

Recent progress in drought tolerance

from genetics to modelling

Le Corum - Montpellier - France

8 & 9 June 2015



Program

Program June 8th, 2015

8:00 - 9:15	Registration	<i>Antigone room</i>
9:15 - 9:30	Opening Claude Welcker, INRA, Chair of the Conference Official welcome Laurent Bruckler, INRA, Chair of the INRA research center of Montpellier Andreas Boerner, IPK, chair of the cereals section of Eucarpia	<i>Einstein Auditorium</i>
9:30 - 10:40	Session 1: Coping with drought in crop improvement : a global perspective	
	The nature and patterns of drought in Europe E. Fereres, <i>Universidad de Cordoba, Spain</i> A multi scale multi environment approach F.Tardieu, <i>INRA, France</i>	<i>Einstein Auditorium</i>
10:40 - 11:10	Coffee break	<i>Antigone room</i>
11:10 - 12:55	Session 2: Traits-base strategies for dealing with drought	<i>Einstein Auditorium</i>
	Roots traits beyond architecture X. Draye, <i>Université Catholique de Louvain, Belgium</i> <ul style="list-style-type: none"> • “Quantitative imaging of root water uptake” M. Zarebanadkouki, <i>Georg-August University of Göttingen, Germany</i> • “Linkage mapping for root system architecture in durum wheat” N. Ghasemali, <i>Islamic Azad University, Iran</i> <hr/> Control of expansive growth in water deficit: from phenotyping to field simulations B. Parent, <i>INRA, France</i> <ul style="list-style-type: none"> • “Using modelling and GWAS to support the genetic and physiological dissection of a complex trait, toward ideotype exploration - Case of rice early vigor response to drought” D. Luquet, <i>CIRAD, France</i> 	
12:55 -14:30	LUNCH time	
14:30 - 16:15	Modeling kernel abortion in maize CH. Messina, <i>Pioneer, USA</i> <ul style="list-style-type: none"> • “Grain abortion and yield stability under drought: a key role for growth processes in reproductive organs” O. Turc, <i>INRA, France</i> • “Predicting maize kernel number using genetic information” A. Amelong, <i>Universidad Nacional de Rosario, Argentina</i> 	<i>Einstein Auditorium</i>
	Genotypic variation in water use efficiency and related physiological traits WJ. Davies, <i>Lancaster University, England</i> <ul style="list-style-type: none"> • “High resolution mapping of traits related to whole-plant transpiration under increasing evaporative demand in wheat” W. Sadok, <i>Université Catholique de Louvain, Belgium</i> 	

16:15 - 16:45	<i>Coffee break</i>	<i>Antigone room</i>
16:45 - 17:45	Aquaporins: physiological roles and variability F. Chaumont, <i>Université Catholique de Louvain, Belgium</i>	<i>Einstein Auditorium</i>
	Investigating drought resistance using metabolic phenotyping Y. Gibon, <i>INRA, France</i>	
18:00 - 19:00	Poster session 3: Variation for target traits and phenotyping methods Poster Viewing	<i>Antigone room</i>
19:00 - 20:30	<i>Cocktail</i>	<i>Antigone room</i>

Program June 9th, 2015

8:45 - 9:00	Message of welcome	
9:00 - 10:30	Session 4: Dealing with Genotype x Environment interaction	<i>Einstein Auditorium</i>
	Analysis of GxE in maize by multi-environment GWAS and genomic selection F. van Eeuwijk, <i>Wageningen Universiteit, Netherlands</i>	
	Investigating the unstability of yield-related QTL in wheat D. Fleury, <i>ACPFPG, Australia</i>	
	<ul style="list-style-type: none">• “Genetic variability of the sensitivity of grain number to drought and high temperature in maize” E. Millet, <i>INRA, France</i>• “Genetic and ecophysiological dissection of tolerance to drought and heat stress in bread wheat: from environmental characterization to QTL detection” B. Bouffier, <i>Limagrain Europe, France</i>	
10:30 - 11:00	Coffee break	<i>Antigone room</i>
11:00 - 11:45	Modelling G x E x M with explicit genotypic information G. Hammer, <i>University of Queensland, Brisbane, Australia</i>	
	<ul style="list-style-type: none">• “Precision agriculture for SAT - near future or unrealistic effort?” J. Kholova, <i>ICRISAT, India</i>	
11:45 - 13:00	Poster session 5: QTL, functional genomics, allelic diversity and breeding application Posters viewing	<i>Antigone room</i>
13:00 - 14:30	LUNCH time	
14:30 - 17:00	Session 6: Breeding for drought, strategies, choices	<i>Einstein Auditorium</i>
	Genomics-assisted breeding to enhance drought resistance in cereals R. Tuberosa, <i>Università di Bologna, Italy</i>	
	<ul style="list-style-type: none">• “Genetics and breeding for rice that use less water” A. H. Price, <i>University of Aberdeen, UK</i>• “Extending the phenotype - crop modeling to estimate the ‘unobservable’” S. Chapman, <i>CSIRO, Australia</i>• “Breeding for drought: Outputs and lessons learnt from the GCP experience” J. M. Ribaut, <i>CGIAR, Mexico</i>• “100 years of wheat selection in Switzerland decreased rooting depth but increased plasticity in response to drought” A. Hund, <i>Institute of Agricultural Science, Switzerland</i>	
16:20 - 16:50	Coffee break	<i>Antigone room</i>

17:00 - 18:10

Panel of discussion:
Designing new variety for drought-prone environments

Einstein Auditorium

- A. Murigneux, *Limagrain Europe, France*
- J. Betran, *Syngenta, France*.
- M. Cooper, *Pioneer, USA*
- D. Jordan, *University of Queensland, Australia*
- B. Usadel, *University Aachen, Germany*

Open discussion

18:10 - 18:30

Closing summary

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Claude Welcker, *INRA, Chair of the Conference*

Closing remarks

- Domagoj Simic, *Agricultural Institute Osijek, Chair of the maize and sorghum section of Eucarpia*
- François Tardieu, *INRA, Chair of Interdrought*

**June 12th: 9:00 - 13:00 Conference extension/Technical session
Phenotyping for the responses to environmental conditions**

Venue: Campus SupAgro - 2 place Viala, Montpellier