

I Simposio Español de Fisiología y Mejora de Cereales
I Spanish Symposium on Cereal Physiology and Breeding
Zaragoza 9-10 April 2018

Organized in the framework of the (i) Thematic Network AGL2016-81855-REDT “*Fisiología del Rendimiento y Calidad para la Mejora de Cereales*” and (ii) the Network of “Red de Cereales y Leguminosas” del CIHEAM

The program of the I Spanish Symposium on Cereal Physiology and Breeding starts with an opening session followed by four thematic sessions (Crop development, Yield potential, Abiotic stresses, and Biotic stresses) and closed by a “wrapping up” discussion session. Each session is opened by an invited keynote presentation followed by a number of oral presentations selected from those submitted voluntarily by the participants and with a poster session (joining two sessions in each of the two poster sessions scheduled). The different size of each of the sessions respond to the number of abstracts submitted for each of them. In each session there will be two spaces open for discussions, one following the invited keynote presentation and another one closing the session after all oral communications have been delivered. The exception would be the last session that due to the limited number of abstracts submitted both discussions spaces were merged. We expect these open discussion spaces could include discussions not only on the particular presentations offered but also more openly (though within the issue under discussion). The core of the Symposium will be the communications of the scientific work in the four thematic sessions.

Communications: There will be a keynote presentation opening the session and then oral communications as well as a ‘new’ format of oral “quick-and-effective” TWO-minutes poster ‘flash presentations’ (before the actual poster session)

1. “Regular” Oral communications will be allocated a slot of 12’. As it will take c. 1’ for the chair to introduce the speaker and for him/her to take place to start his/her presentation, each oral communication must be prepared (and rehearsed!) to be delivered in no more than 11 minutes. Each presenter of an oral communication must be extremely rigorous in respecting the restriction to deliver a talk in 11 minutes (or less), as the chairpersons will be very strict on maintaining this limit and will inflexibly cut presentations exceeding this upper threshold (thus it is expected that each presenter will show his/her respect to the other presenters and to the audience by having well prepared the presentation to be delivered within the 11 minutes required). There will be a slot for open discussions closing all the oral presentations where issues from the different talks will be discussed further.

2. TWO minutes poster ‘flash presentations’: There is a global “*Three Minute Thesis*” competition (that started a decade ago in Queensland and is held in more than 200 universities worldwide nowadays). If people can tell significant things of a whole thesis in 3’, there would be plenty of time for our poster presenters to attract visitors to their posters (or to engage people in discussions over meals and coffee breaks, or even beyond the Symposium) from a very quick (and effective) **TWO-minute ‘flash presentation’ of each poster**. This will open each of the two poster sessions and will be organised as a ‘Carousel’ of presentations immediately before the poster viewing session. Brevity creates excitement; and our poster presenters will profit the opportunity for “advertising” their posters for following poster viewing session.

Requirements for the ‘**flash presentations**’: There will be **ONLY TWO power-point slides per poster** allowed: a first slide –holding the title- presenting the issue, a second slide with the key results and conclusion(s). Presentations not respecting these conditions will NOT be uploaded and will then NOT be shown in this “carousel of ‘flash presentations’ of posters”. Everybody knows that in the poster (and particularly through discussing with the authors) there will be plenty more to see, learn, discuss and enjoy. This **TWO-minute presentation** is NOT the last opportunity for discussing your work in the Symposium (and beyond), it is only the attraction to engage people in such discussion.

Chairpersons will be VERY strict in controlling that (i) each poster is summarised in only two slides with the content established above, (ii) each presenter will NOT use more than 2 minutes in that “flash presentation”. If you are one of our poster presenters, be thrilled to excel in this challenge!. Regarding the poster itself, please follow the indications suggested, and respect strictly the dimensions established, in the website (<http://networks.iamz.ciheam.org/cerealsnetwork/en/index.html>; see on the right-hand under “News”).

