



Grow With Us

Lakeland Agricultural Research Association

January/February 2022

Good news for cereal seed quality

Alberta Wheat and Barley Commission

Western Canada experienced wide-spread heat and drought conditions during the 2021 growing season. Stressful growing conditions during heat and drought can cause physiological challenges during crop development and seed maturity. These changes can lead to decreased seed quality due to low germination and vigour from small and immature seeds. Abiotic stresses can also impart seed dormancy due to increased stress hormone levels during the growing season. 20/20 Seed Labs analyzed germination and vigour of seed samples received from across Alberta between October 15th to November 15th, 2021. Overall, seed quality for wheat and barley has been surprisingly good this fall.

	BARLEY	WHEAT	WHEAT, DURUM
AVERAGE GERM	94.2%	96.5%	95.0%
AVERAGE VIGOUR	87.8%	92.3%	91.2%

Table: 1

Table 1. The average percentage germination and vigour from Alberta barley, wheat and durum samples. The samples were received and analyzed from October 15th to November 15th, 2021.

The germination percentage is high for cereals throughout most of the regions in Alberta. Barley, wheat and durum germination averages are above 90 per cent. Vigour is also good. The likelihood of significant quality loss during overwinter storage is low.

Table 2. Observed cereal seed quality issues in Alberta. The samples were received and analyzed from October 15th to November 15th, 2021. ‘Cereals’ include wheat, durum wheat, barley, triticale, rye, and oats.

Quality Issues in October-November 2021 Samples	Average number of affected samples (%)
Dormancy observed - Cereals	2.5%
Frost damage suspected - Cereals	1.1%
Infection due to pathogen observed in Germination test - Cereals	4.9%
Chemically Injured Seedlings - Cereals	4.7%

Table: 2

Dormancy has been noted in some samples harvested from central-east Alberta (Figure 1). There are minor incidences of frost and seed-borne pathogens; however, it does not appear to be a leading trend. This is expected as the growing conditions were not ideal for high disease pressure, and the warm harvest conditions in most areas of the province reduced the potential for frost damage.

Notably, minimal amounts of chemical injury have been seen in cereal germination tests. “Chemical damage not only affects the potential for seedlings to grow normally into adulthood, but it can also have a negative effect on vigour and the storage life of the seed.” says Carey Matthiessen, Operations Manager and Senior Seed Analyst at 20/20 Seed Labs. Producers who use desiccant should indicate this on seed sample submissions so analysts can contact them with testing options to help determine whether seed use is recommended.

Continued on page 3

In This Issue:

<i>Events calendar</i>	2
<i>Intercropping Webinar series</i>	4
<i>Cover Crop Webinar</i>	5
<i>Job Opportunity</i>	6
<i>Adjusting Rations with Temperature Change</i>	7

2022 Calendar of Events

Intercropping Webinar series	February 8, 10 & 17 2022	Zoom
Agronomy Update	February 24, 2022	Zoom
Annual General Meeting	March 1, 2022	Ashmont Agriplex
Cover Crop and Cows with Kevin Elmy	March 9, 2022	Zoom
Finding Fairness in Farm Transition with Elaine Froese	March 15, 2022	Zoom
Working Wells	March 23, 2022	Zoom

Call the LARA Office for help with:

Age Verification, Feed Testing, Environmental Farm Plans, Growing Forward Stewardship 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



Find us on Facebook



Follow us on Twitter

LakelandARA LARALivestock LARAcropping

Good news for cereal seed quality

Continued from page 1...

Figure 1. Map of Alberta showing counties and municipal districts where dormancy has been detected in wheat, durum wheat, barley, triticale, rye, and oat germination tests. Results are from samples completed from August to November 2021.

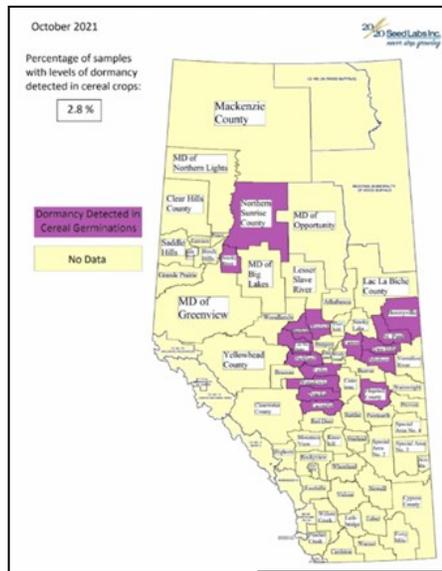


Figure: 1

Table 3. The Average Thousand Kernel Weight (grams) of barley, wheat, and durum for 2021, 2020, and 2019. The reporting period includes the harvest samples received during 2021 (Aug. 2021-Oct. 2021), 2020 (Aug. 2020-Jun. 2021), and 2019 (Aug. 2019-Jun. 2020).

