

# 2024 BARLEY SYMPOSIUM FROM THE GROUND UP PROGRAM

## Sunday, February 25

TIME	TOPIC	DETAILS
6 – 9 p.m.	Registration and social	Terrace Lounge

## Monday, February 26

TIME	TOPIC	DETAILS
8:30 – 11:30 a.m.	<b>Registration</b>	Battleford Foyer
9 – 11 a.m.	Canadian Light Source — Synchrotron <i>(optional tour, limited to 30 participants)</i>	Meet in the lobby
11:30 a.m. – 12:25 p.m.	<b>LUNCH and WELCOME REMARKS</b>	
12:25 – 1:05 p.m.	<b>Session 1:</b> <b>Emerging Biotic Threats</b> <i>Diseases, insects and vertebrates, and weed pressure is always changing.</i>	
	<b>Barley and wheat's impact on fungal pathogen populations</b> — Reem Aboukhaddour, AAFC, Lethbridge  <b>Fusarium species and mycotoxin diversity in barley from Manitoba: Implications for Fusarium head blight management</b> — Xiben Wang, AAFC- Morden	
1:05 – 2:25 p.m.	<b>Session 2:</b> <b>Advances in established biotic threat management</b> <i>Continual pressure from established diseases, insects and weeds add to the pressure facing barley farmers.</i>	
	<b>A locus providing race-specific scald resistance in barley is highly variable for R-gene content</b> — Samuel Holden, University of British Columbia	
	<b>Evaluation of heritage barley varieties as sources of resistance to fusarium head blight and deoxynivalenol accumulation</b> — James Tucker, AAFC- Brandon	
	<b>The effectiveness of sources of scald resistance in barley differentials and Canadian barley varieties</b> — Kelly Turkington, AAFC- Lacombe	
2:25 – 3:05 p.m.	<b>Session 3:</b> <b>New technology to advance variety development and agronomy</b> <i>Investigating new technology that can be adapted to traditional farm management and breeding activities can save time and resources.</i>	
	<b>Reference-level genome assemblies and comparative analysis of five representative Canadian barley cultivars</b> — Ana Badea, AAFC- Brandon	
	<b>An evaluation of genomic and phenotypic prediction in barley preliminary yield trials</b> — Raja Khanal, AAFC-Ottawa	

*All meals and presentations for the symposium will be held in the Battleford Room unless otherwise noted.*

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## Monday, February 26 (cont.)

3:05 – 3:35 p.m.	<b>BREAK</b>	
3:35 – 4:25 p.m.	<p style="text-align: center;"><b>Keynote</b> <i>Canada and Innovation Competitiveness: How are we doing?</i> Stuart Smyth, University of Saskatchewan</p>	
4:25 – 4:40 p.m.	<p style="text-align: center;"><b>Grad student poster 3-min presentations</b></p>	
4:40 – 5:35 p.m.	<p style="text-align: center;"><b>Poster Session and social</b></p>	<p style="text-align: center;"><i>Odd numbered posters “present” Convention Foyer</i></p>
5:35 – 6:30 p.m.	<p style="text-align: center;"><b>Poster Session and social</b></p>	<p style="text-align: center;"><i>Even numbered posters “present” Convention Foyer</i></p>
6:30 – 7:30 p.m.	<b>NETWORKING AND SOCIAL</b>	

## Tuesday, February 27

TIME	TOPIC	DETAILS
7 – 8 a.m.	<b>BREAKFAST</b>	
	<p style="text-align: center;"><b>Session 3 continued:</b> <b>New technology to advance variety development and agronomy</b> <i>Investigating new technology that can be adapted to traditional farm management and breeding activities can save time and resources.</i></p>	
8 – 9:20 a.m.	<p><b>Accelerated plant breeding</b> — Hakimeh Emamgholi Begli, Global Institute for Food Security</p> <p><b>Evaluation of barley (<i>Hordeum vulgare</i> L.) stem and root traits that influence lodging</b> — Michael W. Taylor, University of Saskatchewan</p> <p><b>Induction of HVPGB1 as a potential tool to enhance resilience to excess moisture in barley</b> — Ana Badea, AAFC- Brandon</p> <p><b>A Swiss Army knife for barley: Optimized genotyping tools for genetics and breeding in barley</b> — Antoine Gagnon, Université Laval</p>	
9:20 – 10:10 a.m.	<p style="text-align: center;"><b>Producer panel</b> <b>“Connecting the research community with the farm”</b></p> <p style="text-align: center;">Moderator: Kevin Hursh    Panel: Gordon Moellenbeck (<i>SaskBarley</i>), Sheila Elder (<i>MCA</i>), David Bishop (<i>Alberta Grains</i>)</p>	
10:10 – 10:40 a.m.	<b>BREAK</b>	

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Tuesday, February 27 (cont.)

