

# FROM SEED TO PASTA 5

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

BARI - ITALY, 24-27 SEPTEMBER 2025

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3 International Center for Agriculture Research in Dry Areas, Rabbat

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Antonio Costa de Oliveira 1, Valeria Oliveira Nizolli 1, Jennifer Villavicencio 1, 2, Winder Felipez 1, 5, Amanda Valentini Basegio 1, Camila Pegoraro 1, Luciano Da Maia 1

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3 Universidad Nacional "Siglo XX", Dirección General de Investigación, Llallagua, Bolivia.

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2 John Innes Centre, Norwich, United Kingdom

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Emile Cavalet-Giorsa 1, Simon Krattinger 1

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Noam Chayut 1, Ajay Siluveru 1, Mei Jiang 2, Karim Ammar 3, Shifeng Cheng 2, Noam Chayut 1

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Nasreddine Louahdi 1, Labad Ryma 2, Belguet Haroun 1, Meziani Mouna 1, Boukhobza Nawel 1

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Hakan Ozkan 1, Ali Zain 1, Melike Biçici 1, İ. Barış Çankaya 1, Benjamin Kilian 2, Michael Frei 3

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Javier Sánchez-Martín<sup>3</sup>, Benjamini Jaegle<sup>2</sup>, David Encalada Bustamante<sup>1</sup>, Victoria Widrig<sup>1</sup>

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Arisede Chisaka<sup>1</sup>, John P. Hammond<sup>1</sup>, Shinichi Nakagawa<sup>2,3</sup>, Jacob Bishop<sup>1</sup>

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Michele De Santis<sup>1</sup>, Raffale Meloni<sup>2</sup>, Pasquale De Vita<sup>3</sup>, Nicola Pecchioni<sup>3</sup>, Amedeo Reyneri<sup>2</sup>, Massimo Blandino<sup>2</sup>, Zina Flagella<sup>1</sup>

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Alejandro Del Pozo<sup>1</sup>, K. Gütter<sup>1</sup>, I. Matus<sup>2</sup>, D. Castillo<sup>2</sup>, F. Mejias<sup>1</sup>, J. Pacheco<sup>1</sup>, and A. Schwember<sup>3</sup>

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Zina Flagella<sup>1</sup>, Michele Andrea De Santis<sup>1</sup>, Francesco Ciavarella<sup>2</sup>, Michele Rinaldi<sup>2</sup>

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Yaman Jabbour 1, Mohammad Shafik Hakim 2, Hiba Alattrash 1, Hafssa Kabbaj 3, Meryem Zaïm 3, Charles Kleinerman 3, Filippo M. Bassi 3

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Giacomo Mangini<sup>1</sup>, Pasquale Luca Curci<sup>1</sup>, Angelo Petrozza<sup>2</sup>, Claudia Testolin<sup>3</sup>, Elena Baldoni<sup>3</sup>, Fabio Francesco Nocito<sup><sup>4</sup></sup>, Aldo Ceriotti<sup>3</sup>, Francesco Cellini<sup>2</sup>, Gabriella Sonnante<sup>1</sup>

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Amani Romdhane 1, Khouloud Chetoui 1, Salma Tissaoui 2, Romdhane Nasraoui 3, Abdennour Sebei 2, Noura Omri Ben Youssef 2, Noura Jammezi 2, Mariem Balloumi 2, Salah BenYoussef 1

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Fabrizio Spadanuda 1, Fabio Fania 1-2, Ivano Pecorella 2, Damiano Puglisi 2, Filippo Maria Bassi 3, Nicola Pecchioni 2, Pasquale De Vita 2

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Mona Taghouti 1, G. Diria 1, F. Gaboune 1, K. M'bida 2, H. El Bouzidi 3

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Zait Yotam - The Hebrew University of Jerusalem, Israel



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Karim Ammar 1, Susanne Dreisigacker 1, Angela Pacheco Gill  
1 CIMMYT-Mexico

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Francisco Andrade Martin 1, Juan B. Alvarez 1, Nieves Aparicio 2, José Luis Araus 3, Fiona Doohan 4, Marco Maccaferri 5, Matteo Bozzoli 5, Justin Blancon 6, Sophie Bouchet 6, María Itria Ibba 7, Carlos Guzmán 1

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Abbas Assad 1, Jing He1, Afroz Naznin1, Damilola Dauda1, Kun Ning1, Yuanyuan Wang1, Jayakumar Bose1, Zhonghua Chen1\*

