



AUSTRALIAN
BARLEY
TECHNICAL
SYMPOSIUM
INC.

18–21
September
2011

Hilton Adelaide Hotel
South Australia

Barley for Business

The 15th Australian Barley Technical Symposium

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Program

Sunday 18 September

1700-2030	Registration open	Gallery Foyer
1830-2030	Welcome Reception	Gallery Foyer
2030-midnight	Hospitality Suite open <i>Supported by Carlton United Brewers, Coopers and The South Australian Brewing Company</i>	Balcony Rooms 1-4

Monday 19 September

0815-0845	Registration & Arrival coffee	Gallery Foyer
0815-1730	Trade Display open	Gallery Foyer
0845-0900	Opening Ceremony & Welcome <i>Sponsored by The University of Adelaide</i>	Ballrooms A&B
	Opening Address Professor Robert Hill, Executive Dean of Sciences, The University of Adelaide	
0900-1100	BARLEY FOR BUSINESS – PLANT BREEDING Chair: Andreas Betzner, GRDC, ACT	Ballrooms A&B
0900-0915	<i>Barley for business - InterGrain</i> Dr Bryan Whan, Intergrain, WA	
0915-0930	<i>The Seedmark barley research program – introducing new genetics to Australia</i> Dr Ian Edwards, Edstar Genetics Pty Ltd/Seedmark, WA	
0930-0945	<i>Progress on malting barley breeding in Sapporo Breweries - from the past to the future</i> Dr Makoto Kihara, Sapporo Breweries, JAPAN	
0945-1000	<i>Malteurop</i> Mrs Anna Marie Andersen, Malteurop, NEW ZEALAND	
1000-1015	<i>GrainSearch Pty Ltd</i> Mr Clinton Rogers, GrainSearch Pty Ltd, VIC	
1015-1030	<i>DEEDI</i> Ms Ros Ferguson, DEEDI, QLD	
1030-1045	<i>University of Adelaide barley breeding</i> A/Professor Jason Eglinton, The University of Adelaide, SA	

1045-1100	Panel discussion and questions	
1100-1130	Morning Tea	Gallery Foyer
1130-1300	THE CHANGING RESEARCH INVESTMENT LANDSCAPE Chair: Roger Leigh, Waite Research Institute, SA	Ballrooms A&B
1130-1200	<i>National barley RDE and the GRDC Perspective</i> Mr Peter Roberts, Chair GRDC Western Panel, WA	
1200-1230	<i>Private investment and incorporated structures in research</i> Mr Michael Gilbert, ACPFG, SA <i>Speaker sponsored by ACPFG</i>	
1230-1300	<i>NIAB TAG - Addressing the crop development pipeline</i> Dr Tina Barsby, NIAB TAG, UNITED KINGDOM	
1300-1400	Lunch <i>Sponsored by Barrett Burston Malting Co</i>	Gallery Foyer
1400-1530	THE GLOBAL PERSPECTIVE 1 Chair: Gary Hughes, Viterra, SA	Ballrooms A&B
1400-1445	<i>Consolidation of global brewing and the barley value chain</i> Dr Idelet Meijering, SAB Maltings (Pty) Ltd, SOUTH AFRICA	
1445-1530	<i>Global barley & malt supply and demand</i> Mr Dean Smith, Rabobank	
1530-1600	Afternoon Tea	Gallery Foyer
1600-1710	THE GLOBAL PERSPECTIVE 2 <i>Sponsored by GrainCorp</i> Chair: John Stuart, GrainCorp, NSW	Ballrooms A&B
1600-1640	<i>Chinese Barley Industry Overview</i> Mr Joe Fung, Supertime Development Limited	
1640-1710	<i>The Evolution of Barley Australia</i> Mr Andrew Gee, Barley Australia	
1710-1900	Hospitality Suite open <i>Supported by Carlton United Brewers, Coopers and The South Australian Brewing Company</i>	Balcony Rooms 1-4
1900-2300	Informal Dinner <i>Supported by The South Australian Brewing Company</i>	Adelaide Oval

