



# PURE INTENTIONS

Why varietal purity in Saskatchewan barley  
is top of mind this year



BARLEY'S BIG BREAK + PRICES REMAIN HISTORICALLY HIGH ... *and much more*



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**Editor-in-Chief**

Cole Christensen

**Creative Director**

Brent Morrison

**Contributing Writers**

Mitchell Japp, Delaney Seiferling, Peter Watts, and SaskBarley Staff

**Cover Illustration/Photo**

Courtesy SaskBarley

**Publisher**

Cole's Ag Communications

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**Executive Director**

Jill McDonald  
 306-370-7237  
 jmcdonald@saskbarley.com

**General Inquiries**

Phone: 306-653-7232  
 Fax: 306-244-4497  
 Email: info@saskbarley.com

212 - 111 Research Drive  
 Saskatoon, SK S7N 3R2



## BOARD OF DIRECTORS

**Keith Rueve (Chair)**  
 306-231-7420  
 keithrueve@live.ca

**Matt Enns (Vice-Chair)**  
 306-717-6099  
 makersmalt@gmail.com

**Maurice Berry**  
 306-452-7504  
 m.c.berry@sasktel.net

**Zenneth Faye**  
 306-272-7080  
 zfaye@sasktel.net

**Cody Glenn**  
 306-293-7525  
 southlineag@hotmail.com

**Glenn Wright**  
 306-493-3023  
 gwrightsk@gmail.com

# Here's to 10 years of growth and development

Ten years ago, SaskBarley was officially formed, after barley producers in this province decided they wanted a say in how their check-off dollars would be invested and how to grow the barley industry.

Barley is a unique and exciting crop, and in the past 10 years, farmers have led the growth and development of our industry. Although progress often takes longer than we would like, today we have more funded research specific to barley, new markets and new market development projects in the works. SaskBarley is the leader in producer funded barley research and market development, with over 80% of our annual expenses invested in these initiatives.

The Canadian barley industry is changing, and as we take stock of what we've achieved over the past 10 years, one thing is clear: we are all looking forward to what still lies ahead for our promising industry.

To hear from some of our directors about successes from the past 10 years, flip to **Pg. 7**. And this is a great time to remind you that this is another election year for our board. If you've ever had an interest in having a say in the future of the barley industry, now



*"I am proud of the work we have accomplished to date ... in the Canadian barley industry."*

is a great time to get involved. Watch for election information on our website this spring.

More recently, our board has also been busy with business as usual. Early this year, we announced our \$184,612 contribution to the next round of Agriculture Development Fund (ADF) research, which will happen over the next four years. This research will work to gain a better understanding of fusarium head

blight, improved salinity tolerance in barley, and staying ahead of emerging pathogens — all extremely important areas to our producers right now.

And to further our understanding of best management practices for Saskatchewan barley, we are excited to launch our BarleyBin Field Lab program this spring. This is an on-farm research project that aims to answer your questions about how to best grow barley today, focused on seeding rates in 2023. Our goal is to conduct four such projects this year and to be able to share our results with you to help you improve your own practices. Learn more about this on our website.

Finally, as we head into another busy seeding season, we've included a few pertinent reminders for producers in this issue. First of all, a reminder to be aware of insecticide options for controlling key pest species like grasshoppers. Due to the cancellation of lambda-cyhalothrin on crops for feed, you'll have to find alternative active ingredients for insect pest control. For more information on thresholds and damage of key pests covered by products

containing lambda-cyhalothrin and alternative options for foliar and seed treatment products, **visit [barleybin.ca/insecticide-options-in-2023-for-barley-producers](https://barleybin.ca/insecticide-options-in-2023-for-barley-producers)**.

We are also reminding producers that there is growing attention being paid right now to varietal purity in our malting barley crops, as we've seen an increase recently in samples that have failed these tests. To stay protected from losses, we are advising producers to be proactive in knowing exactly what they're planting and to practice good on-farm management of malting barley. If you have had problems with varietal purity already, we encourage you to contact our office to help investigate further. See more on this on **Pg. 4**.

As we all prep for this spring, I want to remind you to go slow and be safe out there. Wishing you all a productive seeding season and hope to see you over the summer.

**Keith Rueve**  
Chair, SaskBarley

**SaskBarley**  
DEVELOPMENT COMMISSION





# PURE AND SIMPLE?

Farmers advised to dig deeper into varietal purity issues in malting barley.

by Delaney Seiferling



*Tajinder Grewal, chief scientist & head of genomics labs at SGS Canada, developed the SGS 92-seed purity test. Photo courtesy Tajinder Grewal.*

Saskatchewan malting barley producers are used to taking care to ensure their crops will meet the required 95% varietal purity mark when they go to sell their crops.

But this year, they are being cautioned to be more diligent in these efforts, as varietal purity testing failure rates have gone up recently — and the industry isn't 100% sure why yet.

The Canadian Grain Commission was made aware of this issue in late December, says the organization's head of communications Rémi Gosselin, and has since been working with industry partners to determine what the cause might be.

He says so far, there are two particular avenues they are exploring. First, there could be an issue with the DNA-based testing methods being used on barley samples.

"There's a number of different ones that are being used across industry to identify malting barley varieties and grain samples," he says. "And these different methods may vary in the accuracy of the results."

The other potential explanation being explored is that there could be anomalies in the genetic markers of some of the older barley varieties.

"In other words, that there may be a drift in the genetic makeup of what some of these varieties are looking like," he says.

He says although the CGC has no regulatory authority over testing methods for varietal purity in barley, the organization will continue to play a supporting role in trying to determine the root cause for the recent issues with purity and will provide guidance to the industry as needed. Meanwhile, other stakeholders have confirmed that varietal purity testing — and failure rates — are up this year.

## Update on CGC report:

***In late March, the Canadian Grain Commission issued a report on the varietal purity issue in barley. It yielded two main conclusions:***

### 1.

That various DNA-based testing methods are used across the industry to test varietal purity in barley and that these tests vary in accuracy, which "has likely led to inaccurate purity results for grain samples containing certain varieties."

### 2.

A non-designated DNA profile was detected in some samples of CDC Copeland. Although this profile has been found in previous years, it was found in higher levels in the last year. The ability to detect this profile varies across testing methods.

As a result, the CGC has committed to work with industry to address the issue, by enhancing testing and potentially establishing a testing proficiency protocol, doing quality assessments of CDC Copeland, and improving channels for dispute resolution between growers and grain buyers.

"This year the failure rate is about 25%," says Tajinder Grewal, chief scientist & head of genomics labs at SGS Canada.

Although SGS hasn't documented failure rates from past years, Grewal estimates they would have been in the range of 5-10%.

Viterra has also significantly increased its varietal purity testing this year, specifically in some of the older varieties like Metcalfe and Copeland, says Jon White, barley trader for Viterra.

"It was a little bit of a reactive measure we had to take," he says, adding that he's seen the biggest issues in maintaining purity come from Copeland barley (which remains the most seeded variety in Western Canada).

To determine varietal purity rates, all of Viterra's submitted barley samples are first sent to SGS Saskatoon to undergo a 92-seed count test.

The same test is then performed again on all the company's export cargoes.

"So, we have a very good idea of what the product looks like before it ends up on a vessel," White says.

The SGS 92-seed varietal purity test was developed by Grewal in 2016 while working at the University of Saskatchewan Crop Development Centre and put into commercial use in the SGS Saskatoon Genomics Lab in 2017. (SGS also offers 184- and 368-seed versions of the test.)

The test was designed specific to each malting barley variety, using the purest form of breeder seed.

As the industry awaits further information on root causes for the increase in testing failure rates, producers are advised to take their own precautions, as rejected malting barley deliveries can have major financial repercussions.

"The biggest loss comes when a malt barley crop doesn't qualify for the malting grade," says Keith Rueve, SaskBarley chair.

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In the current market, losses of \$1.00/bushel have been reported, he says.

For reference, this means downgrading of a 1,000 acre barley crop from malt to feed could, conservatively, cost a producer up to \$64,000 (a discount of \$1/bushel x 64 bushels/acre = \$64/acre).

And those losses could extend over time if there are extended issues with varietal purity, White says, which is why the industry needs to address the issues that have emerged around malt barley varietal purity assurance in the past couple of years in short order.

“If we can’t assure the quality of our products, the premium typically paid for Canadian malt barley will be reduced. This means we will be competing with exporting countries that produce lower-quality barley, such as Argentina and Australia. Ultimately, this will decrease the bottom line for Canadian producers,” White says.

Grewal says another contributing factor to the issue could be that producers aren’t always entirely sure what they’re seeding.

He says there have been instances when producers will indicate on their sample submission forms they’ve grown one variety, but it turns out to be another.

“It doesn’t happen very often,” he says. “But when they’re selling Copeland, Synergy or Metcalfe, they’re selling a particular variety as the malting process is specific to each variety. It’s extremely important for producers to know what they’re seeding.”

This is why producers are reminded to always follow best management practices when it comes to malting barley, Rueve says, adding producers can also protect themselves by ensuring they know the quality of their crops and have documented proof for challenging failed test results.

“It’s important to make sure you know what you’re selling with malt barley. Each producer who has had a test that’s failed has their own unique situation,” he says.

“If you are confident in your seed source, your on-farm practices and your sampling, your likelihood of having a failed varietal purity on malting barley should be low — and if your test fails, you might want to start asking more questions.”

Rueve says SaskBarley would also like to see the Canadian Grain Commission play more of a role in providing validation and audit services for independent labs to verify and support quality assurance services.

At the end of the day, issues with varietal purity will most affect producers, and he would like to see them in a more empowered position.

“We know that the barley we’re exporting is meeting varietal purity of 95% or more and is a high-quality product,” he says. “This is an issue for producers, as they are the ones facing the discount.”

“Varietal purity is a critical issue for the industry as maltsters require high levels of purity to produce a consistent and high quality product suitable for their brewer customers,” White says.

“Maltsters and brewers, in Canada and globally, come here because we consistently produce some of the best malting barley in the world. Varietal purity is a cornerstone of Canada’s value proposition in the international market.”

Producers who have any concerns about variety purity issues are encouraged to get in touch with the SaskBarley office. 📞

## How producers can protect themselves

### KNOW YOUR SEED

- Using certified seed is one of the best ways to ensure varietal purity. Malting barley grown from certified seed, especially where only one variety is grown on a farm, has a low likelihood of varietal purity falling below 95%.
- Producers are advised to avoid the use of common seed for malting barley production.
- Producers can also use farm-saved seed, but are advised to take steps to maintain the quality and lessen the risk of declining varietal purity over time. Consider testing farm-saved seed for varietal purity before seeding.

### EMPLOY BEST CROP MANAGEMENT AND STORAGE PRACTICES

- Use crop rotation to eliminate volunteer barley.
- Wait at least two years before growing barley on the same field, especially if there are two or more malting barley varieties grown on farm.
- Clean trucks, augers, seed tanks, grain bins and combines between fields.
- When transitioning to a new variety, or if multiple varieties are grown on farm, implement good storage management.
- Ensure varieties are kept separate and clearly labelled.

### KNOW YOUR TESTING OPTIONS

- Be sure to enlist appropriate sampling procedures on farm.
- Private testing at SGS Labs is available; 368-seed count test provides highest level of accuracy.
- Independent testing is offered at Canadian Grain Commission — cost is around \$1,000/test.
- Save a sample of seed from each field or seed lot for testing if needed.

### KNOW YOUR OPTIONS FOR ARBITRATION IN THE CASE OF A FAILED TEST

- Producers should determine how varietal purity results can be arbitrated prior to delivery or as soon as possible after delivery of their malting barley.
- Varietal purity is a contractual obligation, outside of the Canadian grading system, and not subject to a binding decision from the Canadian Grain Commission. Consideration could be given to delaying delivery of malting barley until after varietal purity results are available to ensure best marketing options.
- If you have concerns over your varietal purity test results, contact SaskBarley at 306.653.7232 or info@saskbarley.com.



# Barley's big break

Ten years ago, our crop got its shot. Here's what we've done with it since.

by Delaney Seiferling

Ten years ago, Saskatchewan's barley industry got its big break.

The Saskatchewan Barley Development Commission (SaskBarley) was officially established in 2013, after the Government of Saskatchewan concluded extensive consultations with the local agriculture industry, confirming that local barley producers wanted to direct the investments of their check-off dollars.

"Saskatchewan barley producers want to be on the cutting edge and now they can have a say in how we will grow our sector," said the organization's interim chairperson, Bill Cooper, at the time.

Now, a decade in, many local producers are convinced they have had a say in the direction of the industry — and that it is on track to guide its own bright future.

One of these producers is Zenneth Faye, who farms with his wife Cindy near Foam Lake.

When SaskBarley was originally formed, Faye decided to let his name stand for the board, intrigued by all the possibilities that existed in the barley world.

"I saw what had transpired in the canola industry in the areas of value added, research and market development," says Faye, who had previously served as a director and chair of the SaskCanola board (and who had extensive industry experience at the time).

"And that was basically non-existent in barley."

He thought the idea of producers being able to direct their own check-off investments presented a major opportunity for the barley industry.

"Before, when we had a good idea to further the industry, we'd have to go to government, research agencies or the private sector to ask for funding," he says.

"Now, producers had some dollars in their pocket, not only to invest but to attract other dollars."

## GETTING SET UP

Before SaskBarley's first board of directors could start investing, they had to put the right foundation in place for the organization to thrive.

That included hiring staff, including executive director Jill McDonald (who remains in the role).

"We were very fortunate that we got and still have such excellent staff working for the barley industry in this province," Faye says.

Another initial task was setting strategic priorities to drive the increased production and value of barley, while making partnerships to support the work in these areas, says Cam Goff, former SaskBarley Director.

"For the first couple of years, we were really trying to connect with people in industry, and just come to an understanding of the various organizations that were out there, exactly what they did, the people who were involved, and what they thought were important issues," says Goff, who also served as the first chair of the the board.

He says developing ties with other crop commissions from across western Canada also quickly became a priority.

"I don't think there's any producer in Western Canada who grows only one crop," he says. "So, it's really important that all of the crop commissions work together."

The board then set its own strategic priorities, a process that benefited greatly from the diverse perspectives of the board members at the time, Goff says.

"We realized that just concentrating on barley as malt was not best for the industry," Goff says, adding that board members Brent Johnson (a livestock producer) and Keith Rueve (a producer who also worked for the Pound-Maker feedlot and ethanol plant) brought valuable perspectives on the opportunities for feed and industrial uses.

"The great thing about the board at the time was that we worked together well, regardless of differing viewpoints," Goff says. "Everybody involved had their voice heard and people were listened to. It was good for barley growers and it was good for producers in general."

Another point of agreement

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Photo by iStock images.

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for the board at the time was the importance of working to ensure Canadian producers had access to, and markets for, newer malting varieties.

“Just having one variety of malt for 20 years — the companies may have thought it was a good deal, because they had consistency — but it certainly wasn't best for producers,” Goff says. “We were growing varieties that really should have been replaced, agronomically, while there were much better options out there at the time.”

### **SUCCESSES OVER THE PAST DECADE**

When it comes to making real change, progress always takes longer than one would like, Faye says.

“As a producer, we're used to making a decision in the morning and carrying it out that afternoon. When you're dealing with funding agencies, trying to get projects going and completed and influencing policy, it takes a lot longer.”

However, there are several areas where the board has made progress in the past 10 years.

For Faye, who also serves as chair of the Barley Council of Canada, one of the major wins to date is how the Canadian barley industry has organized itself to define and work towards ultimate goals that will benefit producers.

For example, several years ago SaskBarley led the creation of the Canadian Barley Research Coalition, a collaboration with Alberta Barley and the Manitoba Crop Alliance to fund long-term research to improve the profitability and competitiveness of the crop for western Canadian producers.

Another major win for the

barley industry is the emerging market for Canadian barley as a feedstock in China, which is the result of strategic efforts of the industry and the federal government to build new markets, Faye says.

“This was a major market development over the last number of years,” he says. “We have more bidders at the auction, which is always good for the producer.”

And after 10 years, the board is finally also starting to see progress

revolves around barley because I export it, I clean it and I grow it,” he says.

But he was also surprised by how much credibility being a director has given him within his own work. For example, he says before he joined the board, he often pushed buyers to be open to accepting new malting varieties.

“Even coming from me as a business owner, it would go in one ear and out the other,” he says.

Once he was able to add the

agriculture industry.

“When you're farming, it's very easy to not look at the bigger picture, to only concentrate on your own farm,” he says. “Getting involved makes you far more aware of what is going on in terms of government, industry, research — all the things that, together, are very important to your farm.”

For example, he says being on the barley board really opened his eyes to the non-malting side of the industry.

“I always tried to produce malt, feed was a fallback. Through the board work I came to realize that was very shortsighted. It was important to me, but it was not best for the industry.”

### **THE IMPORTANCE OF PRODUCERS' VOICE**

Later this year, SaskBarley will hold elections to fill more open spots on its board, and Faye encourages younger producers like Glenn to consider getting involved.


“I always felt that I didn't have much to contribute. But the one thing that I have learned is that our voice is very important.”

He says individual producers stand to have a huge impact on the future of their industry.

“We as producers need to have our voices heard,” he says.

“It's very easy for producers' voices to be drowned out when we are just speaking as individuals,” Goff says.

“It's through groups working together that we can make our voices heard, especially by government, as they're the ones that basically make the regulations.”

Nomination forms for the 2023 SaskBarley election will be available this spring. Check the website for more information. 

**“We have more bidders at the auction, which is always good for the producer.”**

**Zenneth Faye, producer**

in getting buyers to accept newer malting varieties.

For Cody Glenn, who farms in the Climax area, this priority area was a large part of why he wanted to join the SaskBarley board (which he did in 2022).

“I would think the main thing that excites me is getting the maltsters to try and accept new varieties” he says, adding that the main marketing company he deals with recently agreed to accept new varieties.

“When I heard that, I just about threw a party, I jumped up and down for joy. So, we're definitely going in the right direction.”

### **THE BENEFITS OF BEING A BOARD DIRECTOR**

For Glenn, joining the barley board was a good fit because he has a vested interest in seeing the industry thrive.

“My whole world kind of

“SaskBarley director” title behind his name, things changed, he says.

“It made people take me a little bit more seriously.”

He says he has also been surprised by how easily the role has fit into his already busy life.

“It's not an excessive amount of time, that's for sure,” he says. “You kind of figure out that the benefits outweigh the time commitment.”

Another one of the main benefits for Glenn has been the community he has been exposed to.

“Just in over one year with the SaskBarley board, I've met people that I've heard of but never thought that I would have the opportunity to be on a first-name, texting back-and-forth basis with.”

For Goff, who has extensive experience with producer boards, one of the main benefits was always giving him a wider perspective on the





Photo by iStock images.

# Barley research making progress

A look back over the last year with the CBRC.

## by Canadian Barley Research Coalition

The Canadian Barley Research Coalition (CBRC) was established in 2020 and is positioned to be the leader, and point of contact, for barley research in Canada.

Over the past year the CBRC took on a new role, facilitating the development of the next Barley Cluster submission to SCAP (the Sustainable Canadian Agricultural Partnership program). The barley value chain has benefited from AgriScience Barley Clusters since 2010, with research investment exceeding \$25 million. The outputs from the Barley Clusters have shaped the industry through the development of new barley varieties grown by farmers today to develop best management practices to maximize varietal profitability and sustainability. Funding under the Barley Clusters also supports end-use applications to enhance the whole barley value chain related to feed, forage, malting and brewing, and food uses.

The current Barley Cluster program will end March 31, 2023, and the CBRC has been busy preparing the submission for the next

program. Over the past year the CBRC has communicated the priorities of the barley industry and the AgriScience Program, facilitated a call for Letters of Intent and full proposals, and completed a thorough review of each activity by the Science Advisory Body, independent peer reviewers and funders.

The SCAP program, starting in 2023, has some notable changes to the requirements for submission, including a reduced

***The barley value chain has benefited from AgriScience Barley Clusters since 2010.***

government cost share ratio and research priority areas dedicated to climate change and the environment, economic growth and sector resilience. CBRC has been working hard to ensure that new requirements for the program are met without compromising on funding research that is of the highest priority to producers and the barley industry.

