



Grow With Us

Lakeland Agricultural Research Association

July / August 2022

Forage Growth and Quality Changes as Plants Mature

Barry Yaremcio

Plants grow and develop a viable seed head to improve the longevity of the forage stand. With cool and dry conditions this spring, plant growth was slow. Plants stems did not elongate as normal, resulting in shorter plants. Heading occurred early in the growing season. This completed a majority of the plant life cycle for the year. Filling of the seed heads to make it viable is the final step. Nutrients developed by the plant are used to keep the plant alive, extend the root system to enhance future nutrient uptake.

Surplus nutrients are translocated into the root system and used to develop vegetative buds which are needed to generate next year's plant growth. Winter survival is compromised if the root system does not have adequate food reserves. This is a common problem when alfalfa is cut within forty five days of a killing frost.

Forage quality decreases as plants mature. In the vegetative stage, quality is high. After heading out the, protein and energy content decreases. Acid Detergent Fibre (ADF) and Neutral Detergent Fibre (NDF) increase over time. As fibre levels increase, energy decreases.

Research done at the Northern Alberta Crop Research Centre; thirteen different grass species were cut on a weekly basis from the five-leaf stage to full maturity (Suleiman, Journal of Range Management 52: 75-82 January 1999). They found that protein content decreased by 2 to 2.5% per week after heading. Acid Detergent Fibre (ADF) increased by 3% per week resulting in a reduction of energy or Total Digestible Nutrients (TDN) content by approximately 1% to 1.5% per week.

This year, plants are shorter but have developed a seed head. The plants will not elongate and thus waiting for more yield per acre is not likely. Waiting two or three weeks will only reduce the quality of the harvested forage. If the plants are cut now without having developed a fertilized seed head, the plant will regrow to accomplish this task in the second growth. In many areas, the substantial rains last week could stimulate regrowth. It is possible that the yield from the second cut will be higher than from the first cut.

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2022 Calendar of Events

Fort Kent Field Day	July 21, 2022	LARA Research Site
Increasing Forage Efficiency and reducing costs While Improving Soil Health	July 26, 2022	Mallaig Unity Hall
Lac La Biche Field Day	July 27, 2022	Lac La Biche County
St. Paul Field Day	August 4, 2022	County of St. Paul
Discover Organics	August 9, 2022	Owl River Hall
Smoky Lake Field Day	August 10, 2022	Smoky Lake County

Call the LARA Office for
help with:

Age Verification, Feed Testing,
Environmental Farm Plans,
Canadian Agricultural Partnerships
Applications and more.

780.826.7260

Feed Testing

We offer two free feed tests to all
producers in the MD of Bonnyville,
Lac La Biche County, Smoky Lake
County and the County of St. Paul.

Call the office to borrow a bale probe
or to drop off a sample: 780.826.7260



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AGRICULTURAL CLIMATE SOLUTIONS ON-FARM CLIMATE ACTION FUND (OFCAF)

ABOUT THE ON-FARM CLIMATE ACTION FUND (OFCAF)

OFCAF is an initiative to help farmers tackle climate change. Funding for this project [in part] has been provided by Agriculture and Agri-Food Canada through the Agricultural Climate Solutions – On-Farm Climate Action Fund.

PROGRAM SCOPE

The program will provide financial support to producers to accelerate their adoption and implementation of on-farm beneficial management practices (BMPs) to reduce 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 three BMP streams in the OFCAF program are:

- **Improving nitrogen management:** *for example, agronomic services to develop farm-specific nutrient management plans, equipment modifications for fertilizer application in fields, and soil sampling and analysis.*
- **Increasing adoption of cover cropping:** *for example, payment-per-acre to cover adoption or related costs such as seeds and equipment. Cover crops are plants, like clover and alfalfa, that are planted to cover the soil rather than for the purpose of being harvested.*
- **Expanding the adoption of rotational grazing:** *for example, agronomic services to develop grazing management plans, interior cross fencing, water system infrastructure, legume and forage seeds. Rotational grazing is the practice of containing and moving livestock through pasture to allow forage plants to recover, deepen their root systems and improve soil health.*

Other activities to support the adoption of beneficial management practices will be considered, such as outreach, education and training.