Monday 9 April		
13.30	Bus Departure from Zaragoza downtown (<i>Calle del Coso, 80</i>) to IAMZ Entrance	
14.00-14.20	Registration	
Opening Session		
<i>Chairpersons: Ramzi Belkhodja (IAMZ) & Josefina Sillero (IFAPA)</i>		
14.20-14.30	Javier Sierra, IAMZ Director; Angel Ruiz, CSIC's AGR Coordinator	Welcoming words
14.30-14.45	Ana Casas (EAD-CSIC) Gustavo A. Slafer (ICREA/AGROTECNIO/UdL)	Introduction. Why physiology and breeding of cereals?
14.45-15.00	Octavi Quintana, PRIMA	La iniciativa PRIMA
Session 1: Crop development		
<i>Chairpersons: Ana Casas (CSIC) & Francisco Ciudad (ITACyL)</i>		
15.00-15.30	Ernesto Igartua, EEAD-CSIC, Zaragoza	Invited keynote paper: “ Winter, spring and those in between. Growth habit unexplored possibilities and unexpected consequences ”
15.30-15.40	Open discussion on Crop Development keynote paper	
15.40-15.52	Ochagavia et al.	Earliness per se effects on developmental traits in hexaploid wheat grown under field conditions
15.52-16.04	Vicente et al.	Transcriptome analysis of durum wheat flag leaves reveals a coordinated regulation of primary and secondary metabolism under the future climatic scenario
16.04-16.16	Berenguer et al.	New strategies with epigenetic and autophagy modulators to increase microspore embryogenesis efficiency for DH production in barley
16.16-16.28	Basavaraddi et al.	Does the QTLHeadingon wheat chromosome7D affect other traits?
16.28-16.40	Monteagudo et al.	Light quality influences rate of development and flowering genes expression in barley
16.40-16.52	Pérez de Luque et al.	Wheat genotype influences root symbiosis with mycorrhiza and rhizobacteria
16.52-17.04	Contreras et al.	Pan-genomes: estimating the true genomic diversity of species
17.04-17.16	Open discussion <i>Crop development</i>	
17.16-17.40	Coffee-break	
Session 2: Yield potential		
<i>Chairpersons: Ignacio Romagosa (AGROTECNIO/UdL) & Rosa Morcuende (CSIC)</i>		
17.40-18.10	Thorsten Schnurbusch, IPK-Germany	Invited keynote paper: “ A genetic playground for enhancing the yield potential of wheat ”
18.10-18.20	Open discussion of Yield Potential keynote paper	
18.20-19.10	‘Carousel’ of TWO –MINUTES poster presentations (of posters sessions 1 and 2)	
19.10-20.00	Viewing/discussing posters of sessions 1 and 2 (with authors by their posters)	
20.00	Bus Departure from IAMZ Entrance to Zaragoza downtown	
21.30-23.00	Symposium dinner (TRES MARES - Restaurante Náutico; at Paseo Echegaray y Caballero s/n)	

