MONDAY 2 SEPTEMBER 2013

07.45  Registration Opens

08.30 – 08.50  Chair
A/Prof Mehmet Cakir, Chair of Local Organising Committee
Murdoch University, Perth, Australia
Welcome to Country

Welcome
Prof Richard Higgott, Vice Chancellor
Murdoch University, Perth, Australia

08.50 – 09.00  Welcome
Prof Roberto Tuberosa, Conference Chair, International Organising Committee
University of Bologna, Bologna, Italy

09.00 – 09.15  Official Opening
Hon. Kenneth (Ken) Charles Baston MLC
Minister for Agriculture and Food for Western Australia, Perth, Australia

09.15 – 10.00  Coping with drought in crop improvement – a global perspective
Dr Jean-Marcel Ribaut
CGIAR Generation Challenge Programme, El Batan, Mexico

10.00 – 10.15  Group Photo

10.15 – 10.45  Morning Tea & Poster Displays

10.45 – 12.30  Session 1: Maximising Water Productivity in Dryland and Limited Irrigation Cropping Systems

Co-chairs: Dr John Kirkegaard and Dr Abraham Blum

10.45 – 11.15  Optimizing crop production and water productivity tradeoffs: annual vs. perennial crops.
Prof Elias Fereres
University of Cordoba and Institute for Sustainable Agriculture (IAS-CSIC), Cordoba, Spain

11.15 – 12.30  Contributed papers and facilitated discussion

11.15 – 11.25  Improving water productivity in the Australian grains industry - a nationally co-ordinated approach
Dr John Kirkegaard: CSIRO Sustainable Agriculture Flagship, Canberra, Australia

11.25 – 11.35  Novel genotype and management interactions to adapt south-east Australian wheat production to recent climate change
Dr James Hunt: CSIRO Sustainable Agriculture Flagship, Canberra, Australia

11.35 – 11.45  Subsoil manuring: an innovative approach to addressing subsoil problems targeting higher water use efficiency in Southern Australia
Dr Renick Peries: Victorian Department of Primary Industries, Geelong, Australia

11.45 – 11.55  Assessment of the relative impact of key physiological traits on adaptation to drought in different mega-environments
Dr Fernanda Dreccer: CSIRO Plant Industry and University of Queensland, Gatton, Australia
11.55 – 12.05 Increasing yield of wheat under drought with film antitranspirants by exploiting meiotic stage physiology
Prof Peter Kettlewell: Harper Adams University, Newport, United Kingdom

12.05 – 12.30 Facilitated discussion

12.30 – 14.00 Lunch & Poster Displays

14.00 – 15.45 Session 2: Maximising Dryland Crop Production – Crop Design

Co-chairs: Dr Rachid Serraj and Dr Greg Rebetzke

14.00 – 14.30 Crop design for specific adaptation in variable dryland production environments
Prof Graeme Hammer
University of Queensland, Brisbane, Australia

14.30 – 14.40 Adaptations for growing wheat in the drying climate
Prof Robert Belford: Curtin University, Perth, Australia

14.40 – 14.50 Modelling traits related to stay-green phenotype in post-rainy season sorghum
Dr Jana Kholova: ICRISAT, Patancheru, India

14.50 – 15.00 Biomass production, relative competitiveness and water use efficiency of two dominant species in semiarid Loess Plateau under different water and nutrient supplying conditions
Dr Bingcheng Xu: Institute of Soil and Water Conservation, Chinese Academy of Sciences and Ministry of Water Resources, Yangling, China

15.00 – 15.10 Quantifying the potential yield benefit of root-trait modifications in target water-limited environment
Dr Karine Chenu: University of Queensland, Toowoomba, Australia

15.10 – 15.20 Assessment of the limited maximum transpiration trait in the US corn belt
Dr Charlie Messina: DuPont Pioneer, Johnston, USA

15.20 – 15.45 Facilitated discussion

15.45 – 16.15 Afternoon Tea & Poster Displays

16.15 – 17.15 Poster Session
Adaption to water limited environments and maximising dryland and crop production