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Marco Bonarrigo<sup>1</sup>, Giulio Metelli<sup>1</sup>, Bernardo Messina<sup>2</sup>, Giuseppe Russo<sup>2</sup>, Francesco Sestili<sup>1</sup>, Stefania Masci<sup>1</sup>

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Ida Colella 1; Giuseppina Angione 2,3; Fabio Fania 2,3; Patrizio Spadanuda 2,3; Damiano Puglisi 2; Salvatore Esposito 4; Riccardo Aiese Cigliano 5; Rosa Barcelona Cabeza 5; Francesco Sestili 1; Pasquale De Vita 2;

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5. *Sequentia Biotech SL, Barcelona, Spain*

### P.40 Transcriptomic profiling reveals divergent nitrogen deprivation responses in durum wheat cultivars

Pasquale Luca Curci 1, Giacomo Mangini 1, Diana Lucia Zuluaga 1, Francesco Punzi 1-2, Emanuela Blanco 1, Gaetano Laghetti 1, Barbara Laddomada 3, Gabriella Sonnante 1

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Pasquale De Vita 2, Da Colella 1,2, – Giuseppina Angione 2,3, – Salvatore Esposito 4 – Samuela Palombieri 1- Francesco Sestili 1

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Francesca Desiderio 1, Davide Guerra 1, Elisabetta Mazzucotelli 1, Giulia Castorina 1, Giorgia Carletti 1, Lorenzo Covarelli 2, Giovanni Beccari 2, Ioannis Mylonas 3, Hakan Özkan 4, Einav Mayzlish-Gati 5, Avraham A Levy 5, Luigi Cattivelli 1

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5- Department of Plant and Environmental Sciences, The Weizmann Institute of Science, Rehovot, Israel.

### P. 43 Genetic variation and association mapping studies in elite spring bread wheat genotypes for yield and other agronomic traits under irrigated and rainfed environments

Zakaria El Gataa 1

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### P. 44 Genetic Dissection of Root Growth Angle Reveals Breeding Targets for Drought-Resilient Durum Wheat

Genet Atsbeha Fiseha 1, Muhammad Awais Farooq1, Martina Bruschi1, Manar Makoul2, Francisco Pinto4, Chunyi Liu1, Xinying Zheng1, Cristian Forestan1, Matteo Bozzoli1, Matthew Reynolds4, Rod J Snowdon 2, Silvio Salvi1, Eric Ober3, Roberto Tuberosa1, Marco Maccaferri1.

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### P. 45 Genetic Diversity and Genome Wide Association Study in Tetraploid Wheat (*Triticum* spp.) Genotypes from Ethiopia Turgidum

Miheretu Fufa 1,2, Andargachew Gedebo 1, Tesfaye Letta 2, Dangachew Lule 2, and Anna Maria Mastrangelo 3

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### P. 46 Technological quality of durum wheat pasta as affected by soil tillage and fertilization management

Laura Gazza1, Francesca Nocente 1, Roberto Mancinelli 2, Marta Naso 1, Gaia Blandizzi 1, Gabriele Chilos 3

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Nayeli Hernandez-Espinosa 1, Maria Itria Ibba 1

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**P. 48 The valorization of Apulian durum wheat landraces through their collection, characterization, and storage: the project SaveGrain-CER**

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**P. 49 History of durum wheat in Spain**

Fernando Martinez-Moreno 1

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**P. 50 Assessment of a Balkan Durum Panel for Virus Resistance and Sustainable Wheat Production**

Dragan Perovic 1, Heike Lehnert2, Cai Yu1, Katy Niedung1, Jelena Zindovic3, Zoran Jovovic3, Giacomo Mangini7, Mariella Matilde Finetti-Sialer7, Novo Przulj4, Marco Maccaferri5, Peter Dracatos6, Ana Velimirovic3

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**P. 51 Introgression breeding for durum wheat improvement**

1 Edina Türkösi, 1 Klaudia Kruppa, 1 Eszter Gaál, 1 Balázs Kalapos, 2 Ilaria Marcotuli, 2 Agata Gadaleta, 1 István Molnár

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**P. 52 Genomic Design-Driven Enhancement of Processing Quality in Common Wheat**

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Ines Yacoubi 1, Karama Hamdi 1, Fatma Masmoudi 2, Najeh Krayem 3, Marcello Greco Miani 4

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#### P. 55 Impact of Chilean Environmental Conditions on Durum Wheat Quality: Adverse And Optimal Scenarios

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#### P. 56 Discovering transcriptional regulators of drought-induced senescence in wheat

Miles Cull<sup>1</sup>, Catherine Evans<sup>2</sup>, Chris Burt<sup>3</sup>, Nick Bird<sup>4</sup>, Rachel Goddard<sup>5</sup>, Gurpinder Singh Sidhu<sup>6</sup>, Richard Morris<sup>6</sup>, Philippa Borrill<sup>1</sup>

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#### P. 57 Characterization of Ppo-A1 alleles and their impact on PPO activity in tetraploid wheat

Domenico De Paola 2, Fanelli V.1, Dellino M. 1, De Paola D. 2, De Giovanni C. 1, Minervini A.P. 2, Mangini G. 2, D'Agostino N. 3, De Vita P. 4, Montemurro C. 1,5,6, Taranto F. 2

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Laura Gazza<sup>1</sup>, Eder Groli<sup>2</sup>, Mariarosa Giordano<sup>2</sup>, Simone Palmirani<sup>2</sup>, Andrea Raggi<sup>2</sup>, Alessandro Cammerata<sup>1</sup>, Viviana Del Frate<sup>1</sup>, Marta Naso<sup>1</sup>, Ester Gosparini<sup>1</sup>, Alessandra Arcangeli<sup>1</sup>, Roberto Mortaro<sup>1</sup>, Cristina Cecchini<sup>1</sup>, Stefano Ravaglia<sup>2</sup>

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**P. 59 Harnessing Genomic Tools to Accelerate Breeding for Heat Tolerance in Durum Wheat in West Africa**

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**P. 60 Genome-Wide Association Study Identifies Novel SNPs for Forage Quality and Related Traits in Dual-Purpose Winter Wheat**

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**P. 61 G X E interaction and its effect on yield components of durum wheat under terminal drought conditions in the Mediterranean dryland of central Chile.**

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### P. 63 Evaluation of Moroccan durum wheat (*Triticum turgidum L. ssp. durum*) genotypes under seedling-stage drought stress in controlled conditions

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### P. 64 Genetic discovery of fast dry down characteristics in durum wheat

Yuefeng Ruan 1\*, Jatinder S. Sangha 1\*, Ron Knox 2§, Curtis Pozniak 3, Brad Meyer 1, Tinku Gautam 1, Firdissa Bokore 1, Richard D. Cuthbert 1, Greg Viers 5, Wentao Zhang 4, Samia Berraies 1

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### P. 65 Enhancing Drought Resilience in Tetraploid Wheat: The Role of Polyphenol Oxidases and Microbial Inoculation

Francesca Taranto 1, Minervini A.P. 1, Pellegrini A. 1, Procino S. 1, Bianco C. 2, Logozzo G. 3, Marzario S. 3, Prestera M. 3, Placido G. 3, Morante C. 3, Verrastro V. 3, Mangini G. 1, De Vita P. 4, Gioia T. 3, D'Agostino N.5

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- P. 66 Novel k-mer based genomic tools enable rapid discovery of crop wild relative introgressions, uncovering a novel loci for Hessian Fly resistance.

Anna Elisabeth Backhaus 1, Kabbaj, Hafssa1; Cavalet-Giorsa, Emile2; Quiroz-Chavez, Jesus4; Boulamat, Rachid1; El'Bouhssini, Mustapha3; Walkowiak, Sean5; Bassi Filippo1

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- P. 67 Durum Wheat Breeding for the Senegal River Basin: High-yielding Cultivars Adapted to heat in Northwest Africa

Filippo Bassi 1

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- P. 68 Identification of QTLs for Resistance to Leaf Rust, Yellow Rust, and Septoria Tritici Blotch Using Association and Linkage Mapping in Durum Wheat

Luca Ceccato<sup>1</sup>, Eugenia Carini<sup>1</sup>, Matteo Bozzoli<sup>1</sup>, Chunyi Liu<sup>1</sup>, Francesco De Sario<sup>1</sup>, Rafika Benbernou<sup>2</sup>, Fabrice Ntakirutimana<sup>2</sup>, Manon Delanoue<sup>2</sup>, Nicolas Lapalu<sup>2</sup>, Frédéric Suffert<sup>2</sup>, Thierry C. Marcel<sup>2</sup>, Chiara Cappucci<sup>1</sup>, Muhammad Awais Farooq<sup>1</sup>, Elisabetta Mazzucotelli<sup>2</sup>, Paola Viola<sup>3</sup>, Carlo Invernizzi<sup>3</sup>, Roberto Tuberosa<sup>1</sup>, Marco Maccaferri<sup>1</sup>;

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**P. 69 Loci relevant for Yellow Rust Resistance in Durum Wheat adapted to the Mediterranean environments identified in cultivated and landrace germplasm through genome-wide association study**  
Liu Chunyi 1, Francesco De Sario1, Muhammad Awais Farooq1, Jad B Novi1, Shruti Dilip Desai1, Ambra Viviani1, Alessia Confortini1, Eugenia Carini1, Matteo Bozzoli1, Cristian Forestan1, Sandra Stefanelli1, Elisabetta Mazzucotelli2, Francesca Desiderio2, Anna M Mastrangelo3, Daniela Marone3, Paola Viola4, Carlo Invernizzi4, Rola El Amil5, Nazari Kumarse6, Hakan Hozkan7, Isam Bashour8, Mohamed E Sharif Ragab9, Idrissi Omar 10, Pablo Roncallo,11 Zahara Pourkhorshid12, Filippo M Bassi13, Luigi Cattivelli2, Roberto Tuberosa1, Agata Gadaleta14, Marco Maccaferri1

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**P. 70 Susceptibility and attractiveness of ancient and old wheats to *Sitophilus granarius* (L.) and *Rhyzopertha dominica* (F.)**

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**P. 71 Evaluation of yield and quality traits in moderately Fusarium head blight resistant Durum wheat lines**

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### P. 73 Unraveling the genetic determinants of host specificity in the Zymoseptoria tritici– Wheat pathosystem

Ulysse Guilloteau1, Emmie Dzialo1, Lola Longayrou1, Anaïs Bosc-Bierne1, Vincent Leporini1, Rafika Benbernou1, Hélène Rimbert2, Olivier Soudiere3, Fabrice Ntakirutimana1, Karim Ammar3, Cyrille Saintenac2, Nicolas Lapalu1, Thierry C Marcell1

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### P. 74 Durum landraces as valuable gene pool to uncover and map resistance to Septoria Tritici Blotch

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### P. 75 Performance of Ethiopian Durum and Bread Wheat Varieties and Candidate Lines Under High of Yellow Rust Pressure in 2023

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### P. 76 Resistance durum wheat to Rhopalosiphum padi

1Bożena Kordan, Anna Wróblewska-Kurdyk, 3) Mariusz Kowalczyk, 3) Iwona Kowalska, 4) Jan Bocianowski, 2) Katarzyna Dancewicz, 1) Agnieszka Pszczołkowska, 2) Beata Gabryś

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**P. 77 A novel 1RS perennial rye chromosome arm introgressed into bread wheat enhances rust resistance and grain yield**

Klaudia Kruppa, Éva Szakács, Kitti Szőke-Pázsi, Edina Türkösi, Eszter Gaál, András Farkas, László Ivanizs, Péter Kovács, Norbert Hidvégi, Andrea Gulyás, István Molnár

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**P.78 The adaptive metabolomic response of pistils to heat stress applied at anthesis in durum wheat-*Thinopyrum ponticum* recombinant genotypes**

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**P. 79 Evaluation of granary weevil utilization efficiency in pigmented wheat varieties using nutritional indices**

Federica Lo Muzio 1, Ilaria D'Isita1, Michele Romanelli1, Giovanni Iadarola1, Barbara Laddomada2, Sara Mancarella2, Marco Pistillo1, Giuseppina Angione1,3, Fabio Fania3, Pasquale De Vita3, Giacinto S.

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**P. 80 Breeding for Better Durum: Enhancing Defence Against FHB Disease**

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**P.81 Enhancing Nigeria's Food Security through Collaborative Durum Wheat (*Triticum turgidum* subsp. *Durum* Desf.) Innovation**

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**P. 82 Genetic and Phenotypic Characterization of A 16-Way Magic Population for Traits of Agronomic Interest in Durum Wheat**

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Germain Montazeaud<sup>1</sup>, Pierre Roumet<sup>1</sup>, Mickaël Lamboeuf<sup>2</sup>, Christian Jeudy<sup>2</sup>, Martin Ecarnot<sup>1</sup>, Lise Malicet-Chebbah<sup>1</sup>, Christophe Salon<sup>2</sup>, Hélène Fréville<sup>1</sup>

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Barbara Steiner<sup>1</sup>, Karim Ammar<sup>2</sup>, Agata Gadaleta<sup>3</sup>, Anna Maria Mastrangelo<sup>4</sup>, Hermann Buerstmayr<sup>1</sup>, Luigi Cattivelli<sup>5</sup>

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Salma Tissaoui<sup>1</sup>, Amani Romdhane<sup>2</sup>, Salah BenYoussef<sup>2</sup>, Abdennour Sebei<sup>1</sup>, Noura Jammezi<sup>1</sup>, Mariem Balloumi<sup>1</sup>, Khouloud Chetoui<sup>2</sup>, Noura Omri BenYoussef<sup>1</sup>

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Meryem Zaim 1, Noureddine El Haddad 2, Andrea Visioni 1, Miguel Sanchez-Garcia 1, Zakaria Kehell 1, Amadou Tidiane Sall 3, Rola El Amil 4, Wasihun Lagesse 5, Kachalla Mala 6, Hajar Ben Ghanem 7, Benjamin Kilian 8, and Filippo M. Bassi 1

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Ana Laura Achilli 4, Pablo F. Roncallo 1,2; Susanne Dreisigacker 3; Curtis J. Pozniak 4; Viviana C. Echenique 1

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Lorenzo Calzini (1), Matteo Bozzoli (1), Cristian Forestan (1), Ambra Viviani (1), Francesco Camerlengo (1), Robert Eric Hoffie (2), Jochen Kumlehn (2), Roberto Tuberosa (1), Marco Maccaferri (1)

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2: Plant Reproductive Biology, Leibniz Institute of Plant Genetics and Crop Plant Research, Germany

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Pasqualina Colasuonno 1, Ilaria Marcotulli 1, Josè Miguel Soriano 2, Sara Muciaccia 1, Stefania Lucia Giovel 1, Agata Gadaleta 1

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Maria Lia Di Romana 1, Carla Ceoloni 1

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Gilad Gabay 1, Jigar Arvindbha Sutariya 1, Juan M Debernardi 2, Jorge Dubcovsky 3,4

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Fabiola Iurino 1, Ilaria Marcotuli 1, Pasqualina Colasuonno 1, Antonia Mores 1, Davide Caranfa 1, Agata Gadaleta 1

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Anna Maria Mastrangelo 1, María Dolores Requena-Ramírez 1,9, Elisabetta Mazzucotelli 1, Daniela Marone 2, Sherif Ragab Mohamed El-Areed 3, Omar Idrissi 4, Ali Amamou 4, Laila Satia 4, Aziz Baidani 5, Esra Çakır 6, Hakan Ozkan 6, Pasquale Garofalo 7, Alessandro Vittorio Vonella 7, Muhammad Awais Farooq 8, Xinying Zeng 8, Matteo Bozzoli 8, Antonia Mores 2, Giuseppe Petruzzino 2, Valentina Giovanniello 2, Sergio G. Atienza 9, Ilaria Marcotuli 10, Agata Gadaleta 10, Marco Maccaferri 8, Luigi Cattivelli 1

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Antonia Mores 1, Ilaria Marcotuli 1, Pasqualina Colasuonno 1, Stefania Lucia Giove 1, Agata Gadaleta 1

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Miriam Negussu 1, Francesco Camerlengo 1, Debora Giorgi 2, Francesco Sestili 1, Carla Ceoloni 1

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Francesca Orlando (1), Chiara D'Attilia (1), Valentina Bigini (1), Francesco Sestili (1), Fabio D'Orso (2), Daniel Valentin Savatin (1)

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Claudia Araceli 1; Isabelle La Jeunesse: 1, 2; Marco Dettori: 3; Claudia Cirelli: 1; Alicia Blanchi-Sci: 1  
1: Université de Tours  
2: Université Côte d'Azur  
3: AGRIS

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O. Bachrouch 1, H. Ben Ghanem 2, L. Gayess 3, S. Somrani 2, K. Horchani Ennaifer 4 , A. Amdouni 5, M. Abderraba 3  
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5 *La Coopérative Centrale des Semences, COSEM, sis au 46 Rue des travailleurs, 2010, Manouba*

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Houda Bousselham 1, Mounira Azerou 1, Meryem Zaim 1, Hafssa Kabbaj 1, Andrea Visioni 1, Amal Safi 2, Filippo M. Bassi 1,  
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2- *Faculty of Sciences and Techniques of Mohammedia, University Hassan II of Casablanca, Morocco*

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Davide Caranfa1, Ilaria Marcotulli1, Patricia Cabas-Lühmann2, Antonia Mores1, Stefania Lucia Giove1, Andrés R. Schwember2, Pasqualina Colasuonno1, Maria Simone1, Sara Muciaccia1, Agata Gadaleta1  
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Alessio Cimini<sup>1</sup>, Giacomo Buglia<sup>1</sup>, Lorenzo Morgante, Alessandro Benelli<sup>1</sup>

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C. D'Attilia (1), V. Buffagni (2), S. Hayta (2), M. A. Smedley (2), M. Bonarrigo (1), S. Masci (1), S. Palombieri (1), F. Sestili (1).

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Gilad Gabay - *University of the Negev, Israel*

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Laura Gazza 1, Francesca Nocente 1, Roberto Mancinelli 2, Marta Naso 1, Gaia Blandizzi 1, Gabriele Chilosì 3, Laura Gazza 1

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Julio Isidro y Sánchez, Alejandro Domínguez Rondón<sup>1</sup>, Julián García-Abadillo<sup>1</sup>, Ron Knox<sup>§2</sup>, Firdissa E. Bokore<sup>2</sup>, Kerry Boyle<sup>3</sup>, Karim Ammar<sup>4</sup>, Julio Huerta-Espino<sup>5</sup>, Samia Berraies<sup>2</sup>, Brad Meyer<sup>2</sup>, Wentao Zhang<sup>3</sup>, Richard D. Cuthbert<sup>2</sup>, Pierre Fobert<sup>§3</sup>, Yuefeng Ruan<sup>2\*</sup>, Julio Isidro y Sánchez<sup>1</sup>

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Barbara Laddomada<sup>1</sup>, Elisabetta Cavalcanti<sup>2</sup>, Samuela Palombieri<sup>3</sup>, Francesco Sestili<sup>3</sup>, Marcello Chieppa<sup>4</sup>, Angelo Santino<sup>1</sup>

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Maneka Malalgoda<sup>1</sup>, Mackenzie Ferguson<sup>1</sup>, Doug Cattani<sup>2</sup>, Bin Xiao Fu<sup>3</sup>

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### P. 110 Biocontrol activity of yeast strains against *Aspergillus ochraceus* on Cereal products

Safa Oufensou 1,2\*, Koumba Mai Kone 3, Virgilio Balmas 1,2 Giampiera Porqueddu 1, Targo Simplice Guehi 4, Quirico Micheli 1,2

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Laura Pascual, Naima Bouabdellah 1, Joaquín Algorta 1, José Miguel Soriano 2,3, Magdalena Ruiz 4, Patricia Giraldo 1

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Hélène Pidon 1, Valentin Ribaut1, Matteo Bozzoli2, Hélène Pidon1, Véronique Viader1, Michel Bonnefoy3, Morgane Ardisson1, Sylvain Santonni1, Faharidine Mohamadi3, Marco Maccaferri2, Jacques David1,  
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2 – Universita' Di Bologna – Department of Agricultural Sciences, Italy  
3 – Arvalis – Institut Du Vegetal, France

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Rosa Ragone1, Biagia Musio, 1; Stefano Todisco 1; Antonino Rizzuti 1; Maria Trisolini 1; Marica Antonicelli 1; Mario Latronico 1, 2; Piero Mastrorilli 1, 2; Vito Gallo 1,2.  
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2. Innovative Solutions, Spin Off of Polytechnic of Bari, Italy

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Dorra Sfayhi Terras 1, Abessi, B1., Zarroug Y1., Ben Youssef, S2., Sbei A1., Romdhane, A2, Tissaoui S1, Ouji, S1., Ben wada, M1., Omri Ben Youssef, N1.  
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Maria Trisolini1, Agata Gadaleta3, Maurizio Triggiani1,2, Stefano Todisco1, Rosa Ragone1, Antonino Rizzuti1, Biagia Musio1, Mario Latronico1,2, Piero Mastrorilli1,2, Ilaria Marcotuli3, Pasqualina Colasuonno3, Vito Gallo1,2  
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Dario Capizzi<sup>1</sup>, Michele Ruzza<sup>1</sup>, Michele Albertazzi<sup>1</sup>, Isabel Martinez Sanudo<sup>2</sup>, Luca Mazzon<sup>2</sup>, Sara Savoldelli<sup>3</sup>

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