For more information on the program go to:
<https://rdar.ca/get-funding/agricultural-climate-solutions-on-farm-climate-action-fund-ofcaf/>

Other intensive grazing program funding can be found: <https://www.canadianfga.ca/projects/advanced-grazing-systems/>

And cover cropping programs will be through: <https://farmersforclimatesolutions.ca/cover-cropping>



12:00 PM - 4:00 PM

SMOKY LAKE AGRIPLEX



Understanding Crop Diagnostics

Join Axiom Agronomy for a hands-on discussion identifying and treating common in-season crop issues including herbicide residues, spray drift, nutrient deficiencies and the impact of drought and heat stress.

Annual Forage Opportunities for Livestock

Come view over 30 varieties of annual cereals and over 10 combinations of winter and spring cereals intercropped.

Reduce Cost through Swath Grazing during Winter

Come listen to Dr. Obioha Durunna from Lakeland College discuss his project focusing on reducing beef production costs through swath grazing complex forage-mixtures during winters in Alberta.

and more!

Impacts of top dressing nitrogen fertilizer on spring wheat.

Part of the day will be outside,
please dress for the weather



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@ cropping@laraonline.ca

Water Quality and Livestock

Kellie Nichiporik

As the weather heats up, so do your water source temperatures. Higher evaporation and heat can cause water quality concerns in a short amount of time. Paired with the heavier amounts of rain in June, which can transport nutrients and sediments into your waterbodies, can lead to a number of water quality issues such as blue green algae or cyanobacterial blooms.

Just like humans, water quality affects livestock health and growth. With access to clean water, there is increased animal performance and research has shown improved growth in yearlings by as much as 23%.

There are many issues that can compromise herd health, or even be lethal. Blue-green algae is one of the most common issues. They are a primitive bacteria that are capable of photosynthesis. They can fix their own nitrogen and thrive in a phosphorous rich environment (which is particularly common if your livestock drink directly from the water source). They are capable of regulating their buoyancy, so move vertically in the water column depending on light, temperature and nutrient requirements. Despite the name, blue-green algae can be turquoise, green, brown, red, white or mixes of these colours. Blue-green algae blooms can look like fine grass clippings in the water, spilled paint or pea soup. Sometimes they look like a thick scum on the surface. They often smell musty or grassy when healthy and like ammonia when decomposing.

Cyanobacteria produce several different types of toxins, some of which are lethal within minutes of ingestion. Other toxins can bioaccumulate and cause long term damage to vital organs such as the liver or kidneys. Anatoxins have been known to be lethal within minutes of consumption. They are very potent at weak concentrations. Saxitoxins affect the nervous system

and in humans may aggravate pre-existing conditions such as asthma. They can also cause severe contact dermatitis (both humans and livestock). Microcystins accumulate and can persist in the water for several weeks following the bloom, and can cause damage to your kidneys and liver. They also can create acute symptoms such as nausea, vomiting, diarrhea, muscle and joint pain, headache and fevers.

If you are noticing illness in your livestock (or fatalities), testing your water source is important. Some common factors that compromise herd health and to test for are: alkalinity, total dissolved solids, nitrate, nitrite, dissolved organic carbon, available sulphate, available phosphate and a routine chemical.

Some indications of illness can include diarrhea, which can be caused by high total dissolved solids, blue-green algae, and sulphates. Nitrates can lead to poor weight gains, along with other long-term health problems. High nitrates, especially combined with feed that may be high, can lead to abortions and even death. Potassium can cause issues depending on the pH and alkalinity of your water source.



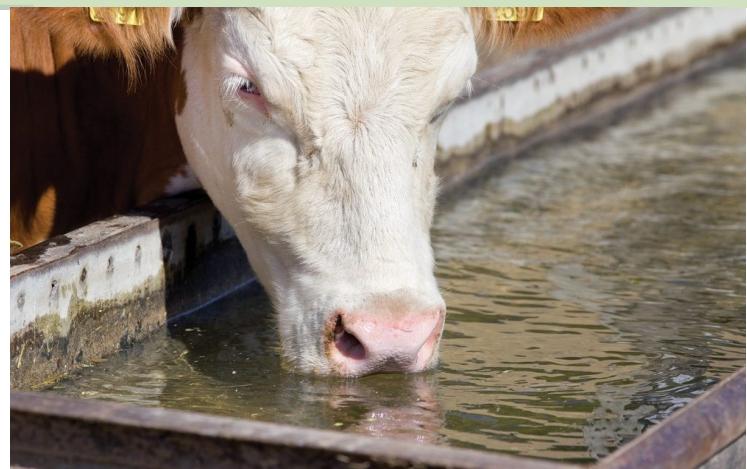
Water Quality and Livestock

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Sulphates, in addition to diarrhea can cause many different issues including dehydration as cattle may refuse to drink the water. High sulphates will also result in mineral deficiencies such as copper and other trace minerals that lead to depressed growth rates, reduced fertility and immune system responses which can lead to long-term health issues.

You should visually inspect your water sources, as blue-green algae, high turbidity or black water are noticeable. However, testing may be required for chemical and other water quality parameters. Also look to the vegetation around your water source.

Plants such as Western water hemlock are extremely toxic to livestock and typically grow near your water sources. For questions about how to test your water, call the LARA office at 780-826-7260.



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- Heritage wheat variety breeding
- Heirloom barley
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- Grass finishing program
- Growing 15 varieties of Potato Seed
- Carrot and rutabaga variety trials
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Workshop covers the organic transitioning process and requirements

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<https://bit.ly/3tDxHfu0>




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Annual and Perennial Forages with Dr. Kevin Sedivec

Megan Wanchuk

Dr. Kevin Sedivec is the rangeland extension specialist at North Dakota State University and director of Central Grasslands Research Extension Center in Streeter, North Dakota.

Kevin completed his Ph.D. in Animal and Range Sciences at North Dakota State University in 1994. He has since worked at NDSU, mentoring countless graduate students, 4-H members, and youth, including our newest team member Megan. Kevin has given thousands of presentations across North America throughout his career.

Kevin has a wealth of knowledge on various topics, from perennial and annual forage management to grazing systems, rangeland management, and invasive species control. He strives to provide better opportunities for ranchers to be profitable while addressing environmental and production-based issues.

Kevin is involved in several research studies on perennial forage management, cover crops, and grazing systems which examine livestock performance, forage utilization, economic profitability, and soil health. He

has recently been working on a producer-based project across North Dakota, evaluating cattle performance and soil health with cover crops grazed at different stocking densities. Cash crop yield after two years of cover crops and grazing is being monitored to evaluate integrated livestock and cropping systems.

We are very excited to have Dr. Sedivec share his knowledge with us on July 26th at Mallaig. Join us in learning how to increase forage efficiency and reduce costs while improving soil health using annual and perennial forages. This workshop includes a hands-on, in field learning portion in the afternoon.

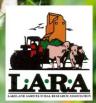


♦ Increasing Forage Efficiency and Reducing Costs While Improving Soil Health Using Annual and Perennial Forages

USING ANNUAL FORAGES IN AN INTEGRATED CROPPING LIVESTOCK SYSTEM

Featuring Dr. Kevin Sedivec
July 26, 2022
9:00 AM to 4 PM
Mallaig Unity Hall
Cost: \$20

TO REGISTER: CALL
780-826-7260 OR USE
QR CODE OR
[HTTPS://WWW.EVENTBRITE.CA/E/SOIL-HEALTH-AND-FORGES-TICKETS-359851253787](https://www.eventbrite.ca/e/soil-health-and-forages-tickets-359851253787)



Wild oat a growing resistance challenge that can't be ignored

Western Producer

Keep an eye on your fields this summer and be ready to tackle the problem when you see

If you rely solely on crop protection products to fend off wild oats, you're not going to like the eventual bottom line.

