



20TH AUSTRALIAN AGRONOMY CONFERENCE

AGRONOMY

SYSTEM SOLUTIONS FOR COMPLEX PROBLEMS

18-22 SEPTEMBER 2022, EMPIRE THEATRE, TOOWOOMBA, QLD

WWW.AGRONOMYCONFERENCE.COM



PROGRAM

V27 as at 21 July 2022

Sunday 18 September 2022	
4:00pm - 6:00pm	Registration and information desk open
5:00pm - 8:00pm	<p>Welcome reception Empire Theatre Proudly sponsored by: Toowoomba Regional Council</p>  <p>TOOWOOMBA REGION Rich traditions. Bold ambitions.</p>

* Program is subject to change

Monday 19 September 2022					
7:30am - 4:30pm					
<p style="text-align: center;">Registration and information desk open Barista coffee carts open from 7:30am - 3:30pm</p>					
<p style="text-align: center;">Conference welcome Auditorium</p>					
<p style="text-align: center;">Donald Oration: From white pegs to silicon chips: Fifty years (1973-2022) of Australian agronomy Auditorium</p>					
<p style="text-align: center;">Keynote presentation 1 Professor Laurie Drinkwater Auditorium</p> <p style="text-align: right;"><i>Keynote proudly sponsored by DAF and DES</i></p>					
10:30am - 11:00am					
<p style="text-align: center;">Morning tea Lawn</p>					
11:00am - 12:30pm	Concurrent Session 1A	Concurrent Session 1B	Concurrent Session 1C	Concurrent Session 1D	Concurrent Session 1E
Theme	Nitrogen management in systems	Summer crops in winter?	Pulse agronomy to manage abiotic stress	Traits for improved winter cereals 1	Sustainable tropical pasture systems
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
11:00	<p><i>Using novel nitrogen management systems to solve a complex problem (549)</i> Dr James Hunt, La Trobe University</p>	<p><i>Transformational agronomy by growing summer crops in winter: Winter sown sorghum (520)</i> Dr Daniel Rodriguez, The University of Queensland</p>	<p><i>Water stress negatively impacts reproductive success in chickpea and lentil (556)</i> Dr Fernanda Dreccer, CSIRO</p>	<p>Symmetric competition between neighbours explains genetic gains in wheat yield (467) Dr Mariano Cossani, SARDI</p>	<p><i>Experimental stylo accessions produce higher yields than commercial pasture legume varieties on light textured soils in southern Queensland (522)</i> Mr Gavin Peck, Department of Agriculture and Fisheries, Queensland</p>
11:05					
11:10					
11:15					
11:20					
11:25	<p><i>Comparison of the 'Nitrogen Bank', Yield Prophet® and national average nitrogen fertiliser rates on yield and gross margins of wheat (359)</i> Dr Elizabeth Meier, CSIRO Agriculture and Food</p>	<p><i>Transformational agronomy by growing summer crops in winter: Water productivity of dryland sorghum on the Liverpool Plains, NSW (568)</i> Ms Loretta Serafin, NSW DPI</p>	<p><i>Modelling frost and heat risk in the critical period for faba bean and lentil (383)</i> Dr Lachlan Lake, SARDI</p>	<p><i>Evaluation of harvest index as an indirect early generation selection trait for yield in winter wheat (545)</i> Mr David Cann, La Trobe University</p>	<p><i>Adoption of better agronomic practices for improving establishment of pasture legumes in the sub-tropics (477)</i> Miss Louise Walker, Department of Agriculture and Fisheries, Queensland</p>
11:30					
11:35					
11:40	<p><i>Cropping intensity and crop choice influence long-term mineral N cycling and balance within north-eastern farming systems (505)</i> Dr Jon Baird, NSW DPI</p>	<p><i>Transformational agronomy by growing summer crops in winter: Crop establishment in cold soils (594)</i> Dr Joseph Eyre, The University of Queensland</p>	<p><i>Flipping the script on the 'failure bean' story: Faba bean out-yielding in early sowing opportunities (499)</i> Mr Dylan Bruce, SARDI</p>	<p><i>Frequency analysis of environment types associated with late-maturity alpha-amylase for Australian wheat under current and future climates (351)</i> Dr Robert Armstrong, QAAFI</p>	<p><i>Field tolerance to pasture dieback of 26 tropical grass varieties sown into an affected paddock (529)</i> Mr Gavin Peck, Department of Agriculture and Fisheries, Queensland</p>
11:45					
11:50					
11:55	<p><i>Insights on use of deep soil nitrogen tests from long-term moisture probe data in Victorian low and high rainfall crops (478)</i> Dr Ben Jones, Marcus Oldham College</p>	<p><i>Transformational agronomy by growing summer crops in winter: The cropping system and farm profits (551)</i> Dr Andrew Zull, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Are mungbean-compatible wild bradyrhizobia more resilient to abiotic stress? (437)</i> Dr Mandy Christopher, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Assessing early-vigour in oat genotypes for cover crop use in New Zealand (361)</i> Dr Edmar Teixeira, Plant and Food Research Institute, New Zealand</p>	<p><i>Management solutions for pasture dieback: Outcomes of field research (532)</i> Mr Stuart Buck, Department of Agriculture and Fisheries, Queensland</p>
12:00					
12:05					

