



## **First RECROP Annual Meeting**

**COST Action CA22157**

# **Climate-Proof Crop Reproduction: from lab to farm**

**I CIRCULAR**

**22-24 May 2024**

**Murcia, Spain**

**CONGRESS SECRETARIAT**

**Department of Plant Biology. Faculty of Biology. University of Murcia  
Campus de Espinardo 30100 Spain.**

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## **LOCAL COORDINATORS**

M<sup>a</sup> Angeles Pedreño & Begoña Miras-Moreno  
(University of Murcia)  
<https://www.inbioveg.es/>

## **LOCAL ORGANIZERS**

Lorena Almagro, Ana Belén Sabater-Jara, Sarai Belchí-Navarro, María Borja Martínez, Sara Esperanza Martínez-Lorente, Jose Manuel Martí-Guillén, Eduardo Gómez-Copoví, Jose Manuel Correa-Sabater, Cecilia Lorena Bueno Araya

## **RECROP CG ORGANISING COMMITTEE**

Sotirios Fragkostefanakis, Michal Liebermann Lazarovich, Velimir Mladenov, Christos Bazakos Helene Robert-Boisivon, Marta Mendes, Jan Fila, Antonio Granell, Alexandra Dimitrijevic, Vassilis Fotopoulos, Olha Lakhneko, Ariola Bacu

## **ONLINE REGISTRATION:**

**<https://www.recrop-cost.com/Conference>**

Deadline for registration for oral talk March 15<sup>th</sup>

Deadline for registration for poster presentation April 15<sup>th</sup>

Final registration deadline May 10<sup>th</sup>

*There are no registration fees for the scientific sessions*

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## **PROGRAM DRAFT** **(HYBRID MEETING)**

### **22 May 2024**

|               |                                                                       |
|---------------|-----------------------------------------------------------------------|
| 9:00 - 10:00  | Registration (Pleiades building, Campus de Espinardo)                 |
| 10:00 - 10:30 | Welcome and RECROP COST Introduction                                  |
| 10:30 - 11:15 | Keynote Speaker: Heribert Hirt (KAUST, Saudi Arabia)                  |
| 11:15 - 11:45 | Coffee Break                                                          |
| 11:45 - 13:30 | Session 1: Plant Reproduction under Abiotic Stresses                  |
| 13:30 - 15:30 | Lunch & Poster Session I                                              |
| 15:30 - 17:00 | Session 2: Abiotic Stress Sensing, Signalling, and Response           |
|               | Keynote Speaker Francisco Pérez-Alfocea (University of Murcia, Spain) |
| 18:00 - 20:00 | Guided Tour to the City of Murcia                                     |
| 20:30         | Opening Event with Spanish Wine at the Real Casino de Murcia          |

### **23 May 2024**

|               |                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------|
| 09:00 - 10:30 | Session 3: Systems Biology, Machine Learning, and Artificial Intelligence Approaches to Decipher Crop Resilience |
| 10:30 - 11:30 | Coffee Break & Poster Session II                                                                                 |
| 11:30 - 13:00 | Session 4: Breeding for Climate Resilience Crops                                                                 |
| 13:00 - 14:00 | Lunch Break                                                                                                      |
| 14:00 - 15:30 | Session 5: Biotechnology and Gene Editing as Tools to Enhance Crop Abiotic Stress Resilience                     |
| 15:30 - 16:30 | Coffee Break & Networking with Companies                                                                         |
| 16:30 - 18:00 | WG Member Meetings                                                                                               |
| 18:00 - 19:30 | MC Meeting                                                                                                       |
| 20:30         | Conference Dinner Restaurante El Churra                                                                          |

### **24 May 2024**

|               |                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------|
| 09:00 - 10:35 | Session 6: Chemical Priming and Modern Practices for Increased Crop Yields in Challenging Environments |
| 09:00 - 9:35  | Keynote Speaker Ron Mittler (University of Missouri, USA)                                              |
| 10:35 - 11:00 | Closing Remarks and Coffee Break                                                                       |
| 11:00 - 13:30 | ROUNDTABLE: Towards Sustainable Agriculture under Conditions of Climate Change                         |
| 13:30 - 14:30 | Coffee Break (Spanish Wine)                                                                            |
| 14:30         | Shuttle from Pleiades Building to Alicante Airport at 2:30 p.m.                                        |

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During the Congress, there will be a roundtable where companies related to the topic, as well as researchers from research centers, the Universidad Politécnica de Cartagena, and the Universidad Católica San Antonio de Murcia, will give presentations.



reproductive enhancement of CROP resilience to extreme climate

### MESA REDONDA/ROUND TABLE

Hacia una Agricultura sostenible en  
condiciones de cambio climático

## Towards sustainable agriculture under conditions of climate change

May 24, 2024  
Pleiades Building,  
Espinardo University  
Campus, University of  
Murcia



## ROUNDTABLE DRAFT

**24 May 2024**

- 11.00 - 11:20 Opening of the Roundtable by Local Political and Scientific Entities
- 11:20 - 12:20 Industry Stakeholder Presentation Session
- 12:20 - 13:00 Session leading by Scientists from *Instituto Murciano de Investigación y Desarrollo Agrario y Medioambiental*, *Universidad Politécnica de Cartagena*, and *Universidad Católica San Antonio de Murcia*
- 13:00 - 13:30 General Discussion (Chairs: M<sup>a</sup> Angeles Pedreño & Juan Jose Alarcón Cabañero)

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### Alkaloid production in *Catharanthus roseus* cell cultures elicited with cyclodextrins and methyljasmonate

\*Almagro, L., Sabater-Jara, A.B., Belchi-Navarro, S., López-Pérez, A.J., Sotomayor, M. and Pedreño, M.A.

Department of Plant Biology. University of Murcia. Murcia. Spain.

\* Corresponding author, e-mail: lorena.almagro@um.es

#### Topic: System engineering approach

*Catharanthus roseus* produces numerous alkaloids with high pharmaceutical importance such as vinblastine and vincristine which have antineoplastic activity. Because these dimeric alkaloids are produced at very low levels in plants, *Catharanthus roseus* cell cultures have been studied for many years as a potential way to produce these compounds as well as the monomers vindoline, catharanthine and ajmalicine. However, despite the extensive studies on the standardization of cell growth and the selection of high yielding cell lines, the alkaloid production from suspension cultures is relatively low. Among different strategies to increase alkaloid production, elicitation could be one efficient strategy to provoke important increases in product yield.

Morales *et al.* (1998) demonstrated that elicitation of grapevine cell cultures with cyclodextrins (CDs) induced the production of resveratrol, the stilbene unit characteristic from Vitaceae family. The effect of CDs on resveratrol production allowed the development of an innovative procedure where high levels of this metabolite were accumulated and were easily recovered directly from the culture media without cell biomass destruction (Bru & Pedreño, 2003). Moreover, the combined use of methyljasmonate (MeJA) and CDs provoked a synergistic effect increasing even more the levels of resveratrol in grapevine cell cultures.

In the present research work, we tried to extrapolate this innovative technology focusing on alkaloid production improvement by elicitation of *Catharanthus roseus* cell cultures with a combination of both MeJA and CDs.

#### References

Morales M, Bru R, García-Carmona F, Ros Barceló A, Pedreño MA. 1998. *Plant Cell, Tissue and Organ Culture* 53: 179-187.

**Topic: Choose one of the designated sessions in the program**

**Abstract text: up to 200 words**

**References: Up to three maximum**

**Upload as docx or pdf**

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## SOCIAL EVENTS



### SPANISH WINE Real Casino de Murcia

**22 May 2024**

20.30 h



### CLOSING DINNER Restaurante el Churra

**23 May 2024**

20.30 h



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## **HOW TO REACH MURCIA**

### **Alicante-International Airport “Miguel Hernández”**

Alicante Airport offers a larger choice of domestic and international flights, including many low-cost airlines. It has a total of 100 destinations operated by 32 airlines.