In addition to leading the next Barley Cluster, the CBRC manages the funding under the Core Breeding Agreements (CBA). In 2020 CBRC signed CBAs with Agriculture and Agri-Food Canada (AAFC) and the University of

Saskatchewan's Crop Development Centre (CDC) for \$1.5 million and \$2.7 million over five years, respectively. Progress towards breeding targets under the CBAs will bring significant benefits to the whole value chain, as the new varieties are registered and grown by farmers in the coming years.

On July 18, 2022, the CBRC Barley Committee met to review the progress of the barley breeding programs under the CBAs and to provide feedback to the breeders on the needs of the industry. The in-person barley committee meeting was well attended and a great opportunity for breeders, producers, maltsters and brewers, the livestock industry and food manufacturers to discuss their barley varietal needs. The full-day meeting included presentations from the value chain and, of course, an opportunity to share a beer with friends in the industry.

The goal of the CBRC is to continue to maximize Canadian barley research investment that provides a significant return on investment for funders. An important part of the work is the communication of research outputs to ensure adoption of new technology and knowledge. The CBRC continues to build its communication presence through the CBRC website, Twitter and in-person events. Check out the CBRC at [barleyresearch.ca](http://barleyresearch.ca). 🍷

# Barley prices remain historically high

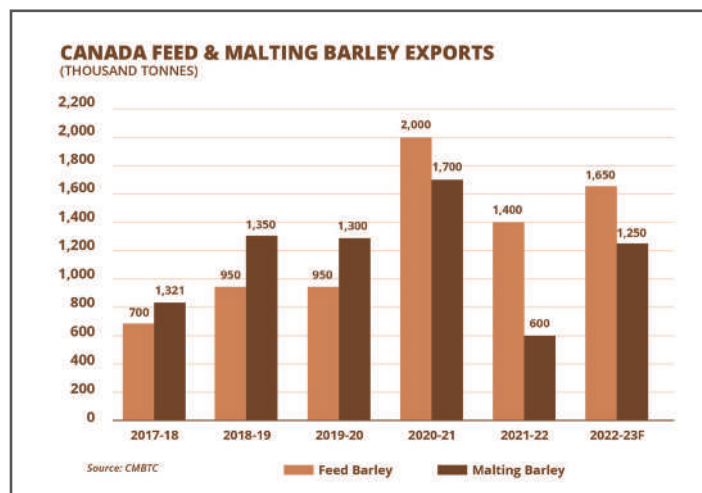
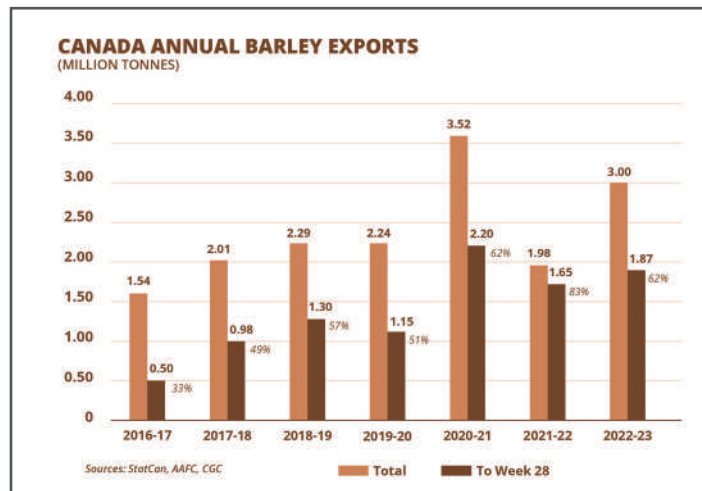
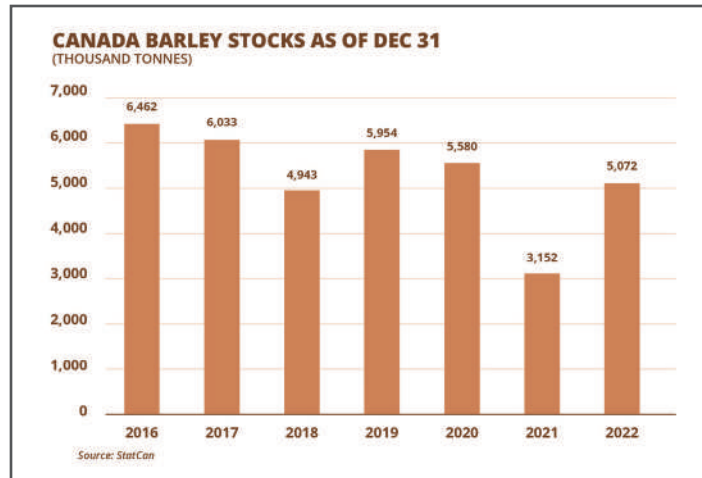
And so does domestic and export demand.

by Peter Watts  
Managing Director, CMBTC

With a healthy sized and good quality barley crop in Canada in 2022, the industries that rely on Canadian barley, including the domestic livestock sector, Canada’s malting industry and export markets for feed, malting barley and malt, saw significant relief this year in the form of increased supply, replenishing severely depleted stocks after the 2021 drought. But even as the pipeline replenishes, prices remain historically high, with continued strong corn and wheat values coupled with good domestic and export demand for barley, both feed and malt.

## SUPPLY & DEMAND FOR CANADIAN BARLEY

In early February, Statistics Canada released its quarterly stocks report and updated supply and disposition figures for Canadian grains and oilseeds. Not surprisingly, barley stocks as of Dec. 31, 2022, had increased significantly from the end of 2021, up 61 per cent from 3.152 million (M) tonnes to 5.072 M tonnes, although this is still below the long-term



historical average of around six M tonnes.

With a healthy export pace to date (1.867 M tonnes of barley exported as of week 28, according to the Canadian Grain Commission), in its Feb. 17 grains report AAFC maintained its forecast of Canadian barley exports at 3.67 M tonnes, which includes around 700,000 tonnes of processed malt (barley equivalent), meaning just shy of three M tonnes of projected barley exports, one M tonnes higher than in 2021-22, and 500,000 tonnes below 2020-21.

## MALTING BARLEY SUPPLY & EXPORTS

While some areas of the Prairies faced continued drought conditions in 2022, including important barley growing areas of southern Alberta and southwest Saskatchewan, many areas received adequate moisture during the growing season leading to good overall average yields, estimated at just over 70 bushels per acre across Canada. A generally dry harvest (with exceptions, such as parts of Manitoba) also contributed to adequate supplies of good-quality malting barley from the 2022 harvest.

With the improved availability of malt barley this year, exports are projected to reach one M tonnes, roughly the average of recent years and a significant increase over 2021-22.



**BARLEY VALUES**

Barley prices in Canada remain firm, while internationally, French malting barley prices have gradually eased since last fall. Ample supply of barley in Europe, good winter barley prospects and slow demand for malting barley have pressured French prices over the past few months. In Canada, feed barley prices continue to be supported by low stocks and the relative landed price of corn, which remains historically strong.

