



# AUSTRALIAN BARLEY TECHNICAL SYMPOSIUM

Harvesting the  
Potential of Barley

12 - 15 August 2024 | Adelaide, South Australia



## ABTS 2024 PROGRAM

*\*Please note this program is subject to change \*\*All times are in ACST*

### SUNDAY 11 - MONDAY 12 AUGUST 2024

Pre-Symposium Field Trip

### MONDAY 12 AUGUST 2024

6:00pm – 9:00pm

#### Welcome Reception

Koomo Restaurant – Level 10, Crowne Plaza Adelaide Hotel

Sponsored by AGT

### TUESDAY 13 AUGUST 2024

#### ABTS Symposium Opening

8:30am – 8:40am

Acknowledgement of Country & Opening of Symposium

**Stewart Coventry**

8:40am – 8:55am

Grains Australia Update

**Richard Simonaitis, Grains Australia**

8:55am – 9:05am

Ministers Address

**Hon Clare Scriven MLC**

<b>SESSION 1: SETTING THE SCENE</b>	
<b>9:05am – 9:20am</b>	An overview of Global Barley Supply & Demand <b>Jonathon Evans, Viterra</b>
<b>9:20am – 9.35am</b>	Challenges in agronomy & farming systems: research prospective <b>Dr Kenton Porker, CSIRO</b>
<b>9:35am – 9:50am</b>	On farm sustainability <b>Andrew Slatter, Virdis Ag</b>
<b>9:50am – 10:05am</b>	Barley R&D landscape <b>Prof. Matthew Tucker, University of Adelaide</b>
<b>10:05am – 10:20am</b>	Malting & brewing sustainability <b>Trevor Perryman, Vice Chair SEABAC</b>
<b>10:20am – 10:50am</b>	<b>MORNING TEA</b>
<b>SESSION 2: MALTING AND BREWING</b>	
<b>10:50am -11:20am</b>	<b>KEYNOTE:</b> Overview of ABInBev's global activities with a particular focus on sustainability in the brewing industry <b>Dr. Nikki Else, ABInBev</b>
<b>11:20am – 11:40am</b>	Total protein content or protein composition: which is best for selecting malting grade barley? <b>Prof. Glen Fox, University of California</b>
<b>11:40am – 12:00pm</b>	Why Is Malting Barley So Complicated? <b>John Stuart, Graincorp Operations Ltd</b>
<b>12:00pm – 12:15pm</b>	Malt Quality Requirements for the Japanese Beer Market <b>Kenichiro Haruna, Asahi Beer Malt co., LTD.</b>
<b>12:15pm – 12:30pm</b>	Understanding and accounting for variation when phenotyping for malting quality in barley breeding <b>Silvina Baraibar, InterGrain</b>
<b>12:30pm – 1:30pm</b>	<b>LUNCH</b>

<b>SESSION 2: MALTING AND BREWING CONTINUED</b>	
<b>1:30pm – 1:45pm</b>	Craft beer industry in Japan – its market trend and technical issues <b>Dr Kensuke Ogushi, National Research Institute of Brewing</b>
<b>1:45pm – 2:00pm</b>	Beer, bugs, and sustainability, Pt2 <b>Dr Megan Edwards, Integral Nutrition (S) Pty Ltd</b>
<b>SESSION 3: BARLEY TRADE</b>	
<b>2:00pm – 2:15pm</b>	Export markets for quality barley & sustaining a competitive advantage <b>Mary Raynes, AEGIC</b>
<b>2:15pm – 2:30pm</b>	Title - TBC <b>Simon Roberston, Boortmalt</b>
<b>2:30pm – 3:00pm</b>	Title - TBC <b>Jane Wardle, CBH Group</b>
<b>3:00pm – 3:30pm</b>	<b>AFTERNOON TEA</b>
<b>SESSION 4: NEW INSIGHTS IN MALTING</b>	
<b>3:30pm – 3:40pm</b>	New Insights session introduction <b>TBC</b>
<b>3:40pm – 3:45pm</b>	Advancing sustainable malting practices: Aquaporins as potential breeding targets for improved water uptake during controlled germination of barley ( <i>Hordeum vulgare</i> L.) <b>Clare O'Lone, Edith Cowan University</b>
<b>3:45pm – 3:50pm</b>	Identification and characterisation of the molecular drivers of malting performance in <i>Hordeum vulgare</i> <b>Bryan Hau, The University of Western Australia</b>

PANEL SESSION	
3:50pm – 4:30pm	End User Sustainability Panel <b>Convenor: Trevor Perryman, Vice Chair SEABAC</b> <b>Panelists: Dr. Nikki Else, ABInBev, Simon Robertson, Boortmalt, Jane Wardle, CBH Group &amp; Dr Doug Stewart, Coopers Brewery</b>
4:30pm – 6:00pm	<b>Free Time</b> Transport to Networking Function TBA from 6:00pm
6:30pm – 11:00pm	<b>Networking Function - Little Bang Brewing</b> Sponsored by Barrett Buston Malting & RAGT

## WEDNESDAY 14 AUGUST 2024

### SESSION 5: BARLEY AGRONOMY & FARMING SYSTEMS

9:00am – 9:30am	<b>KEYNOTE:</b> Is barley better adapted to severe stress conditions than wheat? And comparisons of 2 and 6 row barley <b>Prof. Gustavo Slafer, University of Lleida</b>
9:30am – 9:45am	Redefining flowering times of barley and wheat for future climates <b>Dr Felicity Harris, Charles Sturt University</b>
9:45am – 10:00am	Developing frost and heat stress damage functions for barley in APSIM Next Generation <b>Dr Pengcheng Hu, CSIRO</b>
10:00am – 10:15am	Yield determinants of spring barley in Western Australian growing environment <b>Dr Hammad Khan, Department of Primary Industries &amp; Regional Development</b>
10:15am – 10:30am	Increase in Australian barley grain yield aligns to modification in root allocation within the soil profile <b>Dr. Mariano Cossani, Sardi</b>
10:30am – 11:00am	<b>MORNING TEA/POSTER VIEWING</b>

SESSION 5: BARLEY AGRONOMY & FARMING SYSTEMS	
11:00am – 11:30am	The performance of barley in the farming systems of southern NSW <b>Dr John Kirkegaard, CSIRO Canberra</b>
11:30am – 11:45am	Striking the balance: defining the relationship between management, grain yield, and grain quality in barley <b>Blakely Paynter, Department of Primary Industries and Regional Development</b>
11:45am – 12:05pm	Evaluating barley hay yield and quality to determine its potential role as a dual purpose crop <b>Mick Faulkner, Agrilink Agricultural Consultants</b>
12:05pm – 12:25pm	Where have all the barley hectares gone? <b>Dr. Andrew Barr, Farmer and Grain Industry Consultant</b>
12:25pm – 1:15pm	LUNCH/POSTER VIEWING
SESSION 6: BARLEY BREEDING	
1:15pm – 1:45pm	<b>KE YNOTE:</b> Advancing Brewing Science <b>Adj. Prof. Birgitte Skadhauge, Carlsberg Research Laboratory</b>
1:45pm – 2:05pm	Barley breeding contribution to barley-malt-beer industry sustainability <b>Dominique Vequaud, Secobra Recherches</b>
2:05pm – 2:25pm	Fast and Focused: Breeding Better Barley for the Developing World under Climate Change <b>Dr Miguel Sanchez-Garcia, Icarda</b>
2:25pm – 2:40pm	Grain yield improvements of barley varieties released in Australia between 1968 and 2022 <b>Dr Paul Telfer, Australian Grain Technologies</b>
2:40pm – 2:55pm	Are breeding programs delivering value for money for the Australian Barley Industry? <b>David Moody, Intergrain</b>
2:55pm – 3:10pm	RAGT creating solutions to barley growers needs <b>David Leah, RAGT</b>
3:10pm – 3:40pm	AFTERNOON TEA/POSTER VIEWING

**SESSION 6: BARLEY BREEDING**

<b>3:40pm – 4:00pm</b>	Improve genetic gain through the understanding of genotype x environment interactions in spring barley <b>Maëva Bicard, UniLasalle</b>
<b>4:00pm – 4:15pm</b>	Using Drones to Predict the Hidden Half of Barley <b>Dr Samir Alahmad, The University Of Queensland</b>
<b>4:15pm – 4:25pm</b>	Fast-Tracking Access to New Plant Genetic Resources through the Australian Grains Genebank Strategic Partnership <b>Dr Sally Norton, Australian Grains Genebank, Agriculture Victoria</b>
<b>4:25pm – 4:35pm</b>	Investigating Australian barley breeding population to identify haplotypes associated with leaf rust resistance <b>Madhav Pandit, The University of Queensland</b>