Program

Tuesday 20 September

0800-0830	Registration & Arrival coffee	Gallery Foyer
0800-1730	Trade Display open	Gallery Foyer
0830-0900	"THE ELEVATOR PITCH 1" Chair: Greg Platz, Agri-Science Queensland, QLD 0830-0833	Ballrooms A&B
0830-0833	<i>GSR dependent herbicide responses in barley cultivars</i> Ms Courtney Ramsey, SARDI, SA	
0834-0837	<i>Drought environment types for rain-fed barley in Australia – interpreting genotype-environment interaction by modelling water-deficit patterns</i> Dr Karine Chenu, The University of Queensland, QLD	
0838-0841	<i>Proteinaceous toxins in net blotch disease of barley</i> Mr Ismail Ismail, The University of Adelaide, SA	
0842-0845	<i>Identification of a novel BVG gene conferring an extremely short basic vegetative period in barley</i> Dr Yanhao Xu, Murdoch University, WA	
0846-0849	<i>The evaluation of salt tolerance and exploitation of elite alleles in Tibetan plateau annual wild barley</i> Dr Guoping Zhang, Zhejiang University, CHINA	
0850-0853	<i>Quantitative trait loci for salinity and waterlogging tolerance in a barley cross between TX9425 and naso nijo</i> A/Professor Meixue Zhou, University of Tasmania, TAS	
0854-0857	<i>An introduction to Genesys – a one-stop shop</i> Mr Greg Grimes, NSW Primary Industries, Australian Winter Cereal Collection, NSW	
0900-1030	INCREASING PRODUCTIVITY: SALT TOLERANCE Chair: Reg Lance, Intergrain, WA	Ballrooms A&B
0900-0930	<i>Improving salinity tolerance traits in barley</i> Dr Stuart Roy, ACPFG, SA	

0930-0950	<i>Effective screening methods for salinity tolerance: pot experiments but not hydroponics are plausible models of salt tolerance in barley</i> Dr Ehsan Tavakkoli, The University of South Australia, SA	
0950-1010	<i>Profiling antioxidant activity in salt-stressed barley roots: implications for breeders</i> Professor Sergey Shabala University of Tasmania, TAS	
1010-1030	<i>Australia-China collaborative research on barley abiotic stress tolerance</i> Dr Chengdao Li, Government of Western Australia, WA	
1030-1100	Morning Tea	Gallery Foyer
1100-1300	REDUCING PRODUCTION COSTS: PATHOLOGY Chair: Rob Wheeler, SARDI, SA	Ballrooms A&B
1100-1110	<i>Current and future trends of barley pathology in Western Australia</i> Dr Kithsiri Jayasena, Department of Agriculture and Food, WA	
1110-1120	<i>Barley pathogens in South Australia – current threats and future challenges</i> Dr Hugh Wallwork, SARDI, SA	
1120-1130	<i>Current and future pathology issues for Victoria and southern New South Wales.</i> Mr Mark McLean, Department of Primary Industries, VIC	
1130-1140	<i>Barley diseases in the northern region- the evolution of resistance</i> Mr Greg Platz, Agri-Science Queensland, QLD	
1140-1220	<i>A new generation of maps and markers for barley in Australia</i> Professor Diane Mather, The University of Adelaide, SA	
1220-1240	<i>Mapping RPH20: A gene conferring adult plant resistance to leaf rust in barley</i> Mr Lee Hickey, The University of Queensland, QLD	
1240-1300	<i>Statistical Machine Learning (SML) QTL analysis for disease resistance traits in barley breeding lines</i> Dr Wendy Lawson, Queensland Government, QLD	
1300-1400	Lunch & Poster viewing	Gallery Foyer & Ballroom C

Program

Tuesday 20 September (continued...)

1400–1540	REDUCING PRODUCTION COSTS: CROP INPUTS Chair: Blakely Paynter, Department of Agriculture and Food Western Australia, WA	Ballrooms A&B
1400–1440	<i>Improving phosphorus use efficiency in barley</i> Dr William Bovill, The University of Adelaide, SA	
1440–1500	<i>Agronomic (row space, seed depth, seed quality) and environmental factors change herbicide safety of new barley varieties in the Mallee</i> Mr Kenton Porker, SARDI, SA	
1500–1520	<i>Barley varieties differ in coleoptile length and emergence from deep sowing</i> Dr Neil Fettell, University of New England, NSW	
1520–1540	<i>Increasing the odds in achieving malting barley using precision agriculture</i> Mr Mark Branson, D & J Branson, SA	
1540–1550	Break	Ballrooms A&B
1550–1700	MICROBREWERY PRESENTATIONS & TASTINGS Chair: Doug Stewart, Viterra, SA	Ballrooms A&B
1550–1625	Lobethal Brewery Alistair Turnbull, Lobethal Bierhaus, SA	
1625–1700	Goodieson Brewery Jeff Goodieson, Goodieson Brewery, SA	
1700–1730	ABTS Annual General Meeting	Ballrooms A&B
1730–midnight	Hospitality Suite open <i>Supported by Carlton United Brewers, Coopers and The South Australian Brewing Company</i>	Balcony Rooms 1-4
Evening	Free night	