There is a shuttle by the ALSA bus company from Alicante airport to the bus station in the city center of Murcia non-stop (55 min). The cost of a bus ticket from the airport to the bus station is approximately € 5,5\* for a one-way and € 10\* for a round-trip fare.

(<https://www.alsa.es/aeropuertos/alicante-elche>)

### **Murcia-International Airport (RMU IATA):**

#### **Airlines and Flights:**

Volotea: Flights from Madrid and Barcelona

EasyJet: Flights from Bristol, London–Gatwick, London–Southend.

Jet2.com: Flights from Birmingham, Leeds/Bradford, London–Stansted, Manchester.

Norwegian Air Shuttle: Flights from Bergen, Oslo–Gardermoen, Stavanger, Trondheim.

Ryanair: Flights from Birmingham, Dublin, East Midlands, Leeds/Bradford, London–Luton, London–Stansted, Manchester, Bournemouth, Glasgow–Prestwick, Palma de Mallorca.

Smartwings: Flights from Prague.

TUI fly Belgium: Flights from Antwerp, Charleroi.

Transportation from the airport: A bus line connects the airport to the bus station in the city center of Murcia (<https://www.interbusmurcia.es/rutas-y-horarios/>). There is also a taxi service with a fee of €29 to the center of Murcia.

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## ACCOMMODATION

Below you can find the list of hotels we suggest to stay overnight during the conference. To benefit from the discount rates, when booking by e-mail or on the hotel website, you must indicate "1 Annual Meeting of the Action Cost CA22157 RECROP" or a specific code provided below. Prices are indicated per room and night (VAT included).



### **H1. HOTEL SERCOTEL JC1\*\*\*\***

C/ Av. Juan Carlos I, 55, 30100 – Murcia. Tef. +34 968 85 88 44

[www.sercotelhoteles.com/es/hotel-jc1](http://www.sercotelhoteles.com/es/hotel-jc1)

#### **SPECIFIC CODE: 50050**

Double room / double individual use accommodation only: €75/night

Double room for single-use accommodation and breakfast: €85/night

Double room bed and breakfast: €95/night

**Tram stop: El Puntal**

### **H2. Hotel IBIS MURCIA\*\***

Avenida Juan Carlos I S/N – 30009 Murcia Telf. +34 968 274939

[www.accorhotels.com/espana/index.es.shtml](http://www.accorhotels.com/espana/index.es.shtml)

Double room / double individual use accommodation only: 55€

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Double room / double individual use accommodation and breakfast: 60€

**Tram stop: Senda de Granada**

### **H3. HOTEL EL CHURRA\*\*\***

Av. Marqués de Los Vélez, 12, 30008 Murcia. Telf. +34 968 23 84 00

[www.elchurra.net](http://www.elchurra.net)

Double room / double individual use accommodation only: 55€

Superior room junior suite type: 75€

Buffet breakfast per person: 8€

**Tram stop: Plaza Circular**

### **H4. HOTEL AZAHAR\*\*\***

C. Arquitecto Juan José Belmonte, 4, 30007 Murcia. Telf. + 34 968201750

<https://www.elchurra.net/hotel-azahar/>

Double room / double individual use accommodation only: 50€

Buffet breakfast per person: 7€

**Tram stop: Plaza Circular**

### **H5. Hotel HESPERIA MURCIA CENTRO\*\*\***

Calle Madre de Dios, 4. 30004 – Murcia Telf. +34 968217789

<https://www.hesperia.com/es/hoteles/espana/murcia/hotel-hesperia-murcia-centro>

Double individual use and breakfast 80€/night

Double room bed and breakfast: 90€/night

**Tram stop: Plaza Circular**

### **H6. HOTEL SERCOTEL AMISTAD MURCIA\*\*\*\***

C/ Condestable, 1, 30009 - Murcia. Telf. +34 968 28 29 29

<https://www.hotelamistadmurcia.com/>

**SPECIAL CODE:** It must be indicated that it is for the event: REUNION ANUAL ACTION COST CA22157 RECROP and this LOCATOR: 50170

Double room / double individual use accommodation only: 90€/night

Double room for single-use accommodation and breakfast: 105€/night

Double room bed and breakfast: 120€/night.