**PANEL SESSION**

<b>4:35pm – 5:15pm</b>	Raw Materials Sustainability Panel <b>Convenor: Simon Tickner, Wimmera Grain Farmer</b> <b>Panelists: Adj. Prof. Birgitte Skadhauge, Carlsberg Research Laboratory, Dr John Kirkegaard, CSIRO Canberra &amp; Dr Kenton Porker, CSIRO</b>
<b>5:15pm – 6:00pm</b>	<b>ABTS Inc Annual General Meeting</b>

**FREE EVENING**

## THURSDAY 15 AUGUST 2024

### SESSION 7: BIOTIC STRESS TOLERANCE

8:30am – 8:45am	Exotic incursion of the barley leaf rust pathogen <i>Puccinia hordei</i> carries insensitivity to DMI fungicides <b>Dr Mumta Chhetri, The University of Sydney</b>
8:45am – 9:00am	Resistance to Australian foliar pathogens in ICARDA barley breeding germplasm <b>Dr Laura Ziems, The University of Sydney</b>
9:00am – 9:15am	Pathogenic variation of <i>Pyrenophora teres</i> f. <i>teres</i> in Australia since 2020 <b>Dr Xuechen Zhang, Queensland Department of Agriculture and Fisheries</b>
9:15am – 9:30am	Stacking multi-disease resistance haplotypes from a collection of Eastern European barley accessions sourced from the Australian Grains GeneBank <b>Dr Peter Dracatos, La Trobe University</b>
9:30am – 9:40am	Development of an international host differential set for spot form net blotch in barley <b>Dr Ramaharithreddy Dadu, Agriculture Victoria</b>
9:40am – 9:50am	Achieving durable resistance to Net Form Net Blotch in barley via gene pyramiding <b>Dr Xuan Hoan Dinh, Curtin University</b>
9:50am – 10:05am	Using AI to rapidly develop disease resistant barley <b>Dr Eric Dinglasan, The University of Queensland</b>
10:05am – 10:35am	MORNING TEA

### SESSION 8: ABIOTIC STRESS TOLERANCE

10:35am – 11:05am	<b>KEYNOTE:</b> The good, the bad, and the ugly: hunting for novel diversity in wild barley <b>Dr Anna Backhaus, ICARDA</b>
11:05am – 11:20am	Unravelling root growth responses to salt stress in barley <b>Dr Megan Shelden, The University of Adelaide</b>

11:20am – 11:30am	Genetic improvement of nitrogen use efficiency in barley via gene editing <b><i>Sakura Thennakoon Mudiyansele, Murdoch University</i></b>
11:30am – 11:40am	Exploring genetic variation for root architecture in global and Australian barley <b><i>Prof. Lee Hickey, The University of Queensland</i></b>
11:40am – 11:50am	Unravelling Aluminium Toxicity in Barley: Understanding Physiological and Molecular Insights into Altered Stomatal Kinetics Caused by Guard Cell Aluminium Accumulation <b><i>Dr Chenchen Zhao, University of Tasmania</i></b>
11:50am – 12:00pm	Agronomic effects of HvDEP1-V in field-grown barley ( <i>Hordeum vulgare</i> ) <b><i>Hien Minh (Jean) Vu, University of Adelaide</i></b>
12:00pm – 1:00pm	LUNCH
SESSION 9: GENETICS & GENOMICS	
1:00pm – 1:30pm	<b><u>KE YNOTE:</u></b> The International Barley Pan Genome <b><i>Dr Nils Stein, Leibniz Institute Of Plant Genetics And Crop Plant Research (IPK)</i></b>
1:30pm – 1:50pm	The genetic basis of malt quality <b><i>Dr. Christoph Dockter, Carlsberg Research Laboratory</i></b>
1:50pm – 2:10pm	Speeding up gene discovery in barley mutants using whole genome shotgun sequencing <b><i>Dr. Miriam Schreiber, James Hutton Institute, International Barley Hub</i></b>
2:10pm – 2:25pm	The Australian Barley Pan Genome <b><i>Prof. ChengDao LI, Murdoch University</i></b>
2:25pm – 2:35pm	Trait-Linked Markers in the Genomics Era <b><i>Dr Kerrie Forrest, Agriculture Victoria</i></b>
2:35pm – 2:55pm	Rapid domestication - a new approach for accelerating exploitation of wild barley genomes to improve complex traits <b><i>Dr. Scott Boden, University of Adelaide</i></b>
2:55pm – 3:25pm	AFTERNOON TEA