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12:10	<p><i>Effective use of enhanced efficiency nitrogen fertilizers when applied in sub-surface bands (350)</i> Dr Chelsea Janke, The University of Queensland</p>	<p><i>Transformational agronomy by growing summer crops in winter: Northern NSW (570)</i> Ms Loretta Serafin, NSW DPI</p>	<p><i>Agronomic characteristics of pigeonpea as a summer crop for Queensland (378)</i> Dr Yashvir Chauhan, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Winter cereals for tropical Australia (403)</i> Dr Jack Christopher, QAAFI</p>	<p><i>Determination of the genetic basis for phenological diversity in a heterozygous wild-type accession of <i>Lablab purpureus</i> (475)</i> Dr Donald Loch, The University of Queensland</p>
12:15		<p><i>Transformational agronomy by sowing grain sorghum in winter: Sorghum root growth and function (576)</i> Dr Dongxue Zhao, The University of Queensland</p>			
12:20					
12:25	<p><i>Fertiliser 15N loss increases in response to the N surplus in tropical sugarcane systems (447)</i> Mr Naoya Takeda, Queensland University of Technology</p>	<p><i>Biomass production, water use and root growth of a range of summer cover crop species in a semi-arid cropping environment (598)</i> Dr Shahnaj Parvin, Southern Cross University</p>	<p><i>Mungbean responses to elevated day- and night-time temperatures (346)</i> Dr Alwyn Williams, The University of Queensland</p>	<p><i>Evaluation of reduced height dwarfing gene, <i>Rht1</i> and <i>Rht18</i> for coleoptile length in Durum wheat (430)</i> Mr Ram Devkota, NSW DPI</p>	<p><i>Desmanthus silage: A potential feed resource for the Northern Australian cattle industry (503)</i> Dr Glen Walker, James Cook University</p>
12:30	<p><i>A simple N calculator for achieving water-limited yield of wheat crops (523)</i> Dr Zvi Hochman, CSIRO</p>		<p><i>Protein formation and the critical period for yield in lentil (398)</i> Dr Lachlan Lake, SARDI</p>		
Lunch Lawn					
1:30pm - 3:00pm	Concurrent Session 2A	Concurrent Session 2B	Concurrent Session 2C	Concurrent Session 2D	Concurrent Session 2E
Theme	Reducing N losses	Novel cropping systems 2 - Intercropping	Pulse genotype improvement	Traits for improved winter cereals 2	Improving soil function
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
1:30	<p><i>Low fertiliser nitrogen use efficiency in irrigated cotton cropping systems (547)</i> Prof Peter Grace, Queensland University of Technology</p>	<p><i>The potential for intercropping in Australian farming systems and pathways to adoption (527)</i> Dr Penny Roberts, SARDI</p>	<p><i>Genetic gain in lentil yield between 1988 and 2019 has been larger under stress (349)</i> Prof Victor Sadras, SARDI</p>	<p><i>Combining agronomy and genomics to design future crops (562)</i> Dr Ben Trevaskis, CSIRO</p>	<p><i>Why and how do rainfed crops on sandy soils respond to deep tillage? (603)</i> Dr Murray Unkovich, The University of Adelaide</p>
1:35					
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1:55	<p><i>Importance of timing N application for meeting irrigated cotton demands (563)</i> Dr Tim Weaver, CSIRO</p>	<p><i>Intercropping to exploit winter and summer rainfall for profit in Victoria (405)</i> Dr Garry O'Leary, Agriculture Victoria</p>	<p><i>Decoupling of yield and growth means harvest index is more important to lentil yield under favourable conditions (379)</i> Dr Lachlan Lake, SARDI</p>	<p><i>Genomic prediction to accelerate breeding potential for increased transpiration efficiency in wheat (534)</i> Dr Andrew Fletcher, QAAFI</p>	<p><i>The health and nutrition of Western Australian soils (428)</i> Dr Andreas Neuhaus, CSBP Ltd.</p>
2:00					
2:05					

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2:10	Soil release dynamics and crop recovery of banded urea and Enhanced Efficiency Nitrogen Fertilisers (EENFs) (409) Dr Cristina Martinez, The University of Queensland	Metrics for evaluating intercropping in broadacre farming systems (364) Dr Uttam Khanal, Agriculture Victoria	Agronomic responses of newly bred short season peanut cultivars in a variable subtropical environment (376) Dr Yashvir Chauhan, Department of Agriculture and Fisheries, Queensland	The puzzling role of water soluble carbohydrates in the algorithm of wheat yield (347) Prof Victor Sadras, SARDI	The potential for enhancing soil carbon levels through the use of organic soil amendments in Queensland (434) Mr Johannes Biala, The University of Queensland
2:15					
2:20					
2:25	Exploring the potential for refining sugarcane nitrogen fertiliser management by accounting for climate impacts in the Tully region (387) Mr Jody Biggs, CSIRO	Winter intercropping shows advantages in northeast Victoria (417) Dr Meredith Mitchell, Agriculture Victoria	New lentil varieties allow reduced sowing rates and earlier sowing (514) Dr Jason Brand, Agriculture Victoria	Prediction of wheat leaf appearance through integration of single nucleotide polymorphisms (SNPs) with a crop model (496) Dr Bangyou Zheng, CSIRO	Does applying nutrient enriched organic matter reduce impact of temporal waterlogging on wheat? (390) Dr Katherine Dunsford, Agriculture Victoria
2:30					
2:35					
2:40	A two-step modelling approach to reducing environmental risks in cropping systems: an example with maize rotation (348) Dr Heather Pasley, CSIRO	Water use of cereal, oilseed and grain legume crops within intercropping systems of southern Australia (448) Mr Ashley Wallace, Agriculture Victoria	The importance of plant growth rate during and after waterlogging for lentil (386) Dr Lachlan Lake, SARDI	Digging up the hidden half of Australian barley (463) Dr Mariano Cossani, SARDI	Low levels of group B herbicide residues affect subsequent crop performance on alkaline sandy soils in low rainfall farming systems (480) Mr Bernard Brian Dzoma, SARDI
2:45					
2:50					
2:55	Genotypic response of sugarcane to enhanced efficiency fertilisers (EEF) (542) Mrs Anoma Ranagalage, The University of Queensland	Vegetative competition between crops grown in intercropping systems (414) Mr Brendan Christy, Agriculture Victoria		Effect of nitrogen fertiliser application on canopy architecture in the MAGIC wheat population (382) Dr Eseeri Kisaakye, Tasmanian Institute of Agriculture	Arbuscular mycorrhizae play key role for mungbeans in low phosphorus soil (541) Mr Cameron Silburn, Department of Agriculture and Fisheries, Queensland
Afternoon tea Lawn					
20th Australian Agronomy Conference awards presentation Auditorium					
AGM Auditorium					
Keynote presentation 2 Professor Franck Dayan Auditorium <i>Keynote proudly sponsored by Toowoomba Regional Council</i>					

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Tuesday 20 September 2022					
7:30am - 6:00pm					
Registration and information desk open Barista coffee carts open from 7:30am - 3:30pm					
8:30am - 9:30am					
Keynote presentation 3 Dr Steve Hatfield-Dodds Auditorium <i>Keynote proudly sponsored by GRDC</i>					
9:30am - 10:30am					
Keynote presentation 4 Professor Annette Cowie <i>Keynote proudly sponsored by ACIAR</i>					
10:30am - 11.00am					
Morning tea Lawn					
11:00am - 12:30pm	Concurrent Session 3A	Concurrent Session 3B	Concurrent Session 3C	Concurrent Session 3D	Concurrent Session 3E
Theme	Crop sequencing	Agronomy for managing water	Adaptive agronomy	Crop-nutrient interactions	New generation system modelling
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
11:00	<i>Through the looking glass: Relative performance of farming systems of the future (573)</i> Dr Lindsay Bell, CSIRO	<i>Chickpea response to sowing date and water treatment in southern NSW (524)</i> Dr Lancelot Maphosa, NSW DPI	<i>Evolution and future research needs for progressing Australian cotton systems (358)</i> Dr Michael Bange, GRDC	<i>Mungbeans: Response to applied nitrogen (483)</i> Mrs Jayne Gentry, Department of Agriculture and Fisheries, Queensland	<i>A new generation of APSIM (509)</i> Dr Dean Holzworth, CSIRO
11:05					
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11:20					
11:25	<i>Design of sustainable dryland crop rotations require value judgments (526)</i> Dr Zvi Hochman, CSIRO	<i>Lack of terminal water or heat stress facilitates later optimal flowering periods for barley in Australia (388)</i> Dr Ke Liu, University of Tasmania	<i>Irrigated Bollgard®3 cotton performance in the Gilbert catchment of north Queensland (587)</i> Dr Lance Pendergast, Department of Agriculture and Fisheries, Queensland	<i>Nitrogen dynamics in high-yielding wheat and canola crops (391)</i> Dr Malcolm McCaskill, DJPR	<i>The importance of simulation configuration to crop model development (454)</i> Dr Jonathan Ojeda, Regrow Ag
11:30					
11:35					
11:40	<i>Summer cropping and rotational effects on following winter crops in western Victoria (371)</i> Mr Alexander Clancy, Agriculture Victoria	<i>Chasing water: Increased sowing opportunity with small changes to sowing depth across low and medium rainfall zones of Western Australia (507)</i> Dr Sarah Rich, CSIRO	<i>Predictive models incorporating environmental covariates for genotype x environment x management (GxExM) interactions applied to sorghum agronomy trials (419)</i> Mr Michael Mumford, Department of Agriculture and Fisheries, Queensland	<i>Reliable one-pass nutrition: Mid-row banding high nitrogen rates in irrigated wheat (343)</i> Dr Leigh Vial, Deakin University	<i>Integrating APSIM and PROSAIL to improve prediction of crop traits in various situations from hyperspectral data using deep learning (421)</i> Miss Qiaomin Chen, The University of Queensland
11:45					
11:50					
11:55	<i>Understanding the risk and return of intensifying a rotation with opportunity crops (543)</i> Dr Jeremy Whish, CSIRO Agriculture and Food	<i>An assessment of the temporal sampling frequency of canopy temperature for irrigation scheduling (559)</i> Dr Humaira Sultana, CSIRO	<i>Yield gap of winter pulses in South Eastern Australia (515)</i> Dr Jason Brand, Agriculture Victoria	<i>Reduced grain yield under aerobic rice production is associated with reduced nitrogen uptake (363)</i> Dr Christopher Proud, The University of Queensland	<i>Data-driven modelling for nowcasting of soil water for dryland cropping in Australia (582)</i> Dr Niranjan Wimalathunge, The University of Sydney
12:00					
12:05					
12:10	<i>Break crops revisited (487)</i> Dr John Angus, CSIRO Agriculture and Food	<i>A novel approach for sorghum canopy management in northern NSW (583)</i> Ms Loretta Serafin, NSW DPI	<i>Pod loss assessment methods to quantify yield loss in chickpeas; scoring is quick and correlates with counts (425)</i> Mr Ram Devkota, NSW DPI	<i>Nitrogen budgeting for water quality improvement in pineapple production systems of south eastern Queensland, Australia (567)</i> Dr Stuart Irvine-Brown, Department of Agriculture and Fisheries, Queensland	<i>Combining data-driven models and mechanistic carbon assimilation models to predict sugarcane yield for improved management (521)</i> Ms Si Yang Han, The University of Sydney
12:15		<i>Late, deep root development varies between wheat cultivars subjected to terminal water stress (446)</i> Miss Kanwal Shazadi, QAAFI	<i>Overcoming challenges and exploiting solutions for pulse management in the low rainfall zone (470)</i> Miss Sarah Day, SARDI		
12:20		<i>Transformational agronomy by growing summer crops in winter: Predicting soil temperatures using outputs from crop and climate models (572)</i> Mr Linden Wells, The University of Queensland	<i>Investigating the growth of Imidazolinone-tolerant chickpea in the presence of Imazapic (495)</i> Mr Tendo Mukasa Mugerwa, NSW DPI		
12:25	<i>Does the cropping system influence the optimum crop design in sorghum? (595)</i> Mr Lyle Thomas, The University of Queensland	<i>Analysis of precipitation during maize growth period in Huaibei Plain, China (443)</i> Mr Weiwei Sun, Anhui Agricultural University, China			<i>Modelling intercropping highlights importance of resource competition and possibly direct plasticity effects (397)</i> Dr Faith Githui, Agriculture Victoria
12:30pm - 1:30pm					
Lunch Lawn					

* Program is subject to change

1:30pm - 3:00pm	Concurrent Session 4A	Concurrent Session 4B	Concurrent Session 4C	Concurrent Session 4D	Concurrent Session 4E
Theme	Assessing and managing heat	Phosphorus management	Agronomy for weed suppression	Sensing crops for better decision making	Integrated pasture systems
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
1:30	<p><i>Quantifying progress through kernel development in wheat and barley using spike moisture content (345)</i> Dr Corinne Celestina, La Trobe University</p>	<p><i>Deep P bands – the solution to subsoil decline or just a useful supplement? (511)</i> Prof Michael Bell, The University of Queensland</p>	<p><i>Weed suppressive potential of winter cover crops established as monocultures and multispecies mixtures in southern Australia (512)</i> Dr Saliya Gurusinghe, Charles Sturt University</p>	<p><i>Potential for machine vision of grain crop features for nitrogen assessment (469)</i> Dr Alison McCarthy, University of Southern Queensland</p>	<p><i>Changes in dairy farming systems and their forage base in northern Victoria over the last twenty years (407)</i> Dr Mary-Jane Rogers, Agriculture Victoria</p>
1:35					
1:40					
1:45	<p><i>Development of a barley head loss susceptibility index for Southern Australia (401)</i> Ms Melissa McCallum, SARDI</p>	<p><i>Increasing grain yields in the sub-tropics by deep banding phosphorus (552)</i> Mr Douglas Sands, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Integrated control of wild oat in wheat using time of sowing, seeding rate, and herbicides (451)</i> Prof Bhagirath Chauhan, The University of Queensland</p>	<p><i>Paddock-scale yield estimation using fused PlanetScope and Sentinel-2 imagery and crop modelling (508)</i> Mr Yuval Sadeh, Monash University</p>	<p><i>Development of new pasture systems in NW Victoria (423)</i> Mr Michael Moodie, Frontier Farming Systems</p>
1:50					
1:55					
2:00	<p><i>A field-based technique for screening heat tolerance of wheat lines differing in maturity at matched developmental phases (380)</i> Dr Karine Chenu, The University of Queensland</p>	<p><i>Rate or row spacing? What increases crop P uptake from deep-placement in southern Queensland cropping soils? (607)</i> Dr David Lester, Department of Agriculture and Fisheries, Queensland</p>	<p>Breeding for shoot vigour modifies below-ground architecture and weed competitiveness in wheat (<i>Triticum aestivum</i> L.) (516) Mr Pieter-Willem Hendriks, CSIRO and Charles Sturt University</p>	<p><i>A comparison of remote-sensing vegetation indices for assessing within-field variation of wheat yield (537)</i> Miss Fathiyya Ulfa, The University of Queensland</p>	<p><i>Tropical grass pastures have potential to enhance summer-autumn feed supply and improve profitability in a low rainfall mixed farming system (400)</i> Mrs Kimberley Broadfoot, NSW DPI</p>
2:05					
2:10					
2:15	<p><i>Lipid components of leaf and pollen tissue, a possible biochemical trait for breeding heat-tolerant wheat (<i>Triticum aestivum</i>) (416)</i> Dr Anowarul Bokshi, The University of Sydney</p>	<p><i>Interaction between root architecture, soil moisture and phosphorus placement on cereal productivity (604)</i> Dr Frederik van der Bom, The University of Queensland</p>	<p><i>Manipulating sorghum agronomy to suppress summer grass weeds (533)</i> Dr Michael Widderick, Department of Agriculture and Fisheries, Queensland</p>	<p><i>In-crop nitrogen detection of cotton – turning passive into active with the Hydraspectra™ (457)</i> Prof Daniel Tan, The University of Sydney</p>	<p><i>Strategies to improve establishment of legume pastures to maximise break effects in low-rainfall environments (370)</i> Dr Bonnie Flohr, CSIRO</p>
2:20					
2:25					
2:30	<p><i>Designing a mobile Free-Air Temperature Extreme (FATE) system to impose heat shocks on crops in the field (476)</i> Dr Mahabubur Mollah, Agriculture Victoria</p>	<p><i>Phosphorus dynamics in Vertisols: Improving fertilizer management (560)</i> Dr Nelly Raymond, The University of Queensland</p>	<p><i>Influence of crop rotation on weed seedbank dynamics in Central NSW (565)</i> Dr Shamsul Haque, Charles Sturt University</p>	<p><i>A framework for sensor-based nitrogen management using nutrient dilution and sufficiency (375)</i> Dr André Colaço, CSIRO</p>	<p><i>Cover crops improved fallow efficiency in Queensland (433)</i> Mr Andrew Erbacher, Department of Agriculture and Fisheries, Queensland</p>
2:35					
2:40					
2:45	<p><i>Modelling the interaction between nitrogen and temperature during the critical period of yield in wheat (498)</i> Dr Mariano Cossani, SARDI</p>	<p><i>Strategies to increase phosphorus use efficiency with different nitrogen forms in a tropical cropping system (593)</i> Ms Bianca Das, The University of Queensland and CSIRO</p>	<p><i>Nutrient removal and movement as a result of different HWSC practices (493)</i> Dr John Broster, Charles Sturt University</p>	<p><i>Can we optimise N applications for grains using spatial estimates of N sufficiency? (610)</i> Dr Eileen Perry, Agriculture Victoria</p>	<p><i>Winter cover crop biomass production and water use in southeast Queensland (339)</i> Mr Ismail Garba, The University of Queensland</p>
2:50					
2:55					
2:55	<p><i>Heat-risk assessment for winter wheat using long-term weather data (458)</i> Ms Min Li, Anhui Agricultural University, China</p>				<p><i>Harvesting subterranean clover seed with peanut technology (490)</i> Mr Wesley Moss, The University of Western Australia</p>
					<p><i>Cowpea aphids in lucerne-based pastures and photosensitisation of sheep (456)</i> Ms Jo Powells, Local Land Services</p>