**Tram stop: Plaza Circular**

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## PRACTICAL INFORMATION

### ***\*Travel and visas***

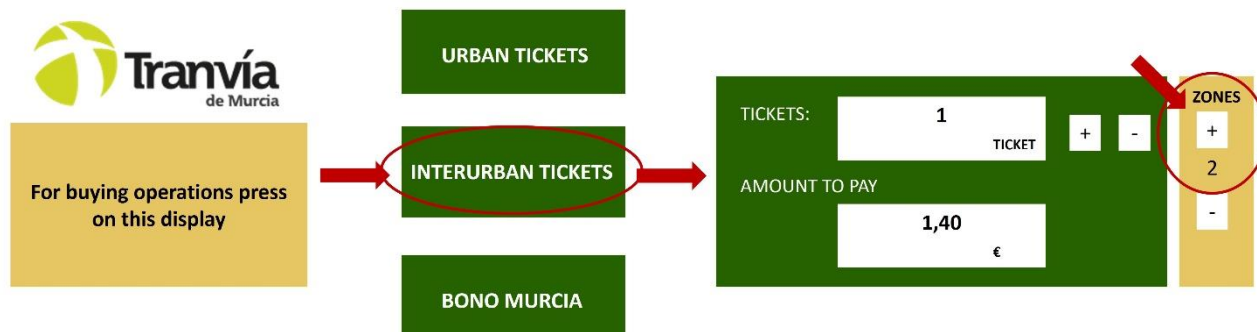
Delegates requiring a visa for entry to Spain are strongly advised to make their application in their home countries at least two months before the intended date to travel. Visa application procedures are more manageable when the acknowledgement of registration is included.

### ***\*Letter of invitation***

The Congress Secretariat will send you a Letter of Invitation upon request. This letter is only to help delegates to raise travel funds or to obtain a visa, and it is not a commitment on the part of the organizers to provide any financial support. The Congress Secretariat should receive applications for a Letter of Invitation before 1 March 2024.

### ***\*Location***

Pleiades building, where the conference will take place, is located in the Campus Universitario de Espinardo. From downtown, the Campus de Espinardo can be reached by public transport (20 min by tram) or by taxi. The Campus Universitario can be reached by tram of Murcia TDM (<http://www.tranviademurcia.es/conocetdm/plano.aspx>) L1, line 1. You can get on the tram at the stop "Plaza Circular" (in Murcia) and get off at the stop "Centro Social" (red arrow on the maps) near Universidad de Murcia and walk two hundred meters to building number 37 (Pleiades). The tram frequency is 10 min.

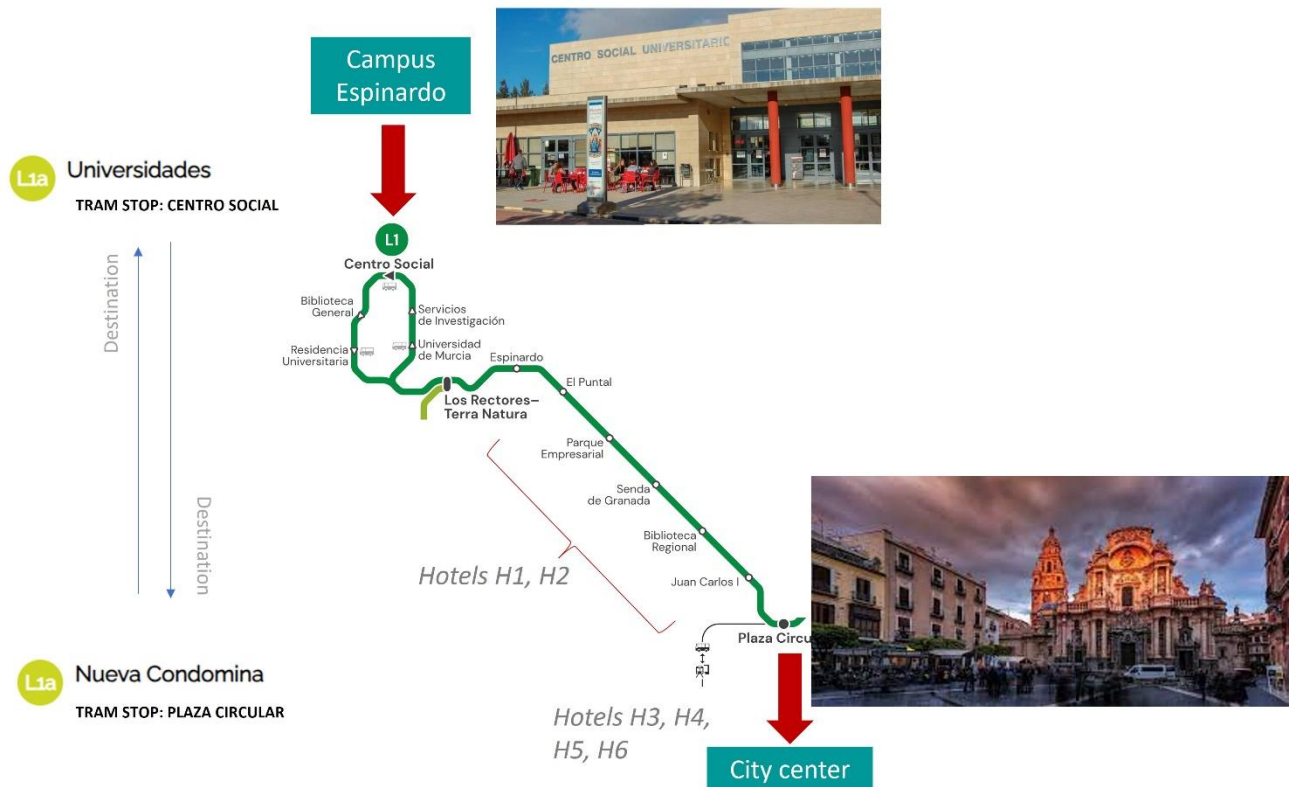


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### ABOUT MURCIA

The city of Murcia is in the southeast of the Iberian Peninsula. It is the capital of the Autonomous Community of the same name, which, with a surface area of 11,317 square kilometres, is the largest of the single-province autonomous communities in Spain and is also one of the seven most populated cities in the country.

Its metropolitan area covers 881 square kilometres. It is made up of the city centre, with a central core of 3 kilometres, the old quarter with a diameter of 1.5 kilometres and the 55 districts administratively dependent on the Murcia City Council, which encompass half of the population of the municipality. Territorial diversity is, therefore, one of the hallmarks of Murcia's identity.

Geographically, it is divided into two very distinct areas: the Huerta, which extends along the banks of the Segura River, and the Campo, with arid lands located to the N/W, N/E, and South of the municipality. The average altitude above sea level is around forty-three metres.

The good weather is another reason to plan a visit any time of the year. One of the most characteristic aspects of Murcia is its usual blue skies and the bright sunlight that permeates the city and its "Huerta" (farmland). Situated on the southern edge of the temperate zone, it enjoys a very mild Mediterranean climate, as the proximity of the sea acts as a thermal buffer. The average annual temperatures in Murcia are around 18° C. Winters are mild, with an average January temperature of 10.2° C; summers are very hot, with an average of 25.7° C, with more than 2,800 hours of sunshine per year.

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<https://www.recrop-cost.com/Conference>  
<https://www.um.es/>

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