



## “HARNESSTOM meets Climate-Proof Crop Reproduction experts”

HARNESSTOM coordinator will take part in the meeting organized under the aegis of RECROP COST Action CA 22156 on the topic of “Climate-proof Crop Reproduction: from lab to farm” ( <https://www.recrop-cost.com/> ). The three-day meeting will take place at the University of Murcia, Spain from the 22 to the 24 of May 2024, organized by Maria Angeles Pedreño and Begoña Miras-Moreno.

Apart from taking active part in the organization of the meeting as a member of the Scientific Organizing Committee, HARNESSTOM coordinator will chair Session V: Biotechnology and Gene Editing as Tools to Enhance Crop Abiotic Stress Resistance and give a presentation on this topic covering genome editing in tomato and the current stage of the NGT legislation in EU.

Prebreeding activities for increase resilience in the face of climate change are part of the main objective of HARNESSTOM workpackage five and this meeting in Murcia will be an excellent opportunity to present HARNESSTOM results and interact with other groups working in plant tolerance to abiotic stresses and more importantly on the effect of increased temperature and water availability and salinity on reproductive traits.



The [program](#) can be found below:



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	<b>Manuel Nieves Cordones</b> (Spain) <i>Potassium transport in tomato reproductive tissues: physiological role of the potassium transporter SIHAK5</i>
15:50-16:10	<b>Petra Prochazkova Schrupfova</b> (Czech Republic) <i>GOLEM: distribution of Gene regulatOry eLEMents within plant promoters of genes expressed in the male gametophyte</i>
16:10-16:30	<b>Marta A. Mendes</b> (Italy) <i>Epigenetic mechanisms regulating ovule number and fertility in drought stress conditions</i>
16:30-16:50	<b>Almira Konjic</b> (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	<b>Kateřina Kaduchová</b> (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	<b>Avilien Dard</b> (Belgium) <i>Surfing the ROS Wave: HDA6's Journey Through Heat Stress Adaptation, from Chromatin to Cytosolic Stress Granules</i>
18:00-20:00	<b>GUIDED TOUR TO THE CITY OF MURCIA</b>
20.30	<b>OPENING EVENT WITH SPANISH WINE AT REAL CASINO DE MURCIA</b>

## Day 2: May 23, 2024

### Session 2: Abiotic Stress Sensing, Signalling, and Response

Chairs: Jan Fila & Helene Robert Boisivon

09:00-09:20	<b>Sotirios Fragkostefanakis</b> (Germany) <i>Increasing crop resilience to heat stress by rewiring transcription and RNA splicing: the example of tomato</i>
09:20-09:40	<b>Francesca Silvana</b> (Italy) <i>Integrated physiological and genetic data reveal differential responses to heat stress in two tomato genotypes</i>
09:40-10:00	<b>Joëlle Mühlemann</b> (Belgium) <i>Uncovering regulators of reactive oxygen species homeostasis in pollen during heat stress</i>
10:00-10:20	<b>Ülo Niinemets</b> (Estonia) <i>Use of plant-emitted volatiles to detect abiotic stress, stress severity and stress progression</i>
10:20-10:40	<b>Gerrit Beemster</b> (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	<b>Francisco Rubio</b> (Spain) <i>Transport systems for K<sup>+</sup> uptake and distribution in tomato plants and their regulation</i>
10:45-10:50	<b>Christina Skodra</b> (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	<b>Jesús Guillamón</b> (Spain) <i>Target metabolomics and transcriptomics unveil the association between ACC and ABA under salinity in tomato</i>
10:55-11:00	<b>Stella Provelengiou</b> (Greece) <i>Wikifamer: a free online knowledge library for professional or amateur farmers</i>
11:00-11:30	<b>Coffee Break &amp; Poster Session II</b>

### Session 3: Breeding for Climate Resilience Crops

Chairs: Christos Bazakos & Marta Mendez

11:30-11:50	<b>Maria Manuela Rigano</b> (Italy) <i>Evaluation of drought and heat stress tolerance traits in a <i>Solanum pennellii</i> introgression tomato line</i>
11:50-12:10	<b>Aleksandra Radanovic</b> (Serbia) <i>Designing climate-smart sunflower</i>
12:10-12:30	<b>Faheem Shehzad Baloch</b> (Turkey) <i>Genomic for sustainable agriculture: Few examples with case studies</i>
12:30-12:50	<b>Eduardo D. Munaiz</b> (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	<b>Juan Antonio López García</b> (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	<b>Maialen Ormazabal</b> (Spain) <i>Rootstock x salinity x pollinator effects on nutritional values in tomato fruit</i>
13:00-14:00	<b>Lunch Break</b>

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

Chairs: Nigel Wallbridge & Marta Vazquez Vilar

14:00-14:20	<b>Guillaume Ramstein</b> (Denmark) <i>Discovery of impactful variants by artificial intelligence to support next-generation breeding</i>
14:20-14:40	<b>Musa Kavas</b> (Turkey) <i>CRISPR-mediated Mutation of Cytokinin Signaling Genes <i>SIHP2</i> and <i>SIHP3</i> in Tomato</i>
14:40-15:00	<b>Nataša Čereković</b> (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	<b>Antonio Granell</b> (Spain) <i>New Genomic Techniques and the current status of the new EU legislation proposal</i>

15:20-15:30	<b>Pascual García-Pérez</b> (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	<b>Elena Carneros</b> (Spain) <i>New biotechnological strategies with small molecules to promote cell reprogramming for crop plant regeneration and breeding</i>
<b>15:40-16:40</b>	<b>Coffee Break &amp; Meet the Sponsors</b>
<b>16:40-18:00</b>	<b>WG member meetings + remarks</b>
<b>18:00-19:30</b>	<b>MC member meetings</b>
<b>20:30</b>	<b>CONFERENCE DINNER</b>

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