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3:00pm - 3:30pm	Afternoon tea Lawn				
3:30pm - 4:45pm	Concurrent Session 5A	Concurrent Session 5B	Concurrent Session 5C	Concurrent Session 5D	Concurrent Session 5E
Theme	Assessing and managing frost risk	Organic amendments for improved nutrition	Weed ecology and herbicide management	Spatial mapping tools and approaches	Soil and climate constraints to pastures
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
3:30	<i>Estimating the real cost of frost: A field-based frost control treatment using a diesel heater to stop freezing damage (586)</i> Mr Brenton Leske, DPIRD WA	<i>Composted chicken manure incorporated by trenching increased crop performance on sodic grey clay soil (574)</i> Mr Glenn McDonald, DPIRD WA	<i>Germination and development differences between summer and winter annual ryegrass (Lolium rigidum) populations (488)</i> Prof Bhagirath Chauhan, The University of Queensland	<i>Towards incorporating remote sensing in crop modelling for precision agriculture purposes (427)</i> Dr Jonathan Richetti, CSIRO	Soil pH and pasture responses to lime and organic amendments on an acidic soil in south-eastern Australia (410) Dr Guangdi Li, NSW DPI
3:35					
3:40					
3:45	<i>Bacterial ice nucleation activity in rainfall and on crop residues may be increasing frost damage in WA cropping systems (360)</i> Dr Ben Biddulph, DPIRD WA	<i>Identifying the mechanisms controlling crop response to subsoil amelioration with nutrient enriched organic matter (389)</i> Dr Katherine Dunsford, Agriculture Victoria	<i>Fate of Avena sterilis ssp. ludoviciana seeds under different burial depths and wheat residue loads (461)</i> Mr Mohammad Ali, The University of Queensland	<i>Detecting causes of spatial variation in crop yield with interpretive machine learning (558)</i> Dr Patrick Filippi, The University of Sydney	<i>The adaptation of some temperate agricultural, native and weed species to aluminium and manganese ions in acid soils (338)</i> Dr Edwin Wolfe, Charles Sturt University
3:50					
3:55					
4:00	<i>Stubble and senesced leaves are the primary sites of ice nucleation activity in wheat (408)</i> Dr Amanuel Bekuma, DPIRD WA	<i>Can poultry litter supply adequate P nutrition to irrigated cotton in an alkaline Vertosol? (415)</i> Dr Rakesh Awale, Deakin University	<i>Soil amelioration techniques: How they affect weed dynamics and weed seed burial (550)</i> Dr Md Sultan Mia, DPIRD WA	<i>Detection of grain protein in standing wheat crops using hyperspectral sensing (494)</i> Dr Glenn Fitzgerald, Agriculture Victoria	<i>The effect of temperature and cold-moist stratification on seed germination of temperate climate grass and forb prairie species (372)</i> Mr Eric Lyons, University of Guelph, Canada
4:05					
4:10					
4:15	<i>Multi-environment trial analysis: Frost sterility in wheat and barley under Australian frost-prone regions (357)</i> Dr Ariel Ferrante, The University of Adelaide	<i>Spatial patterns of CO2 fluxes across litter amended, non-amended, and native soils on cotton farms in southern NSW (393)</i> Dr Jackie Webb, Deakin University	<i>Getting the best out of Imidazolinone (IMI) herbicides in tight Group B tolerant break and cereal crop rotations (504)</i> Dr Navneet Aggarwal, SARDI	<i>BestiaPop - A Python package to automatically generate and visualise gridded climate data for crop model applications (455)</i> Dr Johnathan Ojeda, Regrow Ag	<i>Farming forecaster: Integrating multiple sources of information for livestock producers (564)</i> Dr Patrick Mitchell, CSIRO Agriculture and Food
4:20					
4:25					
4:30	<i>Reduced nitrogen and seeding rates in frost prone landscapes does not reduce frost damage (540)</i> Dr Ben Biddulph, DPIRD WA	<i>Microscopic benefactors - more than nitrogen: Observations from field samples and trials showing increases in grain size, resistance to pathogens (555)</i> Mr Tabin Brooks, TBMicro	<i>Herbicide resistance in perennial pasture systems - The ostrich has bolted (510)</i> Ms Jo Powells, Local Land Services, NSW	<i>Fusarium crown rot detected in-crop using thermal imagery and quantified reduced water use and yield in bread and durum wheat (464)</i> Mr Mitch Buster, NSW DPI	<i>Barriers restricting emergence of tropical pastures in southern Australia (402)</i> Mrs Kimberley Broadfoot, NSW DPI
4:35					
4:40					
4:35	<i>Effect of different low temperature levels on the developmental characteristics of wheat spikelets (474)</i> Dr Hui Su, Anhui Agricultural University, China	<i>Improving forage productivity for increased livestock production using biochar and green manure amendments (601)</i> Dr Rodrigue Vivien Cao Diogo, University of Parakou, Benin		<i>Above ground biomass and growth across paddocks from space for characterising soil constraints and N availability (609)</i> Dr Eileen Perry, Agriculture Victoria	
4:40					
4:50pm - 5:45pm	Howard Oration Auditorium				
6:30pm - 10:30pm	Conference dinner The Goods Shed				