10:40 a.m. – 12 p.m.	<p><b>Session 4:</b> Progress in variety development and agronomy <i>The traditional approach includes boots on the ground and hands in the pan.</i></p>
	<p><b>Unlocking the genetic potential of feed barley for the Prairies</b> — <i>Yadeta Kabeta, Field Crop Development Centre</i></p> <p><b>Genome-wide-association and targeted transcriptomic analyses reveal loci and candidate genes regulating preharvest sprouting in barley</b> — <i>Gurkmal Kaur, University of Manitoba</i></p> <p><b>Analyzing performance trials to identify genetic and environmental contributors to Ontario barley improvement</b> — <i>Lewis Lukens, University of Guelph</i></p> <p><b>GROW Barley</b> — <i>Canadian Barley Research Coalition</i></p>
12 – 1:10 p.m.	<p><b>LUNCH</b> ANNOUNCEMENTS: • <i>International Barley Genetics Symposium</i> • <i>Student poster awards</i></p>
1:10 – 1:30 p.m.	<p><b>Session 5:</b> Ag sustainability in Western Canada <i>Sustainable production in Canada and beyond.</i></p>
	<p><b>Carbon footprint analysis of Saskatchewan and Canadian field crops and comparison to international competitors</b> — <i>Nancy Tout, Global Institute for Food Security</i></p>
1:30 – 2:30 p.m.	<p><b>Session 6:</b> Barley fit for purpose — quality, feed, food, malt and other end uses <i>Barley beyond production. Barley for the consumer.</i></p>
	<p><b>Impact of Adding Water to a Barley-Based Finishing Feedlot Diets on Cattle Feeding Behaviour and Ruminal Fermentation</b> — <i>Catherine Seidle, University of Saskatchewan</i></p>
	<p><b>Functional characterization of a barley thaumatin-like protein using CRISPR-Cas9</b> — <i>Cali Kaye, McGill University</i></p> <p><b>Interplay of starch debranching enzyme and its inhibitor is mediated by redox-activated SPL transcription factor</b> — <i>Jaswinder Singh, McGill University</i></p>
2:30 – 3 p.m.	<p><b>BREAK</b></p>
3 – 3:40 p.m.	<p><b>Session 6 (continued):</b> Barley fit for purpose – quality, feed, food, malt and other end uses <i>Barley beyond production. Barley for the consumer.</i></p>
	<p><b>The microscopic morphology of barley grain</b> — <i>Matthew Bakker, University of Manitoba</i></p> <p><b>Arabinoxylans in Canadian malting barley varieties: their quantification and structural changes during malting and brewing</b> — <i>Marta Izydorczyk, Canadian Grain Commission</i></p>
3:40 – 3:50 p.m.	<p><b>CLOSING REMARKS</b></p>

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# 2024 BARLEY SYMPOSIUM

# FROM THE GROUND UP

# POSTERS

Posters have been randomly assigned numbers. Poster presenters with odd numbers are asked to be at their posters from 16:40 to 17:35 and presenters with even numbers are asked to be at their posters from 17:35 to 18:30. Student posters are tagged with an asterisk (\*) beside the number.