Average Thousand Kernel Weight (grams)			
	2021	2020	2019
Barley	47.6	46.8	46.5
Wheat	36.5	38.6	39.5
Wheat, Durum	38.5	40.4	40.8

Table: 3

This year, the average Thousand Kernel Weight (TKW) for wheat and durum wheat is lower than in previous years. Average TKW for barley was slightly higher as compared to samples received in 2020 and 2019, and this could be due to 2021 data only including this fall's samples. As more barley samples are received, a drop in the reported average may be seen (Table 3). Some cereal samples with green seeds have been seen in seed sample analysis. Green seed can affect germination, vigour, and moisture results. Producers concerned with green seed or lighter kernels are recommended to test for germination, vigour, TKW and moisture to determine proper storage of the seed lot over the winter. This information will also assist in seeding rate accuracy for the 2022 season. Lighter and smaller seeds can affect plant stand counts this upcoming growing season if seeding rates are not adjusted.

Fusarium graminearum

In 2021, 5.5 per cent of wheat, durum wheat, barley, and oat samples tested in our lab from Alberta were positive for *Fusarium graminearum* (Fg). When compared to November 2020, this is a considerable decrease year-over-year. Last year, 15 per cent of samples tested positive for Fg, with the highest infection rates observed in the east-central Alberta region.

Figure 2. Map of Alberta showing the per cent of samples testing positive on the plate method for *F. graminearum* from each county or municipal district in from August 2021-November 2021.

“As we continue to test more samples, we are getting a better picture of where *F. graminearum* will be an issue for seed in the province”, says Trevor Blois, Disease Diagnostician at 20/20 Seed Labs. Currently, 19 counties or municipal districts in Alberta have had cereal samples that tested positive for *F. graminearum*.

Seed quality and disease results may change as more samples are submitted to the lab and trends may appear in different areas of the province. To assist farmers and agronomists to make data-driven business and crop production decisions, 20/20 Seed Labs publishes monthly seed health, seed quality and disease reports in The Incubator newsletter. [Subscribe](#) today and get insider knowledge on Alberta's most common crop diseases, exclusive testing opportunities, and comprehensive data reports.

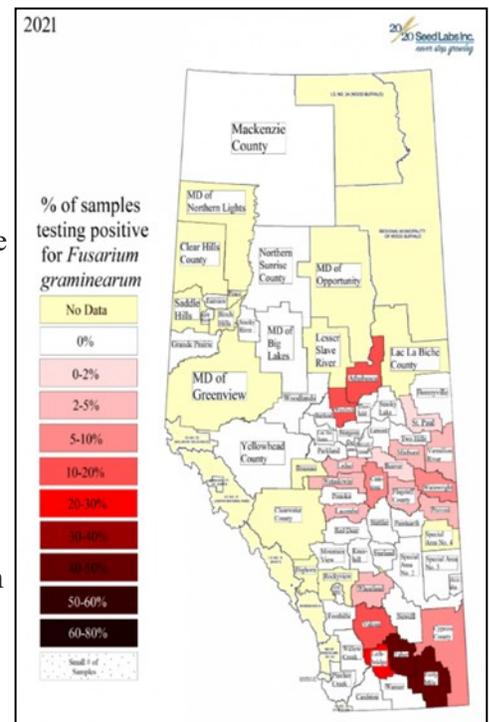


Figure: 2

Website:

[Good news for cereal seed quality - Alberta Wheat and Barley Commission \(albertawheatbarley.com\)](http://albertawheatbarley.com)

Intercropping Webinar Series
L.A.R.A



February 8, 2022 1 PM

Intercropping Impacts on Nutrients and Disease

Featuring Scott Chalmers and Michelle Hubbard

To register: <https://bit.ly/3u2kZrL>



February 10, 2022 at 7 PM

Challenges and Successes: Producer Experiences

Featuring Josh Fankhauser from Lamb Farms (lamb-farms.com), Kelly & Christi Friesen from Rebellion Farms and Taylor Snyder

