



III Andalucía Agro-Hub PhD students meeting

Instituto de Bioquímica Vegetal y Fotosíntesis (IBVF) (CSIC-US)
Sevilla, 12-13th March 2026



Scientific program

Thursday 12th March

Registration 9:00 – 11:00 h

Welcome.

- 11:00 – 11:30** Dr. José Luis Crespo. IBVF Director.
Dra. Margarita Paneque. Institucional Delegate (CSIC Andalucía).
Dr. Ernesto Igartúa. Coordinator of Agricultural Sciences and Technologies (CSIC).
Dra. Rocío López Igual. IBVF Organizing Committee.
Belén Suárez Murillo. IBVF Organizing Committee.

Session I 11:30 – 13:30 h

Chairs: **Yosu Odriozola Gil (IBVF, Sevilla)** and **Ignacio Domenech Carretero (IAS, Córdoba)**.

- 11:30 – 11:45** **O1. Marta Gavilán Camacho. IAS.**
CRISPR/Cas strategies to replace immunogenic peptides in wheat gliadin genes while preserving baking quality.
- 11:45 – 12:00** **O2. Santiago González Rodríguez. IBVF.**
Role of Stress Granules in Arabidopsis de-etiolation.
- 12:00 – 12:15** **O3. María del Rosario Serra Jaén. IG.**
Phyllobilins in the European Diet: Quantification and Discovery of Novel Chlorophyll Catabolites in Edible Plants.
- 12:15 – 12:30** **O4. Luis España Luque. EZZ.**
Mycorrhiza, Phosphorus and Meloidogyne incognita, a communication matter?

- 12:30 – 12:45** **O5. David Romero Jiménez. