The Fifth Symposium on Cereal Physiology and Breeding SEFIMEC V

Lleida-Catalonia, NE Spain **8-9 May 2023**

SUMMARY OF IMPORTANT INFORMATION

FOCUS: knowledge and tools (including phenotyping) for further improving yield and quality (industrial and nutritional) of cereals grown under high-yielding as well as stressful (biotic and abiotic) conditions, in an environment facilitating scientific exchange and to synergies between cereal scientists of different degrees of maturity on a range of physiology and genetics issues that are relevant for breeding of cereals

PROGRAM: There will be three sessions (focused on Physiology of Yield, Genetics of Yield, and Grain Quality). In each of these sessions oral/poster presentations will include research on tools and methods used in the respective contexts (e.g. phenotyping or genotyping).

KEYNOTES: There will be three invited speakers to open each of the three sessions

DEADLINES:

Abstracts: 21 April 2023 (*general* final deadline)
17 March 2023 (to be considered *for Oral Presentations*)

Registration: *Early Bird*: Until 17 February 2023
Regular: From 18 February to 09 April 2023
Late: From 10 April to 08 May 2023

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INTRODUCTION

The series of Symposia on Cereal Physiology and Breeding has been aiming to create a fertile space for scientific exchange and to facilitate synergies between scientific groups working on issues of physiology, genetics and breeding of cereals. These Symposia have been initially organized within the context of the Research Network FIRCME "Physiology of Yield and Quality for the Improvement of Cereals" (funded by the Spanish Research Agency, 2018-2020) and currently continues being organized by research groups that were part of the Network together with others that join this activity.

The Symposia on Cereal Physiology and Breeding have become an ideal space for presentation of scientific and technical progresses in an environment combining rigorous but constructive discussions with a friendly atmosphere. There has always been carried out in an ideal atmosphere to gain opportunities to understand the physiological and genetic determinants of yield (both potential and under adverse conditions) and quality (both functional and nutritional) of major cereals and thus contribute to genetic improvement.

An outcome of previous Symposia on Cereal Physiology and Breeding has been the strengthened collaborations and synergies between Spanish groups and also with groups from other countries that have participated, improving the level of multidisciplinarity, impact and internationalization of research activities in the search for solutions to global agriculture, and particularly the Mediterranean areas. Therefore, this event may facilitate the establishment of consortia that could potentially participate in actions of the an International – Mediterranean initiative Partnership on Research and Innovation in the Mediterranean Area (PRIMA) Focusing on sustainable water management and food systems.

This Fifth Symposium on Physiology and Cereal Breeding will focus on knowledge and tools (including phenotyping) for further improving yield and quality (industrial and nutritional) of cereals grown under high-yielding as well as stressful (biotic and abiotic) conditions.

PROGRAM

There will be three sessions (focused on Physiology of Yield, Genetics of Yield, and Grain Quality). In each of these sessions oral/poster presentations will include research on tools and methods used in the respective contexts (e.g. phenotyping or genotyping).

Each session will be opened by a key-note presentation delivered by an invited speaker, followed by a series of oral presentations selected by the Organization from the abstracts submitted and an open discussion on the presentations delivered (with active participation of the audience as well, not just questions/answers to/from presenters), and closed by a Poster Session (that will include not only the traditional poster viewing and talks on the posters but also a preliminary "Carrousel" of flash talks by each of the poster presenters with 2 minutes per poster summarized in only two slides as a tool to attract visitors to the posters.

A preliminary outline of the SEFIMEC V program is shown below

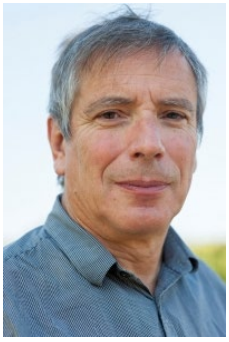
Monday, 8th of May 2023		
08.30-9.00	Registration - Accreditation	
09.00-09.15	Slafer/Savin/Romagosa	Welcome and "setting the scene"
	Session 1: *Physiology of Yield Potential and of Yield Tolerance to Stress* *Chairpersons: TBD*	
09.15-09.45	**François Tardieu, INRAE, France**	Invited keynote speaker ***Title to be announced***
09.45-10.45	Oral communications	
10.45-11.15	Coffee Break	
11.15-11.45	Open Discussion on Yield Physiology	
11.45-13.15	Carrousel of posters Session 1 followed by regular Poster Session	
13.15-14.30	Lunch	
	Session 2: *Genetics of Yield Potential and of Resilience to Biotic-Abiotic Stress* *Chairpersons: TBD*	
14.30-15.00	**Simon Griffiths, John Innes Centre, UK**	Invited keynote speaker ***Title to be announced***
15.00-16.00	Oral communications	
16.00-16.30	Open Discussion on Genetics of Yield	
16.30-17.00	Coffee Break	
17.00-18.30	Carrousel of posters Session 2 followed by regular Poster Session	
	Guided visit to Seu Vella (Old Cathedral)	
20.30	Symposium Dinner	
Tuesday, 9th of May 2023		
	Session 3: *Grain Quality (genetics and physiology)* *Chairpersons: TBD*	
09.00-09.30	**Patricia Giraldo, UPM, Spain**	Invited keynote speaker ***Title to be announced***
09.30-10.30	Oral communications	
10.30-11.00	Open Discussion on Grain Quality	
11.00-11.30	Coffee Break	
11.30-12.45	Carrousel of posters Session 3 followed by regular Poster Session	
12.45-13.00	Slafer/Savin/Romagosa	Closing the Symposium
13.00-13.45	Visit demonstration plots and open discussion (in the demonstration field)	
13.45-15.15	Lunch and Farewell	

Out of program: In a sort of satellite activity, there could be a meeting of the members of the (future) Network for organizing activities for the rest of the year and defining commitments regarding the next Symposium: SEFIMEC VI.

This could be done informally in a restricted meeting attended only by 2-3 people (the IP plus 1-2 more researchers) of each group. This satellite meeting could be organized on the Evening of Sunday 6th of May or immediately after lunch on Tuesday 9th of May. To be decided.

keynote speakers

Session 1: *Physiology of Yield Potential and of Yield Tolerance to Stress*: **Dr. François Tardieu**



Dr. François Tardieu was for several years the Director of LEPSE (the Joint Research Unit for Ecophysiology of Plants under Environmental Stress or INRAE) and is now Research Director at MAGE (Modelling and Analysis of Genotype x Environment interactions) Research Team aiming at identifying traits and alleles which can give comparative advantages (crop production, yield stability and resilience, …) under climatic scenarios affected by climate changes including periods of drought and high temperature. François is a world authority in connecting crop physiology and agronomy with breeding and management oriented to improve productivity and resilience of major crops. His research focuses on the adaptation of plant genotypes to drought scenarios, including those in 2050, via a combination of phenomics, modelling and genomic prediction. Françoise has been invited professor in the Nanjing Agricultural University, and has received awards from the French Academy, the "laurier d'Excellence INRA", and the Soil Science Society of America

Session 2: *Genetics of Yield Potential and of Resilience to Biotic-Abiotic Stress*: **Dr. Simon Griffiths**

Dr. Simon Griffiths is based at the John Innes Centre and leads the "Designing Future Wheat" (DFW) Institute Strategic Programme which inludes partners at Rothmasted, Earlham Instititute, Quadram Institute, NIAB, University of Nottingham, University of Bristol, and EMBLs European Bioinformatics Institute. He is very interested in delivering new and useful genetic variation to breeders and is chair of the DFW Wheat Breeders Toolkit Committee. Simon studies wheat genes controlling traits that determine crop yield through interaction with other genes as well as with the environment. Simon's research undertakes large scale screening of wheat lines, using mapping techniques to identify QTL for traits of interest. His lab deploys genetics and genomics to pinpoint genes within the large and complex genome of wheat. The specific DNA sequence changes that confer beneficial effects are identified and tools developed that allow breeders to use this new knowledge for the production of elite wheat varieties. Extensive use is made of landraces from the AE Watkins collection to capture genetic variation that is lost to modern bread wheat but through work carried out here can now be used. The genes identified in this work operate within molecular networks. Simon collaborates extensively with wheat physiologists to try to understand how single genetic effects fit into the big picture.

Session 3: *Grain Quality (Genetics and Physiology):* **Prof. Patricia Giraldo**

Dr. Patricia Giraldo is Professor in Genetics at the Universidad Politécnica de Madrid (UPM). She coordinates the "Plant Breeding" research group at UPM, which is focused in wheat breeding for quality. She has expertise in molecular markers, genomic association studies (GWAS) and analysis of genetic variability of germplasm for pre-breeding. She has been IP of 7 projects, and currently coordinates one project of the National R&D, one from CAM and one from European H2020. She is a member of the scientific committee of the "Expert Working Group in Improving Wheat Quality for Processing and Health" within the framework of the Wheat Initiative" consortium, and she has participated in the National Network of Excellence "Physiology of Yield and Quality for the Improvement of Cereals". She has published 36 JCR articles (23 in Q1 and 13 in Q2), 3 book chapters (H index=19) and presented more than 70 communications at congresses. She is a member of the Spanish Society of Genetics (SEG) and the European Society for Plant Breeding (EUCARPIA). She has supervised two doctoral theses and has one in progress. In addition, she has supervised more than 20 TFGs and TFMs in the last ten years

CALL FOR ABSTRACTS

Abstracts, written in English (the language of the Symposium) and of a length of 300 words or less, must be submitted before the deadline to be assigned a session for presentation. At least one of the authors must be registered in the Symposium. Each registered author will be allowed to submit a maximum of 2 abstracts as a first author (no limits for being co-author in other positions)

Accepted abstracts will be included in the symposium abstract book and shall be presented in the form of either ORAL COMMUNICATION or FLASH TALK+POSTER (the author responsible for submitting the work must indicate the preferred modality of presentation). The Scientific Committee will ultimately decide which works are to be presented as Oral Communications and which as Flash Talk + Poster.

The **deadline** for sending abstracts is **Friday 21 April 2023**, BUT only abstracts submitted until **Friday 17 March 2023** could be **considered for oral communication**. All abstracts submitted between 25/3 and 21/4/2023 will exclusively be considered to be presented as Flash Talk + Poster.

Soon the website of SEFIMEC V will be available and a Template for the Abstracts with all the formatting details will be provided.

SPECIAL ISSUE (RESEARCH TOPIC)

An agreement was reached with *Frontiers in Plant Science* to develop a Research Topic focused on SEFIMEC 2023* (Edited by GA Slafer, R Savin, I Romagosa and I Aranjuelo). Article submission based on presentations made in SEFIMEC V (as well as other articles focused on physiology, genetics and breeding of cereals) will be welcome

*following up the Research Topic developed by SEFIMEC IV (Pamplona 2021) Edited by I. Aranjuelo, E. Igartua and GA Slafer (www.frontiersin.org/research-topics/25551/sefimec-2021---physiology-and-breeding-of-field-crops)

REGISTRATION

Registration for the 5th Symposium on Cereal Physiology and Breeding will be carried out through the website that will be available soon. The Registration fee will cover participation in the Symposium (admission to all sessions), Symposium material, and all meals included in the Program (three coffee-breaks, 2 lunches and Symposium dinner).

Regular registration **300 €** for Researchers and Professionals

Reduced registration **225€** for Students (who will need to certify that condition).

These **fees will be decreased for** those who register before the **early-bird** deadline of 17 February 2023. Also the registration fee **will be increased for late registrants**.

	Early bird Registration (until 17/02/23)	**Regular Registration** (18/2 to 9/4/23)	**Late Registration** (10/4 to 8/5/23)
Researchers and Professionals	250 €	300 €	350 €
Students	200 €	225 €	250 €

VENUE and ACCOMODATION

The Venue will be within one of the campuses of the University of Lleida (either at the Events Hall –Salon de Actos- of the School of Agronomy-ETSEA- Campus, or in the Center of Cultures and Cross-Border Cooperation of the Cap.pont Campus (to be defined soon).

The organization of the symposium will not make hotel reservations. Each participant is responsible for organizing their travel and accommodation. The accommodation offer in Lleida is varied including hotels and serviced-apartments. In the website we will provide links, but likely the best way to proceed is through booking. You can also visit the official website of Lleida Tourism on “where to stay”: https://www.turismedelleida.cat/en/stay

LLEIDA

Lleida is one of the oldest towns in Catalonia, with recorded settlements dating back to the Bronze Age period. Until the Roman conquest of the Iberian Peninsula, the area served as a settlement for an Iberian people, the Ilergetes. The town became a municipality, named Ilerda, under the reign of Augustus. It was ruled by the Moors from the 8th century, and reconquered in 1149. In 1297, the University of Lleida was founded, becoming the third oldest in the whole of Spain. During the following centuries, the town was damaged by several wars such as the Reapers' War in the 17th century and the Spanish Civil War in the 20th century. Since then, the city has been in constant urban, commercial and demographic growth.

Lleida is the most important population and economic inland centre in Catalonia. Its economy is based on the agri-food sector, as well as on services.

Lleida has a number of touristic and cultural attractions, with many old and emblematic buildings in downtown. It is very much worthwhile a walk through its pedestrian Major Street. Likely the most relevant touristic attraction of the city is the *Seu Vella*, a cathedral built in a blend of Romanesque and Gothic styles over time, and made a military fortress in the 18th century. It is located in downtown over a hill overlooking the city (*Turó de la Seu*), together with another medieval building (The Castle of La Suda, built during Arab rule). A visit to La Seu Vella is to be organized as a cultural (extra) activity of the Symposium.

Lleida can be easily reached from Barcelona by highway and railway. There is a high-speed train stopping at Lleida with trains connecting the city with Madrid, Barcelona, Zaragoza, Sevilla, Malaga, and Cordoba (among other cities). There are also conventional long distance trains connecting Lleida with many other major cities across Spain. **In the website**, now under construction, **there will be detailed directions on how to arrive by car, train or bus**.