To register: <https://bit.ly/3ooSdDW>

February 17, 2022 at 1 PM

The Latest Research in Intercropping
Featuring Lana Shaw and Alan Lee

To register: <https://bit.ly/35uJL9I>



Intercropping Webinar Series

Cover Crops and Cows webinar
L.A.R.A

Webinar March 9th at 7 PM
To register: <https://bit.ly/3uaiKT8>



COVER CROPS
AND COWS
FEATURING KEVIN ELMY

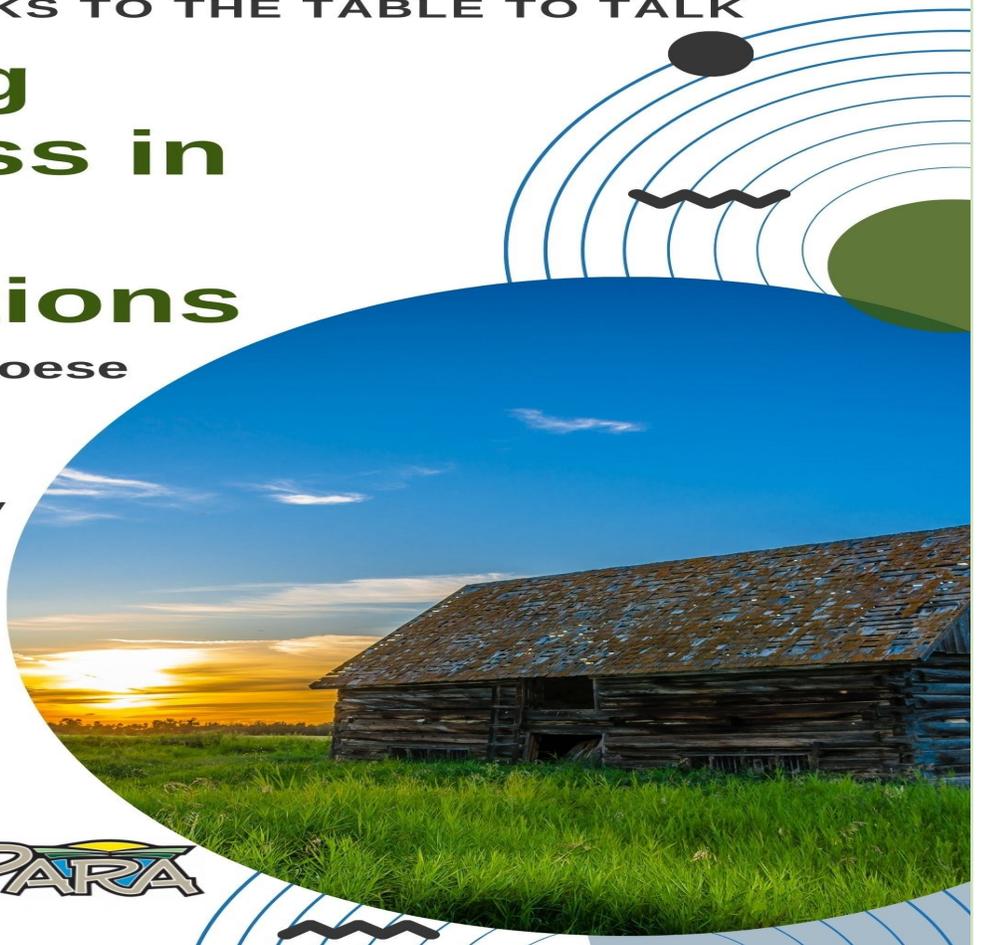
GETTING FOLKS TO THE TABLE TO TALK

Finding Fairness in Farm Transitions

With Elaine Froese

MARCH 15, 2022
7:00 PM

To register:
<https://bit.ly/3G9bEAy>



Job Opportunity
L.A.R.A

Summer Agricultural Field Technician
Lakeland Agricultural Research Association

Full Time from May 2nd to August 31st, 2022
Job Location: Fort Kent, AB
Number of Positions 2-4

We are looking for 2-4 ambitious and hard-working Summer Agricultural Research Technicians to be a part of our team.

Lakeland Agricultural Research Associations (LARA) is a producer run organization conducting leading edge applied agricultural research and extension in Northeastern Alberta. Our Vision is to make Alberta's agricultural producers profitable and sustainable through applied research, demonstration and extension in areas of forages, livestock, annual crops, specialty crops, environmental conservation and regenerative agriculture.

We encourage students of agriculture and other natural science degree and diploma programs to apply. Students in fields other than natural sciences with a strong interest in agriculture will be considered. Ideal candidates will have an interest in agriculture, a strong work ethic, excellent communication and computer skills. We are looking for someone with a genuine interest in the agricultural industry!