**GLOBAL BARLEY PRODUCTION & TRADE UPDATE**

In February's monthly USDA report, global barley production in 2022 was increased slightly to 150.5 M tonnes, well above 2021 levels, when drought in North America and a smaller Russian crop reduced overall output. Australia's crop increased 300,000 tonnes to 13.7 M tonnes, another large barley crop that will keep Australia as the world's largest barley exporter again this year at 7.7 M tonnes. A big Russian

crop has also resulted in a strong export program, while Argentina's exports have been curtailed by a smaller crop affected by last winter's drought. The USDA's Canada barley export forecast aligns with AAFC's projection at three M tonnes.

In terms of imports, the USDA is projecting global barley trade at 29.9 M tonnes, up 1.4 M tonnes from 2021-22, including an 800,000-tonnes increase in China's projected imports to nine M tonnes. However, this looks optimistic right now, with only 1.35 M tonnes of barley imported in the first three months of the Oct/Nov year, according to Chinese custom stats. Still, China's demand for malting barley should remain in the 3-3.5 M tonnes range as it has in recent years. In other markets where malting barley is an important component of overall barley imports, Mexico and Vietnam imports are forecast to be strong at 500,000 and 600,000 tonnes, respectively, while Brazil's imports are forecast lower after a very strong year in 2021-22. 🌱

**WORLD BARLEY PRODUCTION**

USDA, MARCH 2023 ('000 METRIC TONNES)

	2018-19	2019-20	2020-21	2021-22	2022-23	2022 vs 2021
E.U.	49,470	55,180	54,324	52,046	51,450	(596)
Russia	16,737	19,939	20,629	17,505	21,500	3,995
Australia	8,819	10,127	14,649	14,337	14,100	(237)
Canada	8,380	10,383	10,741	6,984	9,987	3,003
Turkey	7,000	7,900	8,100	4,500	7,400	2,900
UK	6,510	8,048	8,117	6,961	7,400	439
Ukraine	7,604	9,528	7,947	9,923	6,100	(3,823)
Argentina	4,635	3,615	4,035	5,300	4,500	(800)
U.S.	3,343	3,756	3,719	2,615	3,796	1,181
Subtotal	112,498	128,476	132,261	120,171	126,233	6,062
Other	27,100	29,884	28,644	25,754	25,391	(363)
<b>WORLD TOTAL</b>	<b>139,598</b>	<b>158,360</b>	<b>160,905</b>	<b>145,925</b>	<b>151,624</b>	<b>5,699</b>

Source: USDA. Updated March 2023

**GLOBAL BARLEY EXPORTERS**

USDA, MARCH 2023 ('000 METRIC TONNES)

	2018-19	2019-20	2020-21	2021-22	2022-23F	Yr/Yr Change
Australia	3,666	3,231	8,007	8,233	8,000	(233)
E.U.	5,809	7,579	8,558	6,362	6,000	(362)
Russia	4,320	5,141	5,691	3,100	5,300	2,200
Canada	2,269	2,520	3,520	1,974	3,000	1,026
Argentina	3,001	2,598	2,458	3,765	2,700	(1,065)
Ukraine	4,407	4,990	5,053	2,710	2,400	(310)
UK	1,406	1,397	1,280	784	1,200	416
Kazakhstan	1,762	1,292	1,028	571	700	129
Uruguay	62	45	241	262	150	(112)
U.S.	101	155	349	75	150	75
Other	332	530	1,187	679	716	37
<b>WORLD TOTAL</b>	<b>27,135</b>	<b>29,478</b>	<b>37,372</b>	<b>28,515</b>	<b>30,316</b>	<b>1,801</b>

Source: USDA. Updated March 2023

**GLOBAL BARLEY IMPORTERS**

USDA, MARCH 2023 ('000 METRIC TONNES)

	2018-19	2019-20	2020-21	2021-22	2022-23F	Yr/Yr Change
China, P.R.	5,181	5,969	12,049	8,282	9,000	718
Saudi Arabia	5,700	7,300	6,100	4,700	4,700	-
N. Africa*	2,137	3,222	3,317	3,018	2,200	(818)
Iran	3,200	2,300	3,700	1,500	2,500	1,000
Middle East**	2,305	2,232	2,439	2,520	2,450	(70)
Turkey	375	1,007	1,634	2,036	1,600	(436)
Japan	1,158	1,253	1,132	1,184	1,200	16
E.U.	1,762	1,089	1,150	1,239	1,500	261
Thailand	206	685	1,043	88	200	112
Vietnam	133	198	747	553	600	47
Brazil	608	647	398	734	500	(234)
Mexico	82	346	499	363	500	137
Colombia	341	308	336	333	300	(33)
U.S.	133	157	137	458	300	(158)
Others	3,814	2,765	2,691	1,507	2,766	1,259
<b>WORLD TOTAL</b>	<b>27,135</b>	<b>29,478</b>	<b>37,372</b>	<b>28,515</b>	<b>30,316</b>	<b>1,801</b>

\*Libya, Tunisia, Algeria, Morocco  
Source: USDA. Updated March 2023

\*\*UAE, Jordan, Qatar, Kuwait, Israel

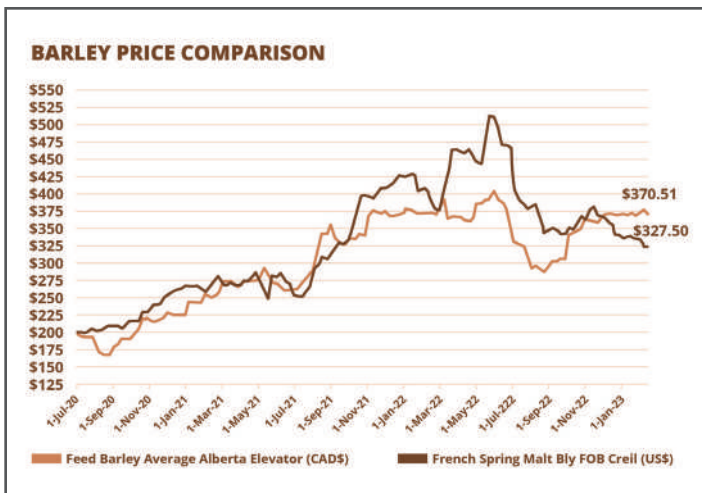




Photo courtesy Allan Feurtado.

Aaron Beattie and Allan Feurtado (centre left and right) with graduate students at barley plots in Saskatoon, SK.

# Rooting out the problem

New research aims to give breeders tools to improve lodging in barley through the plant root.

By Delaney Seiferling

When it comes to growing malting barley in Saskatchewan, producers face many challenges.

But lodging might be the top of the list.

“It’s one of the biggest, if not the biggest, agronomic issue

facing barley,” says Mitchell Japp, SaskBarley’s research and extension manager.