17.15 – 18.45 Welcome Reception

TUESDAY 3 SEPTEMBER 2013

07.45 Registration Opens

08.30 – 10.15 Session 3: Plant Productivity Under Drought I - Effective Capture of Water

Co-chairs: Prof Robert Sharp and Dr Jairo Palta

08.30 – 09.00 Root anatomical traits for effective water acquisition
Prof Jonathan Lynch
Penn State University, University Park, Pennsylvania, USA

09.00 – 10.15 Contributed papers and facilitated discussion
<table>
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| 09.00 – 09.10 | Genotypic differences in deep water extraction associated with drought tolerance in wheat  
  Dr Eric Ober: Rothamsted Research, Harpenden, United Kingdom |
| 09.10 – 09.20 | How do drought-adaptive wheat genotypes take up water and develop roots in water-deficit soil?  
  Dr Masanori Inagaki: ICARDA, Tunis, Tunisia |
| 09.20 – 09.30 | Rhizosphere dynamics controls water availability to plants during drying and wetting cycles  
  Prof Andrea Carminati: Georg-August University of Goettingen, Goettingen, Germany |
| 09.30 – 09.40 | Root-based hydraulic restriction as a basis for drought tolerance in wheat  
  Dr Walid Sadok: Université Catholique De Louvain, Louvain-La-Neuve, Belgium |
| 09.40 – 09.50 | New technology retains soil water in plant root zone and doubles plant production  
  Prof Alvin Smucker: Michigan State University, East Lansing, USA |
| 09.50 – 10.15 | Facilitated discussion |
| 10.15 – 10.45 | Morning Tea & Poster Displays |
| 10.45 – 12.20 | Session 3: Plant Productivity under Drought II - Transpiration Efficiency  
  Co-chairs: Prof Graham Farquhar and Dr Stephania Grando |
| 10.45 – 11.15 | Transpiration efficiency: New insights on an old story  
  Dr Vincent Vadez  
  ICRISAT, Patancheru, India |
| 11.15 – 12.15 | Contributed papers and facilitated discussion |
| 11.15 – 11.25 | Quantitative locus trait (QTL) mapping of transpiration ratio related to pre-flower drought tolerance in sorghum (Sorghum Bicolor (L.) Moench)  
  Dr William Payne: ICARDA, Addis Ababa, Ethiopia |
| 11.25 – 11.35 | Use of recombinant inbred lines as rootstocks to improve resource use efficiency: a case study of WUE in tomato  
  Dr Michel E Ghanem: ICARDA, Rabat, Morocco |
| 11.35 – 11.45 | Rice drought-yield QTL qDTY_{12.1} confers greater lateral root growth and transpiration efficiency under drought but not under well-watered conditions  
  Dr Amelia Henry: International Rice Research Institute, Los Banos, The Philippines |
| 11.45 – 11.55 | Accelerating the detection of genetic determinism of WUE under drought in grapevine (Vitis vinifera L.): high throughput facilities on potted plants as compared with vineyard conditions for a whole progeny  
  Dr Aude Coupel-Ledru: LEPSE, INRA, Montpellier, France |
| 11.55 – 12.20 | Facilitated discussion |
| 12.20 – 13.45 | Lunch & Poster Displays |
| 13.45 – 16.00 | Session 3: Plant Productivity Under Drought III - Growth and Yield  
  Co-chairs: Prof Jinhua Zhang and Prof Kadambot Siddique |
| 13.45 – 14.15 | Useful dehydration-inducible genes for the development of drought tolerant crops  
  Dr Kazuo Shinozaki  
  RIKEN Plant Science Center & Biomass Engineering Program, Yokogana, Japan |
Dissection of drought tolerance: vegetative and reproductive growths in water deficit
Dr François Tardieu
INRA, Montpellier, France

14.45 – 16.00 Contributed papers and facilitated discussion

14.55 – 15.05 Contrasting adaptive strategies to terminal drought stress gradients in Mediterranean legumes
Dr Jens Berger: CSIRO Plant Industry, Perth, Australia

15.05 – 15.15 Is floral bud temperature a good indicator of drought tolerance in Brassica rapa?
Ms Yiming Guo: The University of Western Australia, Perth, Australia

15.15 – 15.25 Aquaporins: potential targets to increase yield in crops?
Dr Linda Jeanguenin: Université Catholique De Louvain - Institut Des Sciences De La Vie, Louvain-La-Neuve, Belgium

15.25 – 15.35 Combined effect of drought and heat on chickpea during seed filling
Prof Harsh Nayyar: Panjab University, Chandigarh, India

15.35 – 16.00 Facilitated discussion

16.00 – 16.30 Afternoon Tea & Poster Displays

16.30 – 17.30 Poster Session
Plant Productivity Under Drought

19.00 – 23.00 Conference Dinner

WEDNESDAY 4 SEPTEMBER 2013

Conference Tours

Option A (08.00 – 18.30): Dry Climate Adaptations in Australian Native Plants
Locations: Kings Park and Botanic Garden, Perth and Boyagin Nature Reserve, Brookton

Option B (08.00 – 18.30): Cropping Systems in Low Rainfall Environments
Locations: Western Australian No-Tillage Farmers Association (WANTFA) Trial Site, Cunderdin & Neighbouring Farmers

Option C (07.30 – 20.00): DAFWA Managed Environment Facility
Location: Merredin Research Institute: Managed Environment Facility

Option D (08.00 – 18.30): Cereal Breeding Programs in Western Australia
Location: Intergrain Pty Ltd Wheat and Barley Breeding, Bibra Lake, and Australian Grain Technologies Pty Ltd, Northam

Registered Delegates Only
07.45  Registration Opens

08.30 – 10.20  Session 4: Breeding for Water-Limited Environments I - Variety Development and Seed Delivery Systems

Co-chairs: Dr Greg Edmeades and Dr Lynne McIntyre

08.30 – 08.35  FAO Forum Announcement
Mr Pasquale Steduto
FAO, Rome, Italy

08.35 – 09.05  Delivering drought tolerance to those who need it; from genetic resource to cultivar
Prof Richard Trethowan
University of Sydney, Cobbitty, Australia

09.05 – 10.20  Contributed papers and facilitated discussion

09.05 – 09.15  Improving food security in sub-Saharan Africa through drought tolerant maize
Dr Jill Cairns: CIMMYT, Harare, Zimbabwe

09.15 – 09.25  Screening rice for drought adaptation in the rainfed lowlands
Dr Jacqui Mitchell: The University of Queensland, Brisbane, Australia

09.25 – 09.35  Understanding the genetic architecture of drought and heat tolerance in chickpea through genome-wide and candidate gene-based association mapping
Dr Manish Roorkiwal: ICRISAT, Hyderabad, India

09.35 – 09.45  High-throughput phenotyping of drought-adaptive traits in cotton
Dr Don Jones: Cotton Incorporated, Cary, USA

09.45 – 09.55  Maintaining a broad-acre cropping business while waiting genetic improvement.
Mr Wayne Parker: Department of Agriculture and Food WA, Geraldton, Australia

09.55 – 10.20  Facilitated discussion

10.20 – 10.45  Morning Tea & Poster Displays

10.45 – 12.30  Session 4: Breeding for Water-Limited Environments II - Trait Based and Transgenic Approaches

Co-chairs: Dr Henry Nguyen and Prof Len Wade

10.45 – 11.15  Developing drought tolerant maize hybrids for the US corn-belt: discovery to product
Dr Mark Cooper
DuPont Pioneer, Johnston, USA

11.15 – 11.45  Genomics-assisted breeding for drought tolerance - dream comes true for chickpea!
Prof Rajeev Varshney
ICRISAT, Patancheru, India

11.45 – 12.30  Contributed papers and facilitated discussion
11.45 – 11.55 Two in one rice: Combining drought and submergence tolerance loci in the rice mega varieties Swarna and Swarna Sub1

Dr B.P Mallikarjuna Swamy: IRRI, Los Banos, The Philippines

11.55 – 12.05 Improvement of drought tolerance in maize

Dr Michael Nuccio: Syngenta Biotechnology Inc, Research Triangle Park, USA

12.05 – 12.30 Facilitated discussion

12.30 – 13.45 Lunch & Poster Displays

13.45 – 16.00 Session 4: Breeding for Water-Limited Environments II - Trait Based and Transgenic Approaches (Cont’d)

Co-chairs: Prof Yehoshua Saranga and Dr Andrew Borrell

13.45 – 14.15 Complementary strategies to improve adaptation of wheat to drought-prone environments

Dr Matthew Reynolds

CIMMYT, Global Wheat Program, El Batan, Mexico

14.15 – 14.45 Discovery and exploration of endogenous genes for drought resistance improvement in rice

Prof Lizhong Xiong

Huazhong Agricultural University, Wuhan, China

14.45 – 16.00 Contributed papers and facilitated discussion

14.45 – 14.55 Fine-mapping candidates for ‘stay-green’ in sorghum reveals genes associated with canopy development and root growth

Dr Andrew Borrell: University of Queensland, Warwick, Australia

14.55 – 15.05 Apoplastic ROS and plasma membrane proteomics: novel insights into root growth adaptation to water stress

Dr Priyamvada Voothuluru: University of Missouri, Columbia, USA

15.05 – 15.15 The microtranscriptome modulated by drought in sugarcane

Dr Marcelo Menossi: University of Campinas, Campinas, Brazil

15.15 – 15.25 The maize leaf and developing kernel responses to drought as revealed by transcriptome and phosphoproteome analyses

Dr Utlwang Batlang: Botswana College of Agriculture, Gaborone, Botswana

15.25 – 15.35 Understanding mechanisms for rice yield under drought: proteomic and metabolomic perspective

Dr Manish Raorane: IRRI, Los Banos, The Philippines

15.35 – 16.00 Facilitated discussion

16.00 – 16.30 Afternoon Tea & Poster Displays

16.30 – 17.30 Poster Session

Breeding for Water-Limited Environments

18.00 – 21.00 FAO Forum

Registered Delegates Only

FRIDAY 6 SEPTEMBER 2013

07.45 Registration Opens
08.30 – 10.10  Session 5: Crop Adaptation to Water Limited Environments – Case Studies

Co-chairs: Prof William Erskine and Dr H. Renee Lafitte

08.30 – 08.55  Common beans, biodiversity, and multiple stress: Challenges of drought resistance in tropical soils
Dr Stephen Beebe
CIAT, Cali, Colombia

08.55 – 09.20  Crop adaptation to water limited environments - wheat in Australia - a case study
Dr Richard Richards
CSIRO Plant Industry, Canberra, Australia

09.20 – 09.45  Breeding for drought tolerance: is rice different from other major cereals?
Dr Arvind Kumar
IRRI, Los Banos, The Philippines

09.45 – 10.10  Riding the climate rollercoaster: an integrated approach to sorghum Improvement in Australia
Dr David Jordan
University of Queensland, Warwick, Australia

10.10 – 10.45  Morning Tea & Poster Displays

10.45 – 13.00  Session 6: Future Challenges and Opportunities - Panel Discussion and Closing Remarks

Panel Moderator: Prof Roberto Tuberosa
University of Bologna, Bologna, Italy

10.45 – 12.15  Panel members
Dr Abraham Blum: PlantStress.com, Israel
Dr Jill Cairns: CIMMYT, Harare, Zimbabwe
Dr Mark Cooper: DuPont Pioneer, Johnston, USA
Prof Robert Sharp: University of Missouri, Columbia, USA
Dr Francois Tardieu: INRA, Montpellier, France
Prof LIZhong Xiong: Huazhong Agricultural University, Wuhan, China

12.15 – 12.45  Closing Summary
Prof Neil Turner
The University of Western Australia, Perth, Australia

12.45 – 12.55  Closing Remarks & Announcement of InterDrought-V Location and Chair
Prof Roberto Tuberosa
University of Bologna, Bologna, Italy

12.55 – 13.00  Vote of Thanks
A/Prof Mehmet Cakir, Chair of Local Organising Committee
Murdoch University, Perth, Australia

13.00 – 14.00  Lunch & Poster Displays

14.00  Conference Close