Wednesday 21 September

0800–0830	Registration & Arrival coffee	Gallery Foyer
0800–1600	Trade Display open	Gallery Foyer
0830–0900	“THE ELEVATOR PITCH 2” Chair: Rachel Burton, ARC Centre for Excellence in Plant Cell Walls, SA	Ballrooms A&B
0830–0833	<i>The evolution of thiamine and riboflavin during the malting process and the potential effect of these vitamins on the brewing process</i> Mr Barry Hucker, University of Ballarat, VIC	
0834–0837	<i>Controlled mixed grain malting - will it work?</i> Mr Roger Ibbott, Cascade Brewery Company, TAS	
0838–0841	<i>The opportunity and challenge of Onda Pro® barley brewing technology with Australian barley varieties</i> Mr Kevin Redd, University of Tasmania, TAS	
0842–0845	<i>Understanding abiotic stress impacts on barley starch structure and value-added quality through genetic and environmental screening</i> Mr Peter Gous, University of Queensland, QLD	
0846–0849	<i>Improving barley β-glucanase in malt and brewing quality</i> Miss Juanita Lauer-Smith, The University of Adelaide, SA	
0850–0853	<i>SNP-based variety identification for Australian malting barley</i> Dr Julia Brüggemann, The University of Adelaide, SA	
0900–1030	NEW TOOLS AND TECHNOLOGY Chair: Geoff Fincher, ARC Centre for Excellence in Plant Cell Walls, SA	Ballrooms A&B
0900–0945	<i>Barley characterisation with near infrared hyperspectral imaging</i> Professor Marena Manley, Stellenbosch University, SOUTH AFRICA	
0945–1005	<i>Tapping into barley malt associated microbial diversity using next generation sequencing</i> Dr Mandeep Kaur, University of Tasmania, TAS	
1005–1025	<i>Barley germplasm development using hordeum bulbosum</i> Dr Phil Davies, SARDI, SA	
1030–1100	Morning Tea	Gallery Foyer

Program

Wednesday 21 September (continued...)

1100-1230	INCREASING MARKET DEMAND 1 Chair: Trevor Perryman, Malteurop Australia/New Zealand, VIC	Ballrooms A&B
1100-1130	<i>Advances in Canadian barley quality</i> Dr Mike Edney, Canadian Grain Commission, CANADA	
1130-1150	<i>The breeding of LOX-1-less malting barley – Sapporo's worldwide strategy for development of high quality malting barley varieties</i> Mr Takehiro Hoki, Sapporo Breweries Ltd., JAPAN	
1150-1210	<i>Quest for appropriate and attractive barleys for making SHOCHU</i> Mr Jotaro Saho, Sanwa Shurui Co., Ltd, JAPAN	
1210-1230	<i>Impact of mashing-in temperature on extract and fermentability, and the level of wort β-glucan, soluble protein, free amino nitrogen (fan) and lipids</i> Dr Evan Evans, University of Tasmania, TAS	
1230-1340	Lunch & Poster viewing	Gallery Foyer & Ballroom C
1340-1540	INCREASING MARKET DEMAND 2 <i>Sponsored by ARC Centre of Excellence in Plant Cell Walls</i> Chair: Doug Stewart, Viterra, SA	Ballrooms A&B
1340-1420 ARC	<i>Centre of Excellence in Plant Cell Walls: Applications in malting and brewing</i> Professor Geoff Fincher, ARC Centre of Excellence in Plant Cell Wall Biology	
1420-1440	<i>Characterisation of genetic variation for α-amylase alleles in barley</i> Dr Suong Cu, The University of Adelaide, SA	
1440-1500	<i>Overgrowth mutants of barley: new sources of variation in Gibberellin (ga)-related traits including α-amylase production, early vigour, plant height and grain size</i> Dr Peter Chandler, CSIRO, ACT	
1500-1520	<i>The challenge of breeding for grain plumpness in malting barley</i> Mr David Moody, InterGrain Pty Ltd, WA	
1520-1540	<i>Selection of thin cell-wall mutants from a barley tilling population, for reduced steeping during malt production</i> Ms Jennifer Washington, The University of Adelaide, SA	