## SESSION 10: NEW INSIGHTS IN GENETICS

<b>3:25pm – 3:50pm</b>	Developing a next generation of Barley Scientists <b>Prof. Robbie Waugh, University of Dundee/James Hutton Institute</b>
<b>3:50pm – 4:10pm</b>	ARC training centre for future crops <b>A/Prof. Stuart Roy, The University of Adelaide</b>
<b>4:10pm – 4:20pm</b>	Harnessing Strigolactones to Improve Barley Architecture and Yield <b>Jack Kelly, The University of Adelaide</b>
<b>4:20pm – 4:25pm</b>	Genome-wide association study for identification of marker-trait association conferring resistance to scald from globally collected barley germplasm <b>Usman Ijaz, University of Tasmania</b>
<b>4:25pm – 4:30pm</b>	Genome engineering root systems to drought-proof Australian barley <b>Richard Dixon, The University of Queensland</b>
<b>4:30pm – 4:45pm</b>	New Barley Genomic Resources in the Australian Grains Genebank: Delivering Transformative Impact to the Australian Barley Industry <b>David Chisanga, Agriculture Victoria</b>
<b>4:45pm – 5:00pm</b>	<b>Symposium Wrap Up</b>
<b>5:00pm – 7:00pm</b>	<b>Free Time</b> <b>Transport to Symposium TBA from 6:30pm</b>
<b>7:00pm – 11:00pm</b>	<b>ABTS Symposium Dinner – Adelaide Zoo</b> Sponsored by Coopers Brewery

# POSTERS

*The below Posters will be available for viewing throughout the duration of the ABTS Symposium. An allocated poster session will be held on Wednesday 14 August during the lunch break between 12:25pm – 1:15pm*

An integrated modelling and physiological approach to assist breeding for improved yield stability in barley  
**A/Prof. Karine Chenu, University of Queensland**

Fee for Service Analysis Providing an Insight into Malt Accreditation and the Future of Barley Breeding  
**Hayley Lewis, The University of Adelaide**

The three Ds of fungicide dynamics for the stewardship of chemistries and genetic disease resistance.  
**Jordi Muria Gonzalez, Curtin University**

Utilising novel genetic diversity to increase barley yields nationally  
**Dr Anh Pham, University of Adelaide**

The Molecular Insights of Barley Response to Waterlogging Stress and the Screening of Key Gene Mutants  
**Dr Feifei Wang, Yangzhou University**

Genome-wide association studies reveal novel essential loci for grain size in two-rowed barley (*Hordeum vulgare* L.)  
**Prof. Rugen Xu, Yangzhou University**

Assessing the Frequency and Impact of the HvHKT1;5 P189 Variant Allele on Barley Grain Sodium Accumulation and Malt Quality.  
**Harley Young, The University of Adelaide**

Rapid phenotyping of adult plant resistance to net form net blotch in barley  
**Dr Xuechen Zhang, DAFQueensland**

Service Australian barley industries with an innovative MultiMalter  
**Dr Qisen Zhang, AEGIC**

Effect of BYDV on barley crop production: A precise assessment of agronomic traits reductions under variable disease severities  
**Dr Chenchen Zhao, University of Tasmania**

Plant phenotyping: A key to improving plants' stress tolerance  
**Prof. Meixue Zhou, University of Tasmania**

The use of fertiliser to mitigate waterlogging damage to barley  
**Prof. Meixue Zhou, University of Tasmania**

OzBarley: from genome to phenome and back again  
**Prof. Matthew Tucker, The University of Adelaide**

The Paul Johnston Memorial Award: Supporting Future Leaders  
**Amanda Box, & Elysia Vassos, Trustees of the Paul Johnston Memorial Trust**

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