Tuesday 10 April		
08.30	Bus Departure from Zaragoza downtown (<i>Calle del Coso, 80</i>) to IAMZ Entrance	
Continue Session 2: Yield potential		
<i>Chairpersons: Ignacio Romagosa (AGROTECNIO/UdL) & Rosa Morcuende (CSIC)</i>		
09.00-09.12	Fernández-Gallego et al.	Wheat and barley ear counting in-field conditions, low-cost approach using RGB images.
09.12-09.24	Marcos-Barbero et al.	Exploring the genetic diversity in wheat performance at the high temperature and CO ₂ concentration foreseen with climate change through the identification of key markers of growth and central metabolism.
09.24-09.36	Vergara-Diaz et al.	Metabolite profiles in leaves and spikes of field-grown wheat are related with crop yield and can be derived from hyperspectral readings
09.36-09.48	Kefauver et al.	UAV and Proximal Sensing for Phenotyping Maize in African Breeding Programs
09.48-10.00	Zouari et al.	Potential Associations Between Grain Yield, Drought Indexes and some Agronomic Traits of a Durum Wheat Collection
10.00-10.25	Open discussion <i>Yield potential</i>	
10.25-10.50	Coffee-break	
Session 3: Abiotic Stresses		
<i>Chairpersons: Jose L Araus (UB) & Roxana Savin (AGROTECNIO/UdL)</i>		
10.50-11.20	John Foulkes, University of Nottingham-UK	Invited keynote paper: “ Genetic diversity for rooting traits and tolerance of water and nutrient stresses in wheat ”
11.20-11.30	Open discussion of Abiotic Stress keynote paper	
11.30-11.42	Lopes et al.	Optimizing winter wheat traits to improve resilience to a changing environment in rainfed crop systems of Turkey and Iran
11.42-11.54	Martínez-Subira et al.	Synthesis of bioactive compounds in barley during grain filling in response to late abiotic stress
11.54-12.06	Vicente et al.	Carbon and nitrogen metabolism in laminar and non-laminar photosynthetic organs under contrasting water regimes in low- and high-yielding durum wheat
12.06-12.18	Martignago et al.	Genome editing in Sorghum: a vanguard cereal to study drought stress
12.18-12.30	Soba et al.	Elevated CO ₂ effect on wheat grain quality evolution during grain filling period
12.30-12.50	Open discussion on <i>Abiotic stresses</i>	
12.50-14.00	Lunch (Aula Dei Cafeteria)	
Session 4: Biotic Stresses		
<i>Chairperson: Alejandro Pérez Luque (IFAPA) & Nieves Aparicio (ITACyL)</i>		
14.00-14.30	Elena Prats, IAS-CSIC, Córdoba	Invited keynote paper: “ Plant physiological dysfunctions at the crossroad between disease resistance and resistance cost ”
14.30-14.42	Ciudad- Bautista et al.	Incidence of <i>Oscinella frit</i> L (Diptera: Chloropidae) in Castilla y León
14.42-14.56	Pallavicini et al.	Aerial platforms as a new approach to select resistant lines for yellow rust in bread wheat breeding program
14.56-15.30	Open discussion on the whole session (keynote and oral presentations) of <i>Biotic stresses</i>	
15.30-15.55	‘Carousel’ of TWO –MINUTES poster presentations (of posters sessions 3 and 4)	
15.55-16.40	Viewing/discussing posters of sessions 3 and 4 (with authors by their posters)	
16.40-17.00	Ana Casas (EAD-CSIC) Ignacio Romagosa (AGROTECNIO/UdL)	Wrapping up, conclusions and closing words
17.00-17.25	Coffee-break & Farewell	
17.30	Bus Departure from IAMZ Entrance to Zaragoza downtown (and CSIC Delegation in Zgz)	