1540-1610	Afternoon Tea	Gallery Foyer
1610-1730	INCREASING MARKET DEMAND 3 Chair: Mark Goldsmith, Carlton United Brewers, VIC	Ballrooms A&B
1610-1630	<i>Milling Canadian hulless barley varieties for functional food ingredients</i> Dr Marta Izydorczyk, Canadian Grain Commission, CANADA	
1630-1650	<i>Changes in the cell walls of the developing endosperm of barley (hordeum vulgare)</i> Dr Helen Collins, The University of Adelaide, SA	
1650-1730	<i>Barley and human health outcomes</i> Dr David Topping, CSIRO, SA	
1730-1735	Closing Ceremony	Ballrooms A&B
1735-1930	Hospitality Suite open <i>Supported by Carlton United Brewers, Coopers and The South Australian Brewing Company</i>	Balcony Rooms 1-4
1930-midnight	Symposium Gala Dinner <i>Sponsored by Viterra</i> <i>Supported by Carlton United Brewers</i>	National Wine Centre



Posters

Poster Session 1: Tuesday 20 September

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| <p>P001 (Elevator Pitch 1 presentation)
<i>GSR dependent herbicide responses in barley cultivars</i>
Ms Courtney Ramsey, SARDI, SA</p> <hr/> <p>P002 WITHDRAWN</p> <hr/> <p>P003 (Elevator Pitch 1 presentation)
<i>Drought environment types for rain-fed barley in Australia – interpreting genotype-environment interaction by modelling water-deficit patterns</i>
Dr Karine Chenu, The University of Queensland, QLD</p> <hr/> <p>P004 (Elevator Pitch 1 presentation)
<i>Proteinaceous toxins in net blotch disease of barley</i>
Mr Ismail Ismail, The University of Adelaide, SA</p> <hr/> <p>P005 (Elevator Pitch 1 presentation)
<i>Identification of a novel BVG gene conferring an extremely short basic vegetative period in barley</i>
Dr Yanhao Xu, Murdoch University, WA</p> <hr/> <p>P006 (Elevator Pitch 1 presentation)
<i>The evaluation of salt tolerance and exploitation of elite alleles in Tibetan plateau annual wild barley</i>
Dr Guoping Zhang, Zhejiang University, China</p> <hr/> <p>P007 (Elevator Pitch 1 presentation)
<i>Quantitative trait loci for salinity and waterlogging tolerance in a barley cross between TX9425 and naso nijo</i>
A/Professor Meixue Zhou, University of Tasmania, TAS</p> <hr/> <p>P008 <i>A gene-specific PCR marker for detecting acid soil tolerance in barley (hordeum vulgare l.)</i>
Dr Miao Bian, Murdoch University, WA</p> <hr/> <p>P009 <i>Characterisation of the barley V-PPase (HVP10), a candidate gene for salinity tolerance</i>
Ms Jessica Bovill, ACPFG, SA</p> <hr/> <p>P010 <i>Screening for waterlogging tolerance in barley</i>
Ms Sue Broughton, Department of Agriculture and Food WA, WA</p> <hr/> <p>P011 <i>The genetic basis of resistance to stripe rust in Australian barley cultivars</i>
Ms Lida Derevnina, The University of Sydney, NSW</p> | <p>P012 <i>SNP markers for scald resistance introgressions on chromosome 6HS of barley</i>
Mr Peter Eckstein, University of Saskatchewan, Canada</p> <hr/> <p>P013 <i>Breeding for lodging resistance</i>
A/Professor Duane Falk, University of Guelph, Canada</p> <hr/> <p>P014 <i>Development of high salinity tolerant barley</i>
Joanne Tilbrook, ACPFG, SA</p> <hr/> <p>P015 <i>Development of a SNP genotyping array for characterisation of phenology genes in Australian barley germplasm</i>
Mr Stewart Coventry, The University of Adelaide, SA</p> <hr/> <p>P016 <i>Pathotype diversity in the Australian blumeria graminis f.sp. hordei population</i>
Mr Ryan Fowler, Agri-Science Queensland, QLD</p> <hr/> <p>P017 <i>Management of traits and genes involved in adaptation of barley to north-eastern Australia</i>
Professor Jerome Franckowiak, Department of Employment, Economic Development and Innovation, QLD</p> <hr/> <p>P018 <i>Genetic diversity and population structure of Australian bipolaris sorokiniana isolates</i>
Miss Maree Horne, QLD</p> <hr/> <p>P019 WITHDRAWN</p> <hr/> <p>P020 <i>Can non-targeted application of propiconazole improve malt barley yield and quality?</i>
Dr Rigas Karamanos, Viterro, Canada</p> <hr/> <p>P021 <i>Benchmarking reproductive frost tolerance in Australian barley and wheat varieties</i>
Mr Michael Laws, The University of Adelaide, SA</p> <hr/> <p>P022 <i>A gene or gene cluster controlling adult plant resistance to leaf rust on chromosome 5HS</i>
Dr Chengdao Li, Department of Agriculture and Food WA, WA</p> <hr/> <p>P023 <i>Genotyping by targeted genome sequencing in barley</i>
Dr Timothy March, The University of Adelaide, SA</p> <hr/> <p>P024 <i>Can Bipolaris Sorokiniana be the cause of black point symptoms in barley?</i>
Dr Anke Martin, University of Southern Queensland, QLD</p> <hr/> <p>P025 <i>Managing malting barley specifications with Precision Agriculture</i>
Mr Nigel Metz, SEPWA, WA</p> <hr/> <p>P026 <i>The evolving face of barley breeding and pre-breeding in Australia</i>
Mr David Moody, InterGrain Pty Ltd, WA</p> |
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Posters

