

First RECROP Annual Meeting - COST Action CA22157

Climate-Proof Crop Reproduction: from lab to farm

Day 1: May 22, 2024

8:00-10:00 Registration Pleiades building, Campus de Espinardo

10:00-10:15 Welcome and RECROP COST Introduction

10:15-10:55 **Keynote Speaker Heribert Hirt (KAUST, Saudi Arabia)**

10:55-11:15 Coffee Break

Session 1: Plant Reproduction Under Abiotic Stresses I

Chairs: Francisco Perez-Alfocea & Pilar Sanchez Testillano

11:15-11:35 **Helene Robert Boisivon** (Czech Republic)
Impact of high temperatures on seed development in Arabidopsis thaliana

11:35-11:55 **Thomas Dresselhaus** (Germany)
Heat stress induced sterility in maize caused by pollen development and tube growth defects supported by a MaizeStressDB

11:55-12:15 **Mateja Germ** (Slovenia)
Silicon mitigates drought stress effects on barley growth and performance

12:15-12:35 **Ivo Rieu** (The Netherlands)
Flower bud cooling improves male reproductive development during heatwaves

12:35-12:55 **Michal Lieberman-Lazarovich** (Israel)
A new genetic resource for heat tolerance in tomato - characterization of a Solanum pimpinellifolium BIL population

12:55-13:00 **Hana Daryanavard** (Belgium)
At the right time and in the right place: flavonols in pollen development

13:05-13:10 **Sudev Sankar** (Switzerland)
Investigating the Molecular Basis of Environmentally Induced Sex Reversal in Carica papaya

13:10-13:15 **Beáta Strejčková** (Czech Republic)
VRN1 expression dynamics in barley: from vegetative growth to reproductive stage

13:15-15:00 Lunch & Poster Session I

Session 1: Plant Reproduction Under Abiotic Stresses II

Chairs: Marcos Egea-Gutiérrez Cortines & Michal Lieberman-Lazarovich

15:00-15:30 **Keynote Speaker Francisco Perez Alfócea (CEBAS-CSIC, Spain).**
Pollinator-assisted plant phenotyping and breeding under environmental pressure

15:30-15:50	Manuel Nieves Cordones (Spain) <i>Potassium transport in tomato reproductive tissues: physiological role of the potassium transporter SIHAK5</i>
15:50-16:10	Petra Prochazkova Schrupfova (Czech Republic) <i>GOLEM: distribution of Gene regulatOry eLEMents within plant promoters of genes expressed in the male gametophyte</i>
16:10-16:30	Marta A. Mendes (Italy) <i>Epigenetic mechanisms regulating ovule number and fertility in drought stress conditions</i>
16:30-16:50	Almira Konjic (Bosnia and Herzegovina) <i>Seasonal variation in weather conditions during the flowering period affect the pollinizer success rate within pear, plum and apple orchards in Norway</i>
16:50-16:55	Kateřina Kaduchova (Czech Republic) <i>Unraveling the impact of heat stress on nuclear organization in cereal crops: insights from barley (<i>Hordeum vulgare</i>) fluorescent marker lines</i>
16:55-17:00	Avilien Dard (Belgium) <i>Surfing the ROS Wave: HDA6's Journey Through Heat Stress Adaptation, from Chromatin to Cytosolic Stress Granules</i>
18:00-20:00	GUIDED TOUR TO THE CITY OF MURCIA
20.30	OPENING EVENT WITH SPANISH WINE AT REAL CASINO DE MURCIA

Day 2: May 23, 2024

Session 2: Abiotic Stress Sensing, Signalling, and Response

Chairs: Jan Fila & Helene Robert Boisivon

09:00-09:20	Sotirios Fragkostefanakis (Germany) <i>Increasing crop resilience to heat stress by rewiring transcription and RNA splicing: the example of tomato</i>
09:20-09:40	Francesca Silvana (Italy) <i>Integrated physiological and genetic data reveal differential responses to heat stress in two tomato genotypes</i>
09:40-10:00	Joelle Mühlemann (Belgium) <i>Uncovering regulators of reactive oxygen species homeostasis in pollen during heat stress</i>
10:00-10:20	Ülo Niinemets (Estonia) <i>Use of plant-emitted volatiles to detect abiotic stress, stress severity and stress progression</i>
10:20-10:40	Gerrit Beemster (Belgium) <i>Chilling recovery elicits differential growth, cellular, osmotic and antioxidant responses in maize (<i>Zea mays</i>) genotypes with different susceptibility to low temperature</i>
10:40-10:45	Francisco Rubio (Spain) <i>Transport systems for K⁺ uptake and distribution in tomato plants and their regulation</i>
10:45-10:50	Christina Skodra (Greece) <i>Uncovering key cold-regulated gene transcription factors of the ERF family in olive trees through systems biology analysis</i>

10:50-10:55	Jesús Guillamón (Spain) <i>Target metabolomics and transcriptomics unveil the association between ACC and ABA under salinity in tomato</i>
10:55-11:00	Stella Provelengiou (Greece) <i>Wikifamer: a free online knowledge library for professional or amateur farmers</i>
11:00-11:30	Coffee Break & Poster Session II

Session 3: Breeding for Climate Resilience Crops

Chairs: Christos Bazakos & Marta Mendez

11:30-11:50	Maria Manuela Rigano (Italy) <i>Evaluation of drought and heat stress tolerance traits in a <i>Solanum pennellii</i> introgression tomato line</i>
11:50-12:10	Aleksandra Radanovic (Serbia) <i>Designing climate-smart sunflower</i>
12:10-12:30	Faheem Shehzad Baloch (Turkey) <i>Genomic for sustainable agriculture: Few examples with case studies</i>
12:30-12:50	Eduardo D. Munaiz (France) <i>Two different strategies for breeding resilient crops: high-throughput studies of epicuticular waxes, and stay-green genetic studies.</i>
12:50-12:55	Juan Antonio López García (Spain) <i>Bumblebees foraging decisions as an indicator of plant adaptations to salinity mediated by root ABA production and mycorrhiza in tomato</i>
12:55-13:00	Maialen Ormazabal (Spain) <i>Rootstock x salinity x pollinator effects on nutritional values in tomato fruit</i>
13:00-14:00	Lunch Break

Session 4: Biotechnology, Gene editing and Systems Biology Approaches to Decipher Crop Resilience

Chairs: Nigel Wallbridge & Marta Vazquez Vilar

14:00-14:20	Guillaume Ramstein (Denmark) <i>Discovery of impactful variants by artificial intelligence to support next-generation breeding</i>
14:20-14:40	Musa Kavas (Turkey) <i>CRISPR-mediated Mutation of Cytokinin Signaling Genes <i>SIHP2</i> and <i>SIHP3</i> in Tomato</i>
14:40-15:00	Nataša Čereković (Bosnia and Herzegovina) <i>Effects of drought stress on leaf gene expression during flowering in blackcurrant (<i>Ribes nigrum</i> L.)</i>
15:00-15:20	Antonio Granell (Spain) <i>New Genomic Techniques and the current status of the new EU legislation proposal</i>

15:20-15:30	Pascual García-Pérez (Italy) <i>Depicting the functional signature of biostimulants in heat-stressed crops through integrative chemometrics based on agronomical traits and untargeted metabolomics profile.</i>
15:30-15:40	Elena Carneros (Spain) <i>New biotechnological strategies with small molecules to promote cell reprogramming for crop plant regeneration and breeding</i>
15:40-16:40	Coffee Break & Meet the Sponsors
16:40-18:00	WG member meetings + remarks
18:00-19:30	MC member meetings
20:30	CONFERENCE DINNER

Day 3: May 24, 2023

Session 5: Chemical Priming and Modern Practices for Increased Crop Yields in Challenging Environments

Chairs: Toni Granell & Maria Borja-Martínez

09:00-09:35	Keynote Speaker Ron Mittler (University of Missouri, USA)
09:35-09:55	Nataša Lukić (Bosnia and Herzegovina) <i>Transgenerational Plant Stress Memory: Enhancing Fitness in Challenging Environments</i>
09:55-10:15	Dunja Šamec (Croatia) <i>Exploring Living Fossil Plants: Unveiling Novel Molecules for Chemical Priming</i>
10:15-10:35	Vassilis Fotopoulos (Cyprus) <i>Enhancing salt stress tolerance in corn salad (<i>Valerianella locusta</i>) through melatonin and salicylic acid nanocomposite seed priming: A smart delivery approach</i>
10:35-10:40	Sara Esperanza Martínez Lorente (Spain) <i>Use of plant cell culture-derived biostimulants on Brassica seeds for acquiring tolerance to abiotic stress.</i>
10:40-10:45	Rosa Rivero (Spain) <i>Melatonin and nitric oxide interplay under abiotic stress combination</i>
10:45-11:15	Closing remarks and Coffee Break
11:15-13:45	ROUND TABLE: Towards sustainable Agriculture under conditions of climate change
13:45	CLOSING COFFEE BREAK