Herbicide-resistant strains of the weed are going to mean you'll eventually run out of luck. It's not a new problem, but every year it gets just a little bit more concerning.

"Resistance is only going to get worse," warns Kim Brown-Livingston, weed specialist with Manitoba Agriculture.

"Without new chemistries coming and with us being reliant on the chemistry that we have, it's just a matter of time before resistance hits."

Currently, 69 per cent of wild oats in the Canadian Prairies display some level of herbicide resistance. Of those, 62 per cent are only resistant to Group 1 herbicides, 34 per cent are resistant to Group 2 herbicides, and 27 per cent are resistant to both.



Herbicide resistance, of course, isn't limited to wild oats. The Manitoba Pulse and Soybean Growers Association lists 14 species known to be resistant to herbicides. But because the available herbicides that work for wild oats are limited to begin with, and because those chemicals that are available have been around for a long time, wild oats have become a bigger problem and tend to get a lot of attention.

"You're pulling from the same pool of products — the same corner of the chem shed all the time," Brown-Livingston said.

While herbicide-resistant wild oats can be found in any field, the problem is particularly acute for cereal crops. For canola — where the majority is either Liberty (glufosinate) tolerant or Roundup Ready (glyphosate tolerant) — those chemicals are still effective against wild oats, said Brown-Livingston.

"If they're used properly, then they can actually do a good job," she said.

There are some pre-emergent chemistries for cereals, but there tends to be a bit more management involved with these methods. Pre-seeding tillage is an option but not feasible every year. (For example, many farmers in waterlogged Manitoba seeded late this year, giving weeds the opportunity to get ahead of the crops.)

But producers should do what they can, said Brown-Livingston.

In-crop spraying is still effective, just not as effective. Apply the in-crop herbicide effectively and according to the label, then just hope for the best, she said. But over the longer term, now is a good time to get a handle on the challenges you may face, and take steps to counteract the spread of resistant wild oat.

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Pest Spotlight: Cabbage seedpod weevil

Stephanie Bilodeau

Cabbage seedpod weevils are attracted to the buds on early budding canola plants. Chemical control is recommended when an average of three to four adult weevils per 180° sweep at the 10 – 20% flowering stage.

Early flowering cruciferous plants like wild mustard and volunteer canola plants are very palatable to CSPW as they feed on the pollen, nectar, buds and racemes. The adult weevils move into edges of the canola crops once the plants reach budding and early flowering stages and then later move into the center of the field. CPSW adults target the younger developing pods and lay their eggs in them. Larvae hatch 6-7 days after the eggs are laid, and they feed on the developing canola seeds within the pods. A single larvae can consume up to five to six canola seeds within their larval stages.

Why Control?

- Adults feed on flower buds, causing bud-blasting and reduced yield potential in dry years as the plants' ability to compensate for the damaged flowers are limited due to the poor growing conditions.
- Once Larvae emerge from pods, the exit hole may allow fungal infections to develop in humid weather conditions. This is when majority of the crop damage occurs due to how it leads the damaged pods to being susceptible to pod shatter.
- New generation adults emerge about 14 days later and feed on younger canola plants.

When to Scout: Adults

- The earliest flowering canola fields should be monitored closely as the CSPW tends to make itself present at this time.
- Sampling should be taken when the canola crop is first entering the bud stage and continue through the flowering period.
- Select ten locations within each field starting with the outer edge of the field working your way into the middle of the field. At each location take ten 180° sweeps and count the adult CSPW.

Resources:

This Information was excerpted from the Government of Alberta website.



St. Paul Summer Field Day
August 4, 2022 4:00 pm - 8:00 pm
St. Paul Municipal Seed Cleaning Plant

BBQ Supper at 5:00 pm

Featured Research Plots:

- Regional Variety Trials - Green and yellow field peas and faba beans
- Regional Variety Trials - Spring wheat and barley
- Impact of ESN application on spring wheat and spring barley production
- Alternative forages (cocktail cover crop species) for livestock feed
- Intercropping pulses and cereals for silage and grazing

Guest presenters include
Trent Whiting from SeCan
Dr. Obioha Durunna from
Lakeland College

Register at:

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Forage Growth and Quality Changes as Plants Mature

Continued from cover page...

When the weather patterns look promising, take the first cut as soon as possible to save quality and increase the potential for a good second cut.

Resources:

Forage Growth and Quality Changes as Plants Mature
beefconsultant.com

For more information on when to cut hay, contact Barry at 403-741-6032 or bjyaremcio@gmail.com.

LAC LA BICHE SUMMER FIELD DAY

July 27, 2022

Craigend Hall

10:00 am - 3:00 pm
Lunch included!



Part of the day will be outside. please dress for the weather

FEATURING GRANT LASTIWKA

Perennial forages response to drought and extreme heat and strategies to manage and assist plant recovery

Also included:

DUGOUT MANAGEMENT

IMPACT OF SEEDING RATE AND SEEDING DEPTH ON CANOLA PRODUCTION



Register at: (780) 826-7260 or cropping@laraonline.ca

Today we talk tomatoes. Nearly all tomatoes need support of some sort to prevent them from sprawling on the ground. While sprawling in and of itself isn't an issue it can lead to the transmission of soil-borne diseases. Growing vertically, with support, makes the most of garden space, provides better air circulation and minimizes disease.

There are many different types of supports that can be used; the most common being cages or sturdy canes for outdoor plants and string supports in greenhouses. Weaving the stems onto string supports is best done in the afternoon or early evening as the stems are more supple at this time as they have warmed through the day. Supports also provide the plant with better light levels and make pruning and removing side shoots much easier.

Pruning any leaves that are in contact with the soil will also lessen disease risk. Once the plants are established you can remove all leaves up to the first flower. This also helps reduce the risk of blight which is a soil-borne disease carried by the wind. In addition to pruning make sure to water carefully. Take care not to splash up onto the leaves and try to water in the morning which give the soil surface a chance to dry off during the day. Inspect plants regularly and remove any leaves that you spot blight on as it spreads quickly.

Also consider where you plant as growing near potatoes increases the chance of blight passing between



them and affecting both crops.

Covering your soil with mulch also has its benefits. It helps with weed reduction, cools the roots by shading the soil, retains moisture and provides a barrier between the soil and foliage, again reducing the risk of disease.

If you are growing your tomatoes in containers, be sure to never let the potting mix dry out. Its very hard to properly rewet the potting mix once dry. If possible, an irrigation system will help with proper watering if you are growing in many containers. Mulching will also help retain moisture in pots as it shades the surface of the potting soil.

Lastly, vine ripened tomatoes are the most flavourful and nutritious. Picking the tomatoes green and leaving to ripen is only suggested if frost is threatening; or you are looking to make some fried green tomatoes (delicious, by the way).



We have a variety of tomatoes in our greenhouse and will have information on the types and yields in our annual report. We are always open to visitors who are interested in seeing our garden/greenhouse. Please call first to ensure that someone is available to show you around.

Wild oat a growing resistance challenge that can't be ignored
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Keep an eye out for random patches of wild oat in the field. More regular patterns tend to indicate a mechanical problem with the spraying, like clogged nozzles.