Poster Session 1: Tuesday 20 September (continued...)

- Po27** *Stem rust resistance is rendered ineffective in the northern summer*
Mr Greg Platz, Agri-Science Queensland, QLD
- Po28** *The effects of fungicide application on barley varietal performance under disease pressure*
Mr Kenton Porker, SARDI, SA
- Po29** *Performance of new barley varieties in wider rows: to graze or not to graze?*
Mr Kenton Porker, SARDI, SA
- Po30** *Tissue- and age- specific responses of barley roots to salinity and oxidative stress*
Professor Sergey Shabala, University of Tasmania, TAS
- Po31** *Engineering enhanced aluminium resistance in barley by genetic modification with the FRD3 gene of Arabidopsis*
A/Professor Meixue Zhou, University of Tasmania, TAS
- Po32** *Development of a soil bioassay screening system for acid soil tolerance in barley*
A/Professor Meixue Zhou, University of Tasmania, TAS
- Po62** *Marker Assisted Selection for CCN and Malt Extract*
Mr James Preuss, The University of Adelaide Barley Program, SA
- Po63** *Effect of tissue targeted expression of alanine aminotransferase on nitrogen use efficiency in barley*
Dr Mamoru Okamoto, ACPFG, SA
- Po64** *Genotypic differences in kernel brightness in barley*
Dr Tefera Angessa, The University of Western Australia, WA

Poster Session 2: Wednesday 21 September

- Po33** **(Elevator Pitch 2 presentation)**
The evolution of thiamine and riboflavin during the malting process and the potential effect of these vitamins on the brewing process
Mr Barry Hucker, University of Ballarat, VIC
- Po34** **(Elevator Pitch 2 presentation)**
Controlled mixed grain malting - will it work?
Mr Roger Ibbott, Cascade Brewery Company, TAS
- Po35** **(Elevator Pitch 2 presentation)**
The opportunity and challenge of Onda Pro® barley brewing technology with Australian barley varieties
Mr Kevin Redd, University of Tasmania, TAS
- Po36** **(Elevator Pitch 2 presentation)**
Understanding abiotic stress impacts on barley starch structure and value-added quality through genetic and environmental screening
Mr Peter Gous, University of Queensland, QLD
- Po37** **Elevator Pitch 2 presentation)**
Improving Barley β -glucanase in malt and brewing quality
Miss Juanita Lauer-Smith, The University of Adelaide, SA
- Po38** WITHDRAWN
- Po39** **(Elevator Pitch 2 presentation)**
SNP-based variety identification for Australian malting barley
Dr Julia Brüggemann, The University of Adelaide, SA
- Po40** *Time changes on starch structure in germinating barley grains*
Dr Shang Chu, The University of Queensland, QLD
- Po41** WITHDRAWN
- Po42** *Identification of candidate genes for malting quality and seed dormancy on barley chromosome 5H*
Dr Chengdao Li, Department of Agriculture and Food WA, WA
- Po43** WITHDRAWN