1	<b>Raja Khanal,</b> <i>AAFC- Ottawa</i>	Pathogenicity of <i>Fusarium graminearum</i> and <i>F. poae</i> causing Fusarium head blight in barley under controlled conditions
2	<b>Beverly Lynch,</b> <i>University of Saskatchewan</i>	Evaluating reconstituted high moisture barley with variable kernel size and different rolling severity on ensiling characteristics and in-vitro ruminal fermentation
3	<b>Thomas Kelly Turkington,</b> <i>AAFC-Lacombe</i>	The impact of water volume, seeding rate, and fungicide timing on leaf disease severity, fusarium head blight, and productivity of malting barley
4*	<b>Rui Wang,</b> <i>University of Manitoba</i>	Genome-wide association study of preharvest sprouting associated alpha-amylase activity in barley
5*	<b>Vinuri Weerasinghe,</b> <i>University of Manitoba</i>	Understanding the bacterial endophytic microbiome in barley grains to manage fusarium head blight disease
6*	<b>Molla Hailu,</b> <i>University of Alberta</i>	Cover crop establishment with grain crops in the Canadian prairies
7	<b>Tricia McMillan,</b> <i>Canadian Grain Commission</i>	Effects of recent weather conditions on the Canadian prairies on the malting quality of barley
8*	<b>Amanjeet Singh,</b> <i>University of Manitoba</i>	Extrusion Texturization of Air-Classified Barley Protein: A Sustainable Plant-Based Meat Alternative
9*	<b>Anuradha Jayathissa,</b> <i>University of Manitoba</i>	Impacts of <i>Fusarium graminearum</i> on malt quality
10	<b>Hiroshi Kabota,</b> <i>AAFC-Lacombe</i>	Opportunities to use remote sensing to predict the risk of lodging in barley
11	<b>Arzoo Sharma,</b> <i>Canadian Grain Commission</i>	Exploring the role of recent drought conditions on the Canadian prairies on starch content and starch-related physical characteristics of malting barley
12	<b>Kui Liu,</b> <i>AAFC- Swift Current</i>	Responses of genetically diversified barley varieties to nitrogen fertilization on the Canadian Prairies
13	<b>Yueshu Li,</b> <i>Canadian Malting Barley Technical Centre</i>	Effects of Fusarium Growth on Malt Quality and Deoxynivalenol (DON) Formation during the Malting Process
14	<b>Uzzal Liton,</b> <i>AAFC-Brandon</i>	Diagnostic molecular markers for waterlogging tolerance in barley

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# FROM THE GROUND UP POSTERS

15	<b>Ishita Patel,</b> <i>Northeast Agriculture Research Foundation</i>	<b>Getting the most out of malt barley</b>
16	<b>Ruijiao Kang,</b> <i>University of Saskatchewan</i>	<b>Synchrotron-based X-ray imaging to identify Fusarium-damaged kernels in Barley</b>
17	<b>Ana Badea,</b> <i>AAFC-Brandon</i>	<b>Towards development of a phenomics pipeline for barley at AAFC-BRDC</b>
18	<b>Jennifer Zantinge,</b> <i>Field Crop Development Centre</i>	<b>Development and genetic characterization of nested association mapping (NAM) populations representing western Canadian and global elite varieties.</b>
19	<b>Gursahib Singh,</b> <i>Irrigation Crop Diversification Centre</i>	<b>Can winter barley be grown in central Saskatchewan?</b>
20*	<b>Vipin Tomar,</b> <i>Université Laval</i>	<b>Additive Main Effect and Multiplicative Interaction Analysis (AMMI) for Yield in Eastern Canada Malting Barley Breeding Program</b>
21	<b>Ana Badea,</b> <i>AAFC-Brandon</i>	<b>Phytochemical characterization of several Canadian barley cultivars and elite germplasm</b>
22	<b>Ana Badea,</b> <i>AAFC-Brandon</i>	<b>Recent breeding successes at Agriculture and Agri-Food Canada's Brandon Research and Development Centre</b>
23	<b>Luis Ponce- Molina,</b> <i>University of Saskatchewan</i>	<b>Evaluation of FHB in barley and wheat under speed breeding conditions</b>
24	<b>Lipu Wang,</b> <i>University of Saskatchewan</i>	<b>Detection and differentiation of <i>Xanthomonas translucens</i> pv. <i>translucens</i> and pv. <i>undulosa</i> from wheat and barley by duplex quantitative PCR</b>
25*	<b>Jujhar Singh Gill,</b> <i>University of British Columbia</i>	<b>Understanding the stochastic impacts of Fusarium head blight (FHB) in barley</b>
26	<b>Sajid Rehman,</b> <i>Field Crop Development Centre</i>	<b>Identification of sources of resistance to scald (<i>Rhynchosporium commune</i>) and of related genomic regions using genome-wide association in a mapping panel of spring barley</b>



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