Not only is lodging more common in barley than in other cereal crops grown in Western Canada, it also has more negative effects on the crop, causing problems such as pre-harvest sprouting, decreased yields and increased Fusarium mycotoxin contamination. In addition, a lodged barley crop means more work for the producer, adding expense to their overall operation.

“Lodging really limits producers’ ability to get more out of their barley,” Japp says.

This is why the SaskBarley board decided to partner with



the Western Grains Research Foundation, Saskatchewan's Agriculture Development Fund, Saskatchewan Cattlemen's Association and Alberta Barley to fund research looking at new options for longer-term improvements to lodging in Canadian barley crops.

The research, led by the University of Saskatchewan's Aaron Beattie and National Research Council of Canada's Allan Feurtado, aims to improve lodging resistance in future barley varieties through the root structures of the plant.

In order to do this, the project, which began in 2020, set out to define root traits with the potential to improve lodging resistance in barley varieties and from there, help develop genetic markers that could help produce newer varieties with improved standability and productivity.

This approach is innovative, says Beattie, as the link between root structure and lodging resistance has been under-examined.

"We weren't seeing lodging in the field every year, so we were looking for some other characteristics of the plant that could push us in the right direction to identify more lodging-tolerant plants," he says. "So, from that aspect, this is new for the breeding program."

Since the project started in 2020, the researchers have completed two field seasons and analyzed a number of plant traits in the field that they think could be related to lodging resistance, including height, stem width, thickness and strength. They've also dug up the root systems in the fields and used lab-based phenotyping methods to quantify the characteristics of the roots that are relevant to lodging resistance in the field.

"There have been a couple of traits that have really stood out in terms of how they relate to lodging," Beattie says. "So, those are the ones we've been keying in on now."

Some of the associations they've made to date have been unsurprising, he says, such as the fact that taller plants tend to lodge more often than shorter ones.

But some of the more interesting takeaways have to do with the root structure. For example, there is indication that wider root angles, and lower root solidity may be beneficial, Beattie says.

"Basically, a wider, more

spread-out root system — not necessarily dense with roots — tends to be better associated with lodging resistance," he says.

Another surprising to date was learning that the plants that took more force to bend over in the fields were the ones more likely to lodge.

"If you think of a willow tree versus an oak tree, the willow tree can flex in the wind but it doesn't necessarily fall over," Beattie says. "It would seem like, at least in some barley, that's a good strategy for avoiding lodging as well."

The team has also recently been busy analyzing barley germplasm and cultivars from

all over the world, with a focus on western Canadian ones, to look at diversity in root structures. They've focused on characterizing root system architecture and the shape and spatial arrangement of a crop root system, Feurtado says.

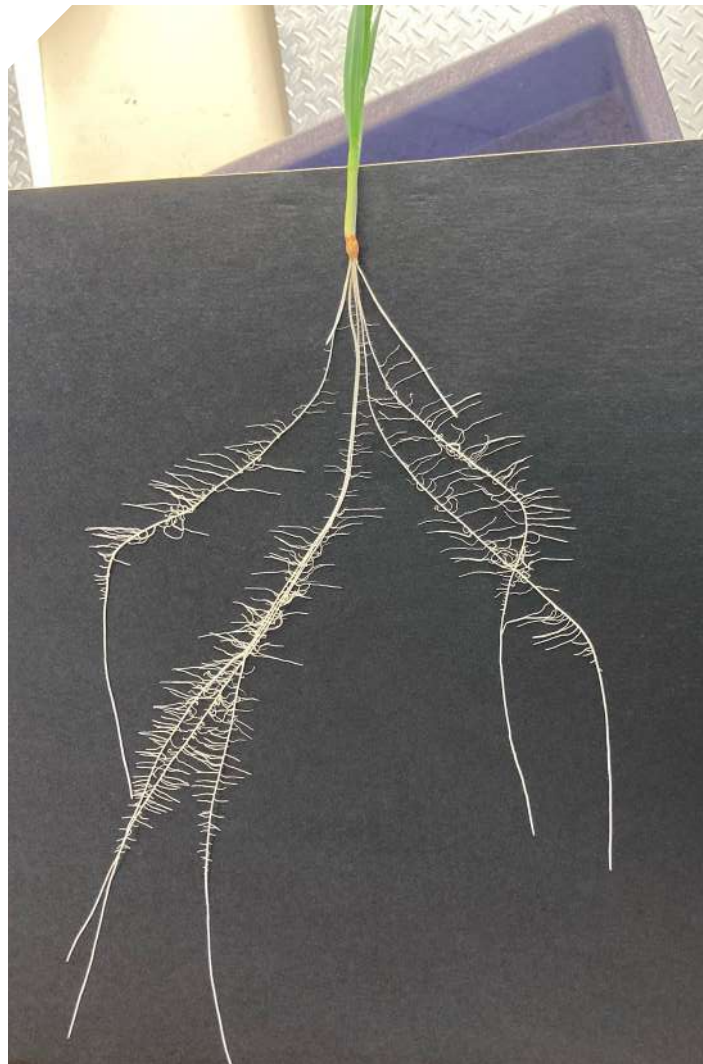
"It's really interesting for us to characterize the diversity in different root system architectures and identify the different shapes that we see in root systems between various cultivars," he says. "Root system shape is critical for not only lodging resistance but also traits such as water and nutrient uptake."

Going forward, the team will conduct further research to verify what they've learned to date about potential sources of lodging resistance and confirm associations between the plant genetics and root structures. By the time the project wraps up in 2024, they hope this data will translate into concrete tools that breeders such as Beattie can use to develop new barley varieties with improved genetic resistance to lodging.

"We have gained good momentum for, ultimately, establishing a toolkit for marker-assisted and genomic selection approaches for development of new barley cultivars with robust standability," Feurtado says.

Overall, this research will provide value to producers, Japp says.

"We hope that lodging resistance will be more common in new varieties, to ensure barley remains a viable crop within producers' rotations," he says. 🌾



**Growing plants in a controlled environment gives an indication of root growth habits, which can be a tool to show which barley varieties are more resistant to lodging.**

*Photo supplied by Mitchell Japp.*

# Getting a handle on BLS

New research aims to help industry identify, quantify and manage new disease threat.

By Delaney Seiferling

**B**arley producers in Western Canada face a number of disease threats in their production each year and right now, that number appears to be growing.

Recent reports have indicated an increasing amount of bacterial leaf streak (BLS), also known as black chaff, detected in barley crops across Western Canada.

Although the disease is a bit better known by our farming neighbours south of the border, the occurrence of BLS in western Canadian crops is troubling, because there's a lot we just don't know yet about the disease, says Mitchell Japp, SaskBarley's Research and Extension Manager.

"It's a topic we don't really have a good handle on."

For example, we don't know just how serious a threat the disease is. Some data has shown that BLS losses are normally less than 10% but can be up to 40% on highly susceptible cultivars and that infection can cause sterile spikes, resulting in major yield losses.

We haven't seen or heard of such severe cases in Canada yet, but we do need to be prepared, Japp says, as we also know that, as a bacterial issue, the disease does not respond to fungicide.

"Until we know which varieties carry resistance, the only way the disease can really be managed is by ensuring you're not planting infected seed."

This is further complicated by the fact that there aren't many seed tests currently available for BLS.

"There are a couple of labs offering tests now, but we don't know how to correlate the results of those tests to indicate what



**One of the key diagnostic features of BLS in crops is the presence of bacterial ooze.**

the risk is," Japp says.

To help us better understand the threat level, prevalence and management options for BLS in Western Canada, SaskBarley decided to fund a research proposal on the topic in 2021.

Led by University of Saskatchewan researcher Randy Kutcher and in collaboration with experts across Canada, the project aims to establish a method of testing seed for BLS, while also determining the current levels of the disease in Western Canada and screening barley germplasm to understand current

levels of resistance available.

Researchers have made considerable progress to date, says Constanza Fleitas, a University of Saskatchewan (U of S) researcher with the project.

Because BLS was quite prevalent in the province in 2022, the team was able to collect a number of samples from across the province. Some samples were also sent by producers and crop specialists. From these samples, the team was able to obtain local isolates for future studies. Local isolates are crucial because they are tested for virulence and then



used for screening lines in field nurseries. One field nursery will be established in Outlook, SK, this crop season. Another field nursery will be in Lacombe, AB, at AAFC's Lacombe Research and Development Centre.

The team has also tested several different inoculation protocols and screened a number of registered barley varieties for BLS resistance in growth cabinets at the U of S.

This year, the team will screen for BLS-resistant elite barley lines from the U of S Crop Development Centre in-field disease nurseries to identify the most promising lines, Fleitas says.

“Our aim is to identify BLS-resistant or at least less susceptible lines that are close to becoming field-ready cultivars. In 2023, we will also score registered barley varieties in the current variety guide for BLS resistance levels to detect less susceptible cultivars, which is critical information for producers and seed growers.”

Overall, the team expects that, when the project wraps up in 2025, there will be immediate and tangible benefits for Saskatchewan producers, including a seed test that can be used as a foundational pillar for clean seed programs.

“A seed testing program will help us evaluate the risk associated with a certain seed lot, so the producer knows whether it's a low-risk situation or a high-risk situation,” Fleitas says.

The team already has some preliminary results from grain samples from one of the collaborators, Sean Walkowiak with the Canadian Grain Commission's Grain Research Laboratory. The next steps will be to examine the thresholds that might represent an issue in the field.

Ultimately, the data collected throughout the project will help determine the prevalence and virulence of BLS strains, which will indicate the extent of the problem to pathologists,



Photos supplied by Constanza Fleitas.

**Infected barley taken from field trials in Melfort in 2022.**

agronomists, breeders and producers as well as other stakeholders in the value chain.

All this information will help give producers options for management and prevention of BLS in Western Canada,

Japp says.

“Right now we don't really know how big a threat this disease is. That's part of why SaskBarley supported this project.” 🇨🇦



Photos supplied by Constanza Fleitas.

**Water-soaked lesions later turn chlorotic in BLS-infected plants.**



# Optimize your barley production

New barley varieties hold much potential for producers. Here's how can you unleash it, while also optimizing fertilizer rates.

by Mitchell Japp

**N**itrogen fertilizer is an expensive crop input, but it has an excellent return on investment. The challenge for producers is finding the balance between optimizing nitrogen rates for yield, without causing

challenges like lodging or high protein.

AC Metcalfe and CDC Copeland have been dominating the barley production area for a long, long time. The slow but steady transition to new varieties like AAC Synergy, AAC Connect and CDC Frasers represent 13-19 years of genetic

improvements. The new malt barley varieties are higher yielding and have lower protein, increased lodging resistance and improved disease resistance compared to varieties like CDC Copeland and AC Metcalfe. However, the management package that worked for AC Metcalfe and



*A constant challenge for barley producers is finding the balance between optimizing nitrogen rates for yield, without causing challenges like lodging or high protein.*



CDC Copeland will not realize the genetic potential of the new varieties.

The Northeast Agriculture Research Foundation and East Central Research Farm/ Parkland College have been leading research on input management for the new barley varieties. In the Barley MAX project, funded by SaskBarley and Saskatchewan Agriculture, trials are conducted at multiple locations across Saskatchewan and so far the research is showing a positive response to increased management. Early indications clearly show that the new varieties respond to higher rates of nitrogen than AC Metcalfe. The increased yield potential of the varieties allows room for targeting higher yields with increased nitrogen fertilizer rates, while mitigating the risk of protein that exceeds malt specifications.

Still, nitrogen is an expensive input and should be managed judiciously. The 4Rs, a guideline for using fertilizer inputs most efficiently, have become the industry best management practice. The guiding principles of the 4Rs include applying fertilizer at the right time, the right rate, in the right place and using the right source or form. Environmental losses — including nitrous oxide (N<sub>2</sub>O), the nitrogen (N) form receiving all the attention right now — will be minimized by using 4R practices. Limiting environmental losses of N is good for the farm balance sheet too, so win-win.

Generally, the right time is

### Right Source

Matches fertilizer formulation to crop needs




### Right Rate

Matches amount of fertilizer type to crop needs




### Right Time

Makes nutrients available when crops need them



### Right Place

Keep nutrients where crops can use them



*4R Nutrient Stewardship is a program from Fertilizer Canada which aims to help producers employ responsible fertilizer use, while maximizing outputs.. Credit: Canola Council of Canada.*

applying all N at seeding, or close to the time of seeding. Fall-applied nitrogen can be reasonably effective as well, but is best applied when the soil is cold to keep the nitrogen in more environmentally stable forms. Applying at seeding aligns well with the rapid uptake of N when the plant is actively growing.

The right rate can be best determined by testing soil for background nutrient concentration and setting reasonable yield targets for

the area and variety being grown. Soil testing should include a sampling regime that is suitable for the field and management practices. A blanket application approach is fairly straightforward, but employing precision agriculture management will require a more intensive sampling strategy.

The right place is generally in a furrow, sealed from the atmosphere and close enough to the seed to be readily available, but not so close to risk damage to the seed. This application method will

minimize losses and make the most effective use of nitrogen fertilizer. If alternate placement is required, that may influence decisions about what form is used and when.

The right source/form should be aligned with the time and place. Urea or liquid UAN are suitable for N applied at seeding, placed in a furrow. Anhydrous ammonia works well for fall applications, if soil conditions are optimal to prevent gaseous losses by sealing the furrow. Enhanced efficiency fertilizer (EEF) products control the release of nitrogen into the environment. EEF can help to prevent N losses, including N<sub>2</sub>O, but will be most economically beneficial when the application timing or place cannot be optimized. For example, occasions when broadcast fertilizer is required are ideal times to use an enhanced efficiency N product.

An increase in N fertilizer rates is needed to fully realize the genetic gains of new barley varieties. Research like the Barley MAX project will help establish guidelines for setting new N target rates. The final report on the project will be available later this year.

Using research like Barley MAX will help to improve the economic competitiveness of barley. Using appropriate rates, along with the other 4R management practices, will minimize losses to the environment, which is an economic win for producers as well. 🌱



Photos courtesy of Armoury Brewing Company

Left to right: Head brewer Liam Edwards, and co-owners Brennan Lampitt and Jackson Tady.

# Brewing local pride

North Battleford brewery celebrates its farming roots through craft beer

By Melanie Epp

**B**rennan Lampitt, 38, co-founder of Armoury Brewing Company in

North Battleford, SK, clearly remembers the first time he tasted craft beer. It was 10 years ago, and he and his wife were on a snowboarding trip out west, having lunch with a friend in Vancouver. When Lampitt asked for a Kokanee, his friend promptly cancelled the order and traded it up for a locally brewed craft beer. Brennan was blown away by

the flavour and complexity of the beer — and by the fact that it was brewed locally with home-grown ingredients. From that moment forward, he began exploring the world of craft beer and dreaming of someday opening his own brewery. Today, Brennan is one of five co-owners of North Battleford's first microbrewery, Armoury Brewing Co.

Armoury Brewing Co.'s story begins in 2016 when Gregg Tady, 53, and Brad Taylor, 51, purchased the city's old armoury. Built in 1913, the building was rundown and had been on the market for ages. Brennan heard the news and was surprised to learn that it was his uncle and a friend who had made the purchase. They were talking about



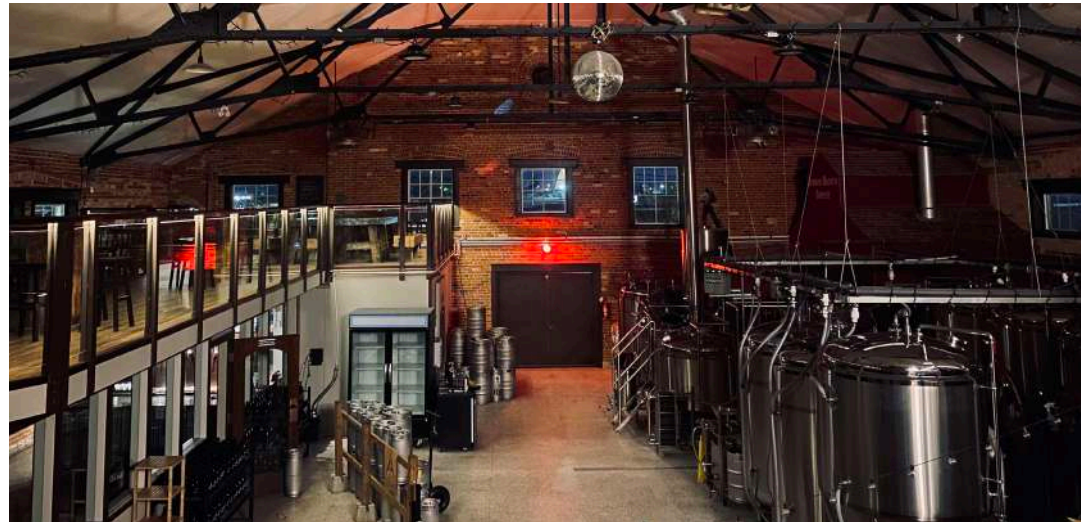
putting in a microbrewery, a dream Brennan still longed to fulfill. Conversations were had and Brennan, along with his cousins Jackson Tady and Wade Voigt, joined forces with the armoury's new owners and worked to bring it back to its former glory.

A microbrewery was a good fit for North Battleford. Nearly everyone in the approximately 20,000-person strong farming community has some relationship with agriculture. Wade's father was a grain farmer, for instance, and Brennan's dad sold tractors for a living.

"We're in the middle of a bunch of great soil, so when the farmers are doing good, we feel it in town," Lampitt explains.

Folks in North Battleford also love their beer, but until recently, they didn't have a source of local pride. Putting Saskatchewan barley into a North Battleford bottle was bound to be a success.

It took two years to



*Armoury Brewing Co., based in North Battleford's old armoury, is the city's first microbrewery.*

renovate the old armoury. When it was done, the brewery's taproom became a living museum that paid tribute to the city's rich history. It's not just the façade that pays tribute to the region, but also the malt. Matt Enns, owner of the Rosthern, SK-based Maker's Malt, prides himself on utilizing local grain in his malt — and Armoury Brewing Co. is proud to

showcase it in their beer. The two companies even have worked collaboratively to create a hyper-local beer, Czech Your Six. The malt used in the beer comes from grain that was grown on land farmed by their neighbours, the Charabins. Lampitt's uncle once farmed the same land.

The combination of regional flavours served in a historical monument gives Armoury

Brewing Co. a hometown feel. Lampitt said that was the aim.

"We wanted this place where the guy that pumps your gas and the guy that works on your teeth can leave their hat at the door and sit down and have a beer together," he says. "And I feel that we're doing a pretty good job of that."

Armoury Brewing Co.'s taproom is open Tuesday to Saturday. 🍻

## What's on tap at **Armoury Brewing Company**



**BLACK DIAMOND PILS**  
4.5% abv

Armoury Brewing Co.'s house pilsner. Tricking the senses, this light tasting lager pours jet black.



**JUICY IPA**  
6.1% abv

Plenty of fruity hops in a pint of Armoury Brewing Co.'s house IPA.



**BLONDE**  
5.0% abv

This blonde beer was Armoury Brewing Co.'s introduction to the world of craft beer.



**JAM SESSION**  
4.3% abv

Brewed year-round, this brew includes adjuncts such as wheat and oats.



**CZECH YOUR SIX**  
4.3% abv

A seasonal, easy-drinking blonde beer made with Maker's Malt barley and Charabins' wheat.

**THE SASKATCHEWAN BARLEY  
DEVELOPMENT COMMISSION:**

The Saskatchewan Barley Development Commission was established in 2013 under the Agri-Food Act, 2004

**SASKATCHEWAN BARLEY DEVELOPMENT  
COMMISSION (SASKBARLEY)**

Jill McDonald, Executive Director  
Direct Tel: 306-370-7237  
jmcdonald@saskbarley.com

**OFFICE HOURS:**

Monday to Friday  
8:30 a.m. - 4:30 p.m.

**SASKBARLEY OFFICE:**

212 - 111 Research Drive  
Saskatoon, SK S7N 3R2  
General Inquiries: 306-653-7232

Return undeliverable Canadian addresses  
to the below address

**SASKBARLEY OFFICE:**

212 - 111 Research Drive  
Saskatoon, SK S7N 3R2  
General Inquiries: 306-653-7232