Posters

Poster Session 2: Wednesday 21 September (continued...)

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| <p>Po44 <i>Development of DNA markers for malting barley breeding</i>
Dr Makoto Kihara, Sapporo Breweries Ltd, JAPAN</p> <p>Po45 <i>Screening for novel starch traits and beta-glucan content using NIRS</i>
Mrs Catherine Margach, The University of Adelaide, SA</p> <p>Po46 <i>Overgrowth mutants of barley: phenotypes of selected overgrowth alleles in a sloop genetic background</i>
Ms Bahar Miraghazadeh, CSIRO, ACT</p> <p>Po47 <i>Pilot Brewing Australia: a key link in the malting accreditation system</i>
Mr Ralph Nischwitz, Barrett Burston Malting Co, VIC</p> <p>Po48 <i>CDC Meredith, CDC Reserve and CDC Kindersley - newest crop development centre, University of Saskatchewan two row malting barley varieties.</i>
Professor Brian Rossnagel, University of Saskatchewan, CANADA</p> <p>Po49 <i>The road to hulless malting barley varieties at the Crop Development Centre, University of Saskatchewan – from CDC Mcgwire to CDC Explus and HBO8304</i>
Professor Brian Rossnagel, University of Saskatchewan, CANADA</p> <p>Po50 <i>Crop Development Centre, University of Saskatchewan hulless food barley varieties – from CDC Candle and CDC Alamo to CDC Mcgwire, CDC Rattan, CDC Fibar and CDC Hilose</i>
Professor Brian Rossnagel, University of Saskatchewan, CANADA</p> <p>Po51 <i>Barley becomes a full-fledged and independent brewing raw material with Novozymes Ondea® Pro enzyme technology</i>
Dr Niels Elvig, Novozymes A/S, DENMARK</p> <p>Po52 <i>National Pilot Malting Facility</i>
Mr Allen Tarr, Department of Agriculture and Food WA, WA</p> <p>Po53 <i>Comparison of low-volume, high throughput assays for the estimation of (1,3;1,4)-β-glucan</i>
Ms Jennifer Washington, The University of Adelaide, SA</p> <p>Po54 <i>Development of low phytic acid barley through integration of mutation, marker assisted selection and doubled haploid techniques</i>
Dr Chengdao Li, Department of Agriculture and Food WA, WA</p> <p>Po55 <i>Hormonal control of barley germination and malting quality</i>
Dr Meredith Wilkes, The University of Sydney, NSW</p> | <p>Po56 <i>Can differential transcription of candidate genes explain quantitative trait loci for the concentration of (1,3;1,4)-beta-glucans in barley grain?</i>
Mr Sie Chuong Wong, The University of Adelaide, SA</p> <p>Po57 WITHDRAWN</p> <p>Po58 <i>Expression and purification of barley limit dextrinase inhibitor in E. Coli</i>
Dr Xiao-Qi Zhang, Murdoch University, WA</p> <p>Po59 <i>DP or DP Enzymes: Which one should be selected in the breeding programs?</i>
Dr Xiao-Qi Zhang, Murdoch University, WA</p> <p>Po60 <i>Assessment of a digital imaging system for determining black point and kernal colour on barley</i>
Mr Gary Bloustien, Agri-Science Queensland, QLD</p> <p>Po61 <i>Long range PCR, deep parallel sequencing and multiplexed Maldi-TOF mass spectrometry reveals new SNP variants associated with starch functional properties</i>
Dr Daniel Waters, Southern Cross University, NSW</p> |
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