If you enjoy time outdoors, you will appreciate the field work associated with agricultural research. Duties will include seeding preparation, seeding, mowing, spraying, harvesting, plot maintenance, soil sampling and data collection. There will also be occasional handling of livestock. Candidates should have the ability to work in a team environment and under minimal supervision.

Agricultural and Machinery experience will be considered an asset, but it is not imperative as training will be provided. Please indicate on your application if you have experience with trucks, trailers, loading equipment, tractors etc. Applicants must hold a valid driver license and have a safe driving record. Local applicants are encouraged to apply. Wage is negotiable depending on experience. Start and end dates are flexible.

Closing date for this position is on February 20th, 2022. The positions may be filled prior to the deadline if suitable candidates are found. Only candidates selected for an interview will be contacted.

For more information or to send a resume, contact:

Alyssa Krawchuk, Executive Director
Lakeland Agricultural Research Association
Box 7068 Bonnyville Alberta, T9N 2H4
Phone:(780) 826-1130. Email: livestock@laraonline.ca

Adjusting Rations with Temperature Changes

Barry Yaremcio: Yaremcio Ag Consulting

The lower critical temperature for mature beef cattle is -20 degrees Celsius. This is the point where the heat produced when consumed feed is digested matches what is required to keep the animal warm. Smaller animals that have a larger body surface area: body weight ratio lose heat more rapidly and have less ability to withstand cold. Their lower critical temperature is above -20 degrees Celsius and ration adjustments must be made sooner for these animals than what is done for mature animals. As a survival mechanism, animals increase their feed intake when it is colder than the lower critical temperature.

Increasing the amount of the total ration provided is recommended. It is not advisable for animals eat extra straw to meet their appetite. Straw is a low energy, low protein feed that lowers overall ration quality. If protein levels are reduced, this can reduce the amount of feed an animal can consume in a day due to slower digestion of the high fibre feeds. Adding extra grain to the ration is the best option to increase heat production.

It requires one to three days for feed to pass through the digestive system. Grains and low fibre feeds are easily digested and pass through more rapidly than hay or silage. Straw requires the most time to be digested.

When temperatures moderate, energy required to keep an animal warm, decreases. Two to three days prior to temperatures moderating, start adjusting the ration. Remove one pound of grain per day from the ration so that when temperatures reach -20 degrees Celsius, the cattle are back onto the normal ration. If the extra grain remains in the ration, the animal may become “heat stressed” and go off feed. Timing is critical when removing the extra grain.



For additional information on adjusting rations, contact Barry at 403-741-6032 or bjyaremcio@gmail.com.

Website:

[Adjusting Rations with Temperature Changes \(beefconsultant.com\)](http://beefconsultant.com)

Lakeland Agricultural Research Association

Mission Statement:

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

LAKELAND AGRICULTURAL RESEARCH ASSOCIATION

Box 7068
Bonnyville, Alberta
T9N 2H4

Phone: 780-826-7260
Fax: 780-826-7099

E-mail:
livestock@laraonline.ca
sustainag@laraonline.ca
cropping@laraonline.ca
technician@laraonline.ca

Find us on Facebook

Follow us on Twitter:
@Lakeland ARA
@LARA livestock
@LARA cropping

www.laraonline.ca

LARA Staff

Alyssa Krawchuk
livestock@laraonline.ca
Forage and Livestock Program

Kellie Nichiporik
sustainag@laraonline.ca
Environmental Program

Amanda Mathiot
cropping@laraonline.ca
Cropping Program

Stephanie Bilodeau
technician@laraonline.ca
Agronomy Technician

LARA Board

M.D. of Bonnyville

Murray Scott
Ulf Herde
Don Slipchuk (*ASB rep*)
Josh Crick (*ASB alt*)

Lac La Biche County

Wanda Austin (*Chair*)
Laurier Bourasa
Sterling Johnson (*ASB rep*)
Colette Borgun (*ASB alt*)

County of St. Paul

Patrick Elsen
Phil Amyotte
Kevin Wirsta (*ASB rep*)
Louis Dechaine (*ASB alt*)

Smoky Lake County

Barb Shapka
Charlie Leskiw
Dan Gawalko (*ASB rep*)
(*ASB alt*)

Jay Cory (*LFA Rep*)

Upcoming Events

*See events calendar on page 2!
Don't forget to keep an eye on www.laraonline.ca
for more event details as they become available.*

This publication is made possible in part by:



Thank you to our municipal and county partners:

