

International Conference

# FROM SEED TO PASTA III

A SUSTAINABLE DURUM WHEAT CHAIN  
FOR FOOD SECURITY AND HEALTHY LIVES



**Bologna - Italy, 19-21 September 2018**

Conference Center Emilia Romagna Region

Via della Fiera, 8 - Bologna



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# FROM SEED TO PASTA III

## A SUSTAINABLE DURUM WHEAT CHAIN FOR FOOD SECURITY AND HEALTHY LIVES

**BOLOGNA – ITALY, 19-21 SEPTEMBER 2018**

CONFERENCE CENTER REGIONE EMILIA ROMAGNA

### PRELIMINARY PROGRAM

#### WEDNESDAY 19 SEPTEMBER 2018

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08.30 – 09.00 *Registration of participants*

**09.00**            **Opening session and welcome addresses\***

*Chairs: Roberto Tuberosa (University of Bologna, Italy)*

*Curtis Pozniak (University of Saskatchewan, Canada)*

**Paolo De Castro**

*(Vice-President of Agricultural Commission & Rural Development European Parliament)*

**Simona Caselli**

*(Agriculture Counselor of Emilia Romagna Region)*

**Roberto Tuberosa**

*(Conference Chair – University of Bologna, Italy)*

09.30            **One century of durum wheat breeding: An Italian legacy**

*Antonio Blanco (University of Bari, Italy)*

10.00            **An industrial perspective for a more sustainable and safer pasta production**

*Luca Ruini (Barilla G. e R. F.lli spa, Italy)*

**10.30**            **Opening keynote\***

**Durum wheat genomics: From sequencing to breeding**

*Curtis Pozniak (University of Saskatchewan, Canada)*

11.00            *Coffee break*

**11.30 - 13.00**    **Session 1\***

**Leveraging the tetraploid wheat genomes**

*Chairs: Luigi Cattivelli (CRA, Italy),*

*Assaf Distelfeld (University of Tel Aviv, Israel)*

11.30            **The wild emmer wheat genome**

*Assaf Distelfeld (University of Tel Aviv, Israel)*

11.50            **The durum wheat genome**

*Annamaria Mastrangelo (CREA, Italy)*

12.10            **Editing the wheat genome**

*Eduard Akhunov (Kansas State University, USA)*

- 12.30 ***Rht18* Semi-dwarfism reveals a new height-reducing mechanism in wheat**  
Wolfgang Spielmeier (CSIRO, Australia)
- 12.50 Discussion
- 13.00 *Lunch*
- 14.10 - 15.30 Session 2\***  
**Tetraploid wheat genetic resources for the improvement of durum and bread wheat**  
*Chairs: Tzion Fahima (University of Haifa, Israel)*  
*Edward Akunov (Kansas State University, USA)*
- 14.10 **Signature of selection sweeps in the tetraploid wheat germplasm**  
Marco Maccaferri (University of Bologna, Italy)
- 14.30 ***Yr15* gene (*WTK1*) encodes two kinase-like protein domains and confers broad-spectrum resistance to stripe rust**  
Tzion Fahima (University of Haifa, Israel)
- 14.50 **Harnessing wild wheat alleles to enhance yield stability and productivity of modern wheat**  
Yehoshua Saranga (University of Jerusalem, Israel)
- 15.10 **Characterization of Ethiopian genetic resources for durum wheat**  
Enrico Pè (Scuola Superiore Sant'Anna, Italy)
- 15.30 *Coffee break and Poster vision*
- 16.30 - 18.45 Oral presentations selected from abstracts**  
*Chairs: Anna Mastrangelo (CREA, Italy)*  
*Wolfgang Spielmeier (CSIRO, Australia)*
- 16.30 **Pan-Transcriptome analysis of 13 elite durum wheat varieties spanning the complete breeding era decades**  
Danara Ormanbekova (University of Bologna, Italy)
- 16.45 **Selection for uniform grain dimensions and germination during wheat domestication**  
Moran Nave (University of Tel Aviv, Israel)
- 17.00 **Deciphering the genetic basis and molecular defense mechanisms of spot blotch disease resistance of durum wheat: An emerging threat to wheat production in South-East Asia**  
Chethana Chethana (University of Dharwad, India)
- 17.15 **Durum and bread wheats share common resistance genes to *Zymoseptoria tritici***  
David Milliot-Stoclin (INRA, France)
- 17.30 **A wide collection of wild emmer accessions to recover novel diversity for yellow rust resistance**  
Elisabetta Mazzucotelli (CREA, Italy)

- 17.45 **Equipping durum wheat with a major QTL for resistance to Fusarium diseases transferred from *Thinopyrum elongatum* and its pyramiding with valuable genes from *Th. ponticum***  
Ljiliana Kuzmanovic (University of Tuscia, Italy)
- 18.00 **Mining the gene pool for novel resistance sources to *Zymoseptoria tritici* in Tunisian durum wheat landraces**  
Amor Yahyaoui (CIMMYT, Mexico)
- 18.15 **Polymorphisms in the *TdDRF1* gene sequence distinguish the A and B genome copies**  
Patrizia Galeffi (ENEA, Italy)
- 18.30 **Status of durum wheat genetic resources at ICARDA**  
Athanasios Tsivelikas (ICARDA, Morocco)

## THURSDAY 20 SEPTEMBER 2018

- 08.30 - 11.00 Session 3**  
**Enhancing yield potential and yield stability of durum wheat**  
Chairs: *Conxita Royo (IRTA, Spain)*  
*Evans Lagudah (CSIRO, Australia)*
- 08.30 **Decades of breeding scab resistant durum wheat in North Dakota: Challenges and successes**  
Elias Elias (North Dakota State University, USA)
- 08.50 **Stem rust resistance in durum, particularly on sources of resistance to *Ug99***  
Yue Jin (USDA-ARS, USA)
- 09.10 **Protecting yield loss through multi-pathogen resistance genes: Benefits to durum wheat?**  
Evana Lagudah (CSIRO, Australia)
- 09.30 **Map-based cloning of FHB resistance QTL in durum wheat**  
Agata Gadaleta (University of Bari, Italy)
- 09.50 **Genomic selection in durum wheat**  
Jose Crossa (CIMMYT, Mexico)
- 10.10 **High-throughput phenotyping to enhance wheat yield potential**  
Scott Chapman (CSIRO, Australia)
- 10.30 *Coffee break and Poster vision*
- 11.00 - 12.00 Session 4**  
**Managing a sustainable durum production for food security**  
Chairs: *Agata Gadaleta (University of Bari, Italy)*  
*Scott Chapman (CSIRO, Australia)*
- 11.00 **Exploring G x E x M synergies to enhance durum wheat production**  
Brian Beres (Agriculture Agri-Food, Canada)



- 11.20 **Durum wheat nitrogen management: From monitoring to application and more**  
José Luis Araus (University of Barcelona, Spain)
- 11.40 **A decision support system for durum wheat management**  
Pierluigi Meriggi (Horta, Italy)
- 12.00 - 13.00 Oral presentations from abstracts**  
*Chairs: Pasquale De Vita (CREA, Italy)*  
*Brian Beres (Agrifood, Canada)*
- 12.00 **Genetic dissection of Fusarium head blight resistance in durum wheat**  
Giuseppe Condorelli (University of Bologna, Italy)
- 12.15 **Improving Fusarium head blight resistance in durum wheat**  
Barbara Steiner (IFA, Austria)
- 12.30 **Nitrogen response of old durum wheat cultivars compared to new released varieties in Morocco**  
Ali Amamou (INRA, Morocco)
- 12.45 **Effect of fertilizer source and timing of application on cadmium uptake of durum wheat**  
Shana Forster (North Dakota State University, USA)
- 13.00 *Lunch*
- 14.15 - 16.15 Session 5**  
**Durum wheat breeding to face climate change**  
Round table *moderated by: Filippo Bassi and Karim Ammar*
- Participants:
- Karim Ammar (CIMMYT, Mexico)
  - Filippo Bassi (ICARDA, Morocco)
  - Pasquale De Vita (CREA, Italy)
  - Ron Knox (Agriculture Agri-Food, Canada)
  - Conxita Royo (IRTA, Spain)
  - Daria Scarano (ISEA, Italy)
- 16.15 *Coffee break and Poster vision*
- 17.00 - 18.45 Oral presentations from abstracts**  
*Chairs: Enrico Pè (Scuola Superiore Sant'Anna, Italy)*  
*Barbara Steiner (University of Vienna, Austria)*
- 17.00 **Cas9 endonuclease-mediated modification of the *BRASSINOSTEROID INSENSITIVE 1* gene of wheat without genomic integration of recombinant DNA**  
Nagaveni Budhagatapalli (IPK, Germany)
- 17.15 **Breeding Australian durum wheat for quality**  
Gururaj Kadkol (Tamworth Agricultural Institute, Australia)

- 17.30 **Genetic improvement of Chilean durum wheat (*Triticum turgidum* L.var. *durum*) germplasm through integrated breeding approaches**  
Andres Schwember (Pontificia Universidad Católica, Chile)
- 17.45 **Genetic dissection of traits associated with drought and heat adaptation of durum wheat**  
Khaoula El Hassouni (ICARDA, Morocco)
- 18.00 **Phenotypic plasticity of root architecture among wild emmer wheat introgression lines promote drought tolerance**  
Harel Bacher (Hebrew University of Jerusalem, Israel)
- 18.15 **Adaptive traits to improve durum wheat yield in drought and crown rot environments**  
Samir Alahmad (University of Queensland, Australia)
- 18.30 **How to breed for a combination of high yield with high grain protein content?**  
Matthias Rapp (University of Hohenheim, Germany)

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## FRIDAY 21 SEPTEMBER 2018

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- 08.30 - 10.30 Session 6**  
**Enhancing durum quality and healthiness**  
*Chairs: Stefania Masci (University of Tuscia, Italy)*  
*Craig Morris (USDA-ARS, USA)*
- 8.30 **Durum wheat quality improvement at CIMMYT**  
Carlos Guzman Garcia (CIMMYT, Mexico)
- 8.50 **RE-evolution of durum wheat by resorting the *Hardness* locus**  
Craig Morris (USDA-ARS, USA)
- 09.10 **Celiac disease, non-celiac wheat sensitivity**  
Lud Gilissen (University of Wageningen, The Netherland)
- 09.30 **Conventional and biotechnological approaches to improve durum healthiness**  
Stefania Masci (University of Tuscia, Italy)
- 09.50 **Bioactive compounds in durum wheat**  
Marina Carcea (CREA, Italy)
- 10.10 **Durum wheat products with improved quality and nutritional value**  
Marco Gobetti (University of Bolzano, Italy)
- 10.30 **Phenolic acids in durum wheat: genetic control, genomic studies and breeding perspectives**  
Barbara Laddomada (CNR, Italy)
- 10.50 *Coffee break and Poster vision*

- 11.30 - 13.00 Oral presentations selected from abstracts**  
*Chairs: Marina Carcea (CREA, Italy)*  
*Luud Gilissen (University of Wageningen, The Netherlands)*
- 11.30      **Engineering the coeliac disease genes in durum and bread wheat by CRISPR/Cas9**  
 Susana Sanchez-Leon (IAS-CSIC Spain)
- 11.45      **Optimization of inulin and barley addition on technological and structural properties of durum wheat spaghetti using a mixture design approach**  
 Youkabed Zarroug (EISAT, Tunisia)
- 12.00      **Pasta as a vehicle of bioactive compounds: how technology can help to deliver high quality products**  
 Alessandra Marti (University of Milan, Italy)
- 12.15      **Digestibility of processed durum wheat with increased resistant starch**  
 Marina Corrado (Quadram Institute Bioscience, UK)
- 12.30      **Deoxynivalenol detoxification in transgenic durum wheat confers resistance to Fusarium head blight and Crown Rot diseases reducing grain mycotoxin contamination**  
 Giulia Mandalà (University of Tuscia, Italy)
- 12.45      **Characterization of couscous quality parameters in relation to physico-chemical technological and biochemical profiles in two different durum wheat varieties**  
 Daaloul Olfa (INRA, Tunisia)
- 13.00      *Lunch*
- 14.00 - 15.30 Session 7\***  
**Innovation in the durum wheat-pasta chain**  
*Round table moderated by Roberto Ranieri (Open Fields srl, Italy)*
- **Short summary on the innovations of pasta supply chain in the last 100 years.**  
 Roberto Ranieri (Open Fields srl, Italy)
  - **Pasta ready meal and pasta with legumes**  
 Francesco Pantò (Barilla G. e R. F.lli spa, Italy)
  - **Nutritional and healthy pasta claims**  
 Marina Mastromauro (Pastificio Attilio Mastromauro, Italy)
  - **Effect of the patent “Gluten Friendly” on pasta**  
 Pasquale Casillo (Casillo Group, Italy)
  - **Innovation in pasta making-technology**  
 Luciano Mondarini (Pavan, Italy)
  - **Traceability of the pasta supply chain**  
 Valeria Terzi (CREA, Italy)

**15.30 - 17.30 Session 8\***

**Opportunities and perspectives in wheat research**

*Chairs: Roberto Tuberosa (University of Bologna)*

*Peter Langridge (Wheat Initiative)*

**Congress keynote lecture**

**International collaboration on wheat improvement**

Hans Braun (CIMMYT, Mexico)

**Global vision of durum and bread wheat research perspectives**

Peter Langridge (Wheat Initiative)

**The PRIMA project: What role and opportunities  
for the durum value chain in the Mediterranean Basin?**

*Round table moderated by Aldo Ceriotti (CNR and EPSO)*

- Maricelis Acevedo (Cornell University, USA)
- Alessandra Gentile (CREA)
- Francesco Loreto (CNR, Italy)

**17.30**

**Closing keynote\***

**A glimpse into the future of durum breeding**

Cristobal Uauy (John Innes Centre, UK)

**18.00**

**Concluding remarks and closing of the conference**

*\*In the signed sessions simultaneous translation (English/Italian) will be provided.*