Posters of sessions 1 and 2

- Poster # 01. **Ochagavía et al.** Earliness per se x temperature interaction on wheat developmental traits
- Poster # 02. **Lopez-Malvar et al.** Genome wide association analysis for cell wall bound hydroxycinnamates
- Poster # 03. **Solé et al.** Variability for glutamine synthetase 1 homoeogenes and N dose response in *Triticum* spp.
- Poster # 04. **Sánchez-León et al.** Engineering the major coeliac disease immunogenic complex in wheat by CRISPR/Cas9
- Poster # 05. **Figueroa-Garrido et al.** Combining abilities for cell wall components in corn hybrids
- Poster # 06. **Atienza et al.** Potential utilization of durum wheat landraces for breeding
- Poster # 07. **Ben Mariem et al.** Impact of N fertilization in agronomic and flour nutritional traits.
- Poster # 08. **Cantalapiedra et al.** Copy-number variation through k-mer count analysis
- Poster # 09. **Mattera et al.** Carotenoid accumulation patterns and lutein esterification process during grain development
- Poster # 10. **Saiz-Fernández.** High nitrate supply alters root and shoot metabolism and overall growth of maize plants
- Poster # 11. **Avila et al.** Exploring synteny relationships of *Hordeum chilense* genome for *Tritordeum* breeding
- Poster # 12. **Calderón et al.** Unzipping how homologous chromosomes can recognise and associate in pairs in wheat
- Poster # 13. **Fellahi et al.** Allelic variation of Rht, Vrn and Ppd genes in a set of bread wheat (*Triticum aestivum* L.) lines cultivated in eastern Algeria
- Poster # 14. **Ruiz et al.** Variation for root architecture in a core collection of durum wheat and their relation with eco-geographical and agronomic traits
- Poster # 15. **García-Molina et al.** Gluten proteins in low-gliadin wheats: effects of different nitrogen levels during fertilisation
- Poster # 16. **Gracia-Romero et al.** Remote sensing phenotyping for estimating genotypic variability in grain yield of durum wheat under different water and temperature conditions
- Poster # 17. **Chairi et al.** Post-Green Revolution genetic advance in durum wheat: the case of Spain
- Poster # 18. **Ayadi et al.** Comparative response of nitrate reductase activity, nitrogen utilisation efficiency (NutE) and nitrogen physiologic efficiency (NPE) in Tunisian durum wheat cultivars
- Poster # 19. **Garcia et al.** Fruiting efficiency differences between winter cereals
- Poster # 20. **Martínez-Peña et al.** Canopy vegetation indices to assess yield in durum wheat
- Poster # 21. **Caicedo et al.** Maize breeding for delayed senescence “STAY GREEN”
- Poster # 22. **Álvaro et al.** Bread wheat improvement to meet the requirements of the Spanish agrofood sector
- Poster # 23. **Kim et al.** Composite cross populations (CCPs) of wheat: The intensive use of genetic variation in the future wheat breeding

Posters of sessions 3 and 4

- Poster # 24. **Rezzouk et al.** Early assessment of the effect of irrigating with saline water in the agronomical performance of the pseudocereal *Chenopodium quinoa*: comparing different approaches
- Poster # 25. **Rispail et al.** Genetic plasticity of oat agronomic traits associated with climate variable changes
- Poster # 26. **Thameur et al.** Characterization of antioxidant enzymatic response of five barley genotypes under drought stress
- Poster # 27. **Bermejo-Bermejo et al.** An assessment of O₃-sensitivity of Spanish bread wheat (*Triticum aestivum* L.) varieties
- Poster # 28. **Canales et al.** Encourage spending or saving water? A strategy for coping with drought in oats involve abscisic acid mediated modulation of transpiration coupled with improved root hydraulics
- Poster # 29. **Canales et al.** A novel role for OPDA (12-oxo Phytodienoic Acid) for coping with drought in oat by modulating root growth
- Poster # 30. **Jallouli et al.** Screening for drought tolerance in durum wheat genotypes in seedling stages
- Poster # 31. **Córdoba et al.** Acclimation to elevated CO₂ is improved by low Rubisco and carbohydrate content, and enhanced Rubisco transcripts in the G132 barley mutant
- Poster # 32. **Hannachi et al.** Genetic analysis of F₂ diallel crosses in durum wheat (*Triticum durum* Desf.) under semi-arid conditions
- Poster # 33. **Vicente et al.** Characterization of the transcript and metabolite responses of durum wheat to elevated CO₂ and high temperature at two nitrogen supplies using a qRT-PCR platform for central metabolism-related genes
- Poster # 34. **Martínez-Moreno et al.** Resistance to leaf rust in a core collection of ancient Spanish tetraploid wheats
- Poster # 35. **Montilla-Bascón et al.** New players in the cost of resistance: chlorophyll degradation pathway and photosynthetic dysfunctions in mlo resistant barleys
- Poster # 36. **Pallavicini et al.** Effect of yellow rust on agronomical traits in bread wheat