If you suspect you have a herbicide-resistant infestation, Brown-Livingston said it's important to be vigilant and ready to take action against those patches of wild oat, for example.

"Go in and mow that patch out and do not let that set seed," she said. "Do not let that seed hit the ground because if it is resistant wild oats and that seed hits the ground, your problem is that much bigger next year and the year after that."

That vigilance includes thoroughly cleaning the combine or any implements used in that field.

An excellent resource for dealing with wild oats can be found at [the Weed Science Society website](#). It provides advice, strategies and plenty of easy-to-follow infographics to aid farmers in their battle against wild oats.

Resources:

[Wild oat a growing resistance challenge that can't be ignored - Alberta Farmer Express \(albertafarmexpress.ca\)](#)



Don't Forget to keep an eye on laraonline.ca for more event details as they become available.



Mission Statement:

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

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 (ASB alt)

Jay Cory (LFA Rep)



Fort Kent Summer Field Tour
 July 21, 2022 at the Research Farm
 4:30 pm - 8:00 pm

BBQ Supper at 5:00 pm

Early Seeded Winter Cereals as a Drought Management Strategy

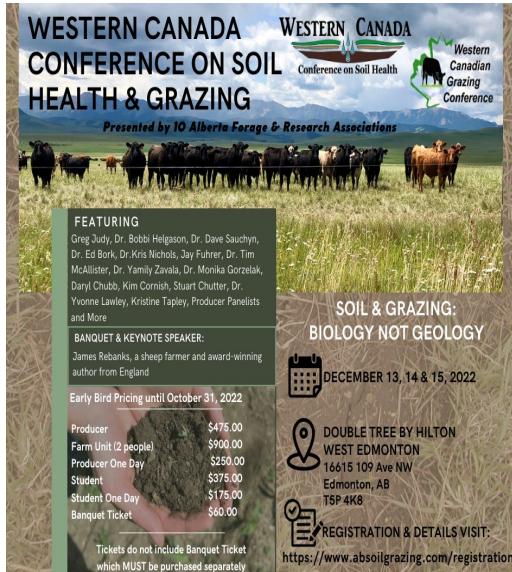
Impact of Maintaining a Soil pH of 7.2 on Annual Crop Production

Hands-on crop staging demonstration and discussion

Featuring Presentations by:

- Sheri Strydhorst (Alberta Wheat Commission/Alberta Barley Commission)
- Keith Gabert (Canola Council of Canada)
- Megan Wanchuk (Lakeland Agricultural Research Association)

Register at (780) 826-7260 or cropping@laraonline.ca



WESTERN CANADA CONFERENCE ON SOIL HEALTH & GRAZING
 Presented by 10 Alberta Forage & Research Associations

FEATURING
 Greg Judy, Dr. Bobbi Helgason, Dr. Dave Sauchyn, Dr. Ed Bork, Dr. Kris Nichols, Jay Fuhrer, Dr. Tim McAllister, Dr. Yannly Zavala, Dr. Monika Gorzelak, Daryl Chubb, Kim Cornish, Stuart Chutter, Dr. Yvonne Lawley, Kristine Tapley, Producer Panelists and More

BANQUET & KEYNOTE SPEAKER:
 James Rebanks, a sheep farmer and award-winning author from England

Early Bird Pricing until October 31, 2022

	Producer	\$475.00
Farm Unit (2 people)		\$900.00
Producer One Day		\$250.00
Student		\$375.00
Student One Day		\$175.00
Banquet Ticket		\$60.00

Tickets do not include Banquet Ticket which MUST be purchased separately

SOIL & GRAZING: BIOLOGY NOT GEOLOGY

DECEMBER 13, 14 & 15, 2022

DOUBLE TREE BY HILTON WEST EDMONTON
 16615 109 Ave NW
 Edmonton, AB
 T5P 4K8

REGISTRATION & DETAILS VISIT:
<https://www.absoilgrazing.com/registration>

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