* Program is subject to change

Wednesday 21 September 2022				
<p align="center">Field tours (lunch provided) (optional - additional registration fee applies) All tours will depart The Goods Shed at 8.30am and return at approximately 4.00pm for the Trade fair networking event.</p>				
8:30am - 4:00pm	<p align="center">Field tour 1 <i>Application of digital technologies in smart farming</i></p>	<p align="center">Field tour 2 <i>Irrigated and dryland cropping systems:</i> How do soil, climate and markets define dryland and irrigated cropping system options on the Darling Downs?</p>	<p align="center">Field tour 3 <i>Integrated crop-livestock systems:</i> How do soil, climate and markets define mixed cropping-grazing systems on the Western Downs?</p>	<p align="center">Field tour 4 <i>Adapting to variability and change:</i> How do farmers from the northern region manage climate variability and prepare for climate change?</p>
4:00pm - 8:00pm	<p align="center">Trade fair networking event The Goods Shed</p>			

* Program is subject to change

Thursday 22 September 2022					
7:30am - 3:00pm					
Registration and information desk open Barista coffee carts open from 7:30am - 1:00pm					
8:30am - 10:00am	Concurrent Session 6A	Concurrent Session 6B	Concurrent Session 6C	Concurrent Session 6D	Concurrent Session 6E
Theme	Diversifying cropping systems	Optimising phenology - cereals	New break crop options	Managing soil constraints 1	Ag tech and data analytics
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
8:30	<p><i>Transformational impacts of dual-purpose canola in mixed farming systems (538)</i> Dr John Kirkegaard, CSIRO Agriculture and Food</p>	<p><i>Comparing flowering time and yield responses of wheat and barley (554)</i> Dr Felicity Harris, NSW DPI</p>	<p><i>The performance and feasibility of carinata in Australia (578)</i> Dr Anthony van Herwaarden, The University of Queensland</p>	<p><i>Soil constraints to crop production: An overview (452)</i> Dr Yash Dang, The University of Queensland</p>	<p><i>Using remote sensing and big data analytics to assess rotation effects on wheat yield across the entire WA wheatbelt (506)</i> Dr Roger Lawes, CSIRO</p>
8:35					
8:40					
8:45					
8:50					
8:55	<p><i>Intercropping improves productivity in low to medium rainfall environments (528)</i> Dr Penny Roberts, SARDI</p>	<p><i>Vernalisation and photoperiod sensitivity of phenologically diverse Australian wheat cultivars (482)</i> Mr Max Bloomfield, La Trobe University</p>	<p><i>Developing sesame as a new heat and drought tolerant summer crop option in northern farming systems (465)</i> Dr Michael Widderick, Queensland Department of Agriculture and Fisheries, Queensland</p>	<p><i>Improving grain yields by ameliorating sodic subsoils in southern NSW (596)</i> Dr Shihab Uddin, NSW DPI</p>	<p><i>A comparison between machine learning and simple mechanistic-type models for yield prediction in site-specific crop yield predictions (530)</i> Dr Dhahi Al-shammari, The University of Sydney</p>
9:00					
9:05					
9:10	<p><i>Cropping systems diversification impacts on farmers soybean yield (492)</i> Mr Santiago Alvarez, Facultad De Agronomia, Universidad de la Republica, Uruguay</p>	<p><i>Apical pruning to delay flowering time and increase yield in early sown spring wheat (599)</i> Dr Kenton Porker, FAR Australia</p>	<p><i>Opportunities for summer crops in non-irrigated winter cropping systems in southern Australia (392)</i> Dr Malcolm McCaskill, DJPR</p>	<p><i>Subsoil water influences cereal response to soil amelioration on sodic vertosol soil in western Victoria (394)</i> Dr Murray Hart, Agriculture Victoria</p>	<p><i>Estimation of plant biophysical parameters using machine learning downscaling (501)</i> Dr Mario Fajardo, The University of Sydney</p>
9:15					
9:20					
9:25	<p><i>Estimating the impact of seasonal weather conditions and farm-level adaptation practices on yield and production value in smallholder agriculture (486)</i> Mr Uwe Grewer, QAAF1</p>	<p><i>Change in abiotic stress and atmospheric CO2 concentration significantly affected Australian wheat productivity over 1981-2018 (445)</i> Dr Karine Chenu, The University of Queensland</p>	<p><i>New legume species as opportunistic summer crops for southern Australia – Part 1: Environmental suitability (411)</i> Mr Brendan Christy, Agriculture Victoria</p>	<p><i>Determining CEC in variable charge soils - what answer do you want? (444)</i> Prof Graeme Blair, University Of New England</p>	<p><i>Increasing farmer awareness of the impact of agriculture on water quality with the 1622WQ app (536)</i> Dr Peter Thorburn, CSIRO</p>
9:30					
9:35					
9:40	<p><i>Agronomic evaluation of the effects of two green manure cover crops on maize (Zea mays) cultivation in four-agroecological zones of Benin (600)</i> Dr Rodrigue Vivien Cao Diogo, University of Parakou, Benin</p>	<p><i>Grain yield response to sowing time, how many different response curves and maturity groups are there? (585)</i> Dr Ben Biddulph, DPIRD WA</p>	<p><i>New legume species as opportunistic summer crops for southern Australia – Part 2 Exploring global germplasm for increasing crop adaptation (481)</i> Ms Audrey Delahunty, Agriculture Victoria</p>	<p><i>ConstraintID: A free web-based tool for spatial diagnosis of soil constraints (450)</i> Dr Yash Dang, The University of Queensland</p>	<p><i>Why ethics will be important for agricultural professionals as the agtech sector develops (337)</i> Dr Elizabeth Read, Ag Institute Australia</p>
9:45		<p><i>Manipulation of cereal crop development by plant hormones (404)</i> Mr Brendan Kupke, SARDI</p>			
9:50					
9:55am - 10:30am					
Morning tea Lawn					

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10:30am - 12:00pm	Concurrent Session 7A	Concurrent Session 7B	Concurrent Session 7C	Concurrent Session 7D	Concurrent Session 7E
Theme	Improving rainfall capture and use	Optimising phenology - broadleaf crops	Tropical cereals	Managing soil constraints 2	
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
10:30	<p><i>Targeted amelioration of constraints in deep sands to maximise crop water use (396)</i> Dr Therese McBeath, CSIRO</p>	<p><i>When to take advantage of early seeding opportunities for canola in WA (418)</i> Ms Jackie Bucat, DPIRD WA</p>	<p><i>Designing rice to improve water productivity for temperate production (431)</i> Dr Jaquie Mitchell, The University of Queensland</p>	<p><i>Mind the depth of soil amelioration to surpass the yield gap in Western Australia (422)</i> Dr Gaus Azam, DPIRD WA</p>	
10:35					
10:40					
10:45					
10:50					
10:55	<p><i>Spatial assessment of the interactions between subsoil constraints, soil available water capacity, and potential crop yields (453)</i> Miss Mikaela Tilse, The University of Sydney</p>	<p><i>The critical period of canola: Impacts of environment and variety (602)</i> Dr Julianne Lilley, CSIRO</p>	<p><i>Maximising water-limited yield in cereals by balancing pre- and post-anthesis growth (356)</i> Prof Andrew Borrell, The University of Queensland</p>	<p><i>Identifying the relative importance of potential multiple soil constraints to wheat and canola growth rate (381)</i> Dr Stephen Itolo Akpa, Agriculture Victoria Research</p>	
11:00					
11:05					
11:10	<p><i>System's perspectives on the relationship between soil water dynamics and the efficacy of stubble and fertiliser management (517)</i> Dr Kirsten Verburg, CSIRO Agriculture and Food</p>	<p><i>Modelling canola yield for current cultivars and early sowing times in Western Australia (473)</i> Dr Imma Farre, DPIRD WA</p>	<p><i>Exploiting the variability and heritability of leaf angle in sorghum to design optimal canopies for different target environments (426)</i> Dr Barbara George-Jaeggli, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Estimating crop lower limit on Vertosol soils in the presence of variable levels of subsoil salinity (468)</i> Dr David Deery, CSIRO</p>	
11:15					
11:20					
11:25	<p><i>Water use efficiency is improved by storing more water before planting (566)</i> Mr Andrew Erbacher, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Manipulating flowering time in chickpeas to minimize frost risk, water, and heat stress (365)</i> Dr Muhuddin Anwar, DPI NSW</p>	<p><i>De-risking broadacre cropping in northern Queensland (571)</i> Dr Daniel Rodriguez, The University of Queensland</p>	<p><i>Screening genotypes for improving wheat yield in dispersive sodic subsoils in a medium rainfall region of south eastern Australia (597)</i> Dr Shihab Uddin, NSW DPI</p>	
11:30					
11:35					
11:40	<p><i>The influence of growing-season rainfall and pre-season stored soil moisture on wheat yield benefits from long fallows in Western Australia (362)</i> Dr Chao Chen, CSIRO</p>	<p><i>The here and now of climate change: How climatic conditions in Australian cotton regions have changed (513)</i> Dr Katie Broughton, CSIRO</p>	<p><i>Genotypic variation in transpiration and grain yield in a japonica rice diversity set grown under aerobic conditions (366)</i> Miss Wenliu Gong, The University of Queensland</p>	<p><i>Key factors limiting the yields of drip irrigated processing tomatoes (441)</i> Mr Sam North, NSW DPI</p>	
11:45			<p><i>Relationship of root cone angle with key physiological traits and grain yield of rice grown in aerobic production systems (491)</i> Mr Ricky Vinaroo, The University of Queensland</p>		
11:50			<p><i>Evaluation of upland and lowland rice root morphology for drought tolerance (384)</i> Dr Eseeri Kisaakye, Tasmanian Institute of Agriculture</p>		

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11:55	<p><i>Summer/autumn fallow management strategies for improving the rainfall use efficiency of crops in SE Australia (374)</i> Mr Amit Raj Adhikari, Agriculture Victoria</p>		<p><i>Response characteristics of leaf assimilate supply and silk sucrose metabolism in maize to drought stress (439)</i> Mr Zhiwei Wang, Anhui Agriculture University, China</p>	<p><i>Amending multiple soil constraints throughout the profile on a layer basis (413)</i> Mr Michael Weiss, Agriculture Victoria</p>	
Lunch Lawn					
12:00pm - 1:00pm					
1:00pm - 2:30pm	Concurrent Session 8A	Concurrent Session 8B	Concurrent Session 8C	Concurrent Session 8D	Concurrent Session 8E
Theme	System financial economic performance	Developing new temperate legume pasture systems	Managing fertility in pastures	Systems for disease management	
Room	Auditorium	Armitage Centre	Church	Studio	Supper Room
1:00					
1:05	<p><i>Suboptimal crop rotations account for a 17% system revenue gap across dryland subtropical Australia (519)</i> Dr Zvi Hochman, CSIRO</p>	<p><i>Genotype by environment interactions amongst diverse forage brassicas across Australia's mixed farming zone (546)</i> Dr Lucy Watt, CSIRO</p>	<p><i>The effect of nitrogen fertilisers on Phalaris aquatica L. pastures at low temperatures in south eastern NSW (539)</i> Dr Jeff McCormick, Charles Sturt University</p>	<p><i>Using a systems approach to investigate the efficacy of a disease rating system for Sclerotinia stem rot in canola (569)</i> Dr Sarita Bennett, Curtin University</p>	
1:10					
1:15					
1:20	<p><i>Farming system profitability and impacts of commodity price risk (548)</i> Dr Andrew Zull, Department of Agriculture and Fisheries, Queensland</p>	<p><i>Natural selection for flowering time in a diverse subterranean clover population sown at five different rainfall sites in southern Australia (591)</i> Dr Phillip Nichols, The University of Western Australia</p>	<p><i>Dairy farm nutrient management planning: Why is it important and what should be included? (352)</i> Dr Cameron Gourley, Soil Water and Nutrients Consulting</p>	<p><i>Old solutions to new problems: Intercropping reduces chocolate spot severity in faba bean (377)</i> Mr Frank Henry, Agriculture Victoria, Department of Jobs, Precincts and Regions</p>	
1:25					
1:30					
1:35	<p><i>Business and financial risk profiles for irrigated cotton in the Murrumbidgee catchment of Southern New South Wales (472)</i> Dr Sosheel Godfrey, Graham Centre for Agricultural Innovation</p>	<p><i>Screening for waterlogging tolerance in subterranean clover (Trifolium subterraneum L.) (479)</i> Mrs Gereltsetseg Enkhbat, The University of Western Australia</p>	<p><i>Potential for DMPP to increase pasture yields following repeated application (420)</i> Dr David Rowlings, Queensland University of Technology</p>	<p><i>Stubble trouble: Mapping Fusarium crown rot survival under different cereal stubble management scenarios (354)</i> Mrs Toni Petronaitis, NSW DPI</p>	
1:40					
1:45	<p><i>Analysis of the vegetable value chain and its challenges for profitability in Cambodia (340)</i> Prof Daniel Tan, The University of Sydney</p>	<p><i>Diversity of winter biomass production in the Australian arrowleaf clover collection (342)</i> Mrs Gereltsetseg Enkhbat, The University of Western Australia</p>	<p><i>Small ruminants grazing regime as a sustainable management practice for Western Australia wheat belt cultivated lands (544)</i> Dr Amir Mor-Mussery,</p>	<p><i>Controlled traffic and wider row spacing reduces the incidence of Chlorotic Streak Disease (CSD) in sugarcane seedbeds in subtropical Australia (459)</i> Dr Anthony Young, The University of Queensland</p>	
1:50					
1:55					

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2:00	Yacker: Agriculture phone directory & reinventing extension (406) Miss Emma Ayliffe, Summit Ag	Speed breeding methodologies delivers two new barrel medic cultivars to farmers within 6.5 years of breeding commencing (341) Mr David Peck, SARDI	Impact of phosphorus fertiliser on tropical pasture legume production (577) Miss Louise Walker, Department Agriculture and Fisheries, Queensland	Sclerotia contamination of canola and lupin grain by the fungal pathogen <i>Sclerotinia</i> in the Western Australian grainbelt (580) Dr Pippa Michael, Curtin University	
2:05			Premier Digit and Progardes <i>Desmanthus</i> compete effectively for applied phosphorus under mixed sward conditions (589) Dr Jonathan McLachlan, University of New England	Lower severity of <i>ascochyta</i> blight and higher grain yields from chickpeas sown into standing cereal stubble compared to slashed stubble (489) Dr Sundara M Mawalagedera, Agriculture Victoria	
2:10				Life-history and feeding behaviour of <i>Rhopalosiphum padi</i> and <i>Sitobion avenae</i> on wheat hosts grown under different CO2 and nitrogen regimes (355) Prof Victor Sadras, SARDI	
2:15		Flowering by selected serradella and subterranean clover lines in response to vernalisation and photoperiod treatments (368) Mrs Laura Goward, CSIRO			
2:20		Subterranean clover flowering time in New Zealand (335) Mrs Carmen Teixeira, Lincoln University, New Zealand			
2:25		Competitive interactions between serradella (<i>Ornithopus</i> spp) and subterranean clover (<i>Trifolium subterraneum</i>) in mixed pasture swards (500) Miss Olivia Brunton, Charles Sturt University and CSIRO			
2:30pm - 3:00pm	Conference close Auditorium				

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