to more thoroughly access soil moisture deeper in the soil profile than pea alone, and may offer a way to reduce salinity and grow more crop during excessive moisture conditions.

Peaola disadvantages

- Extra work seeding and separating crops, leading to extra labour or time.
- Bottlenecks during harvest at the separator.
- Somewhat more wasteful on inoculant inputs (compared to monocrops) if a granular type is used.
- Fewer weed control options, since LibertyLink and Roundup Ready varieties cannot be grown, unless Edge is used for pre-emergent weed control. The Clearfield canola option is challenged by Group 2 resistance found in kochia, cleavers, barnyard grass, chickweed, cow cockle, yellow foxtail, hemp-nettle, lamb's-quarters, ball mustard and wild mustard.
- Canola rotations are already very tight in Western Canada, and adding canola to a pea crop means the rotations are tightened further. This can result in an increased risk of diseases like blackleg and clubroot in canola, or Aphanomyces in pea.

LAKELAND AGRICULTURAL RESEARCH ASSOCIATION PRESENTS

Cowbytes

RATION BALANCING WORKSHOPS

OCTOBER 29, 2024
SMOKY LAKE UKRAINIAN
NATIONAL HALL

NOVEMBER 14, 2024
FORT KENT COMMUNITY
HALL

What is Cowbytes?

CowBytes ration-balancing software allows Canadian beef cattle producers to formulate their own feed rations. Producers can input various combinations of feed and byproducts at different prices to reduce feed costs while meeting animal production targets.

- ★ Bring your laptop and join us for a day of hands-on training using Cowbytes. We will be going through step-by-step instructions for the computer based cattle ration tool.
- ★ Bring your feed and water test results to build a ration based on your own herd, feed and water!
- ★ If you do not have Cowbytes installed on your computer, please arrive at 9:00 am for assistance. Computers must have a Windows operating system to run Cowbytes. If you do not have a laptop, please let us know so we can try and provide one for the day.

LUNCH PROVIDED



Event Agenda

- 9:00 am - Doors open, coffee and registration.
- 10:00 am - Workshop begins.
- 12:00 pm - Lunch and networking
- 12:45 pm - Workshop resumes
- 3:30 pm - Wrap-up and head home

Registration is required. Free for LARA members or \$10.00 for non-members*

First 8 registrations per workshop will receive a free copy of the CowBytes program on a USB drive!

Please note that registrants must attend to receive their free copy. Cowbytes has a \$60.00 value, comes on a USB drive and can be downloaded and utilized on multiple computers.

*members include all producers in the MD of Sonnyville, County of St. Paul and Smoky Lake County

 www.laraonline.ca/events



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Lakeland Agricultural Research Association

Mission Statement:

*Lakeland Agricultural Research Association (LARA)
conducts innovative unbiased applied research and extension
supporting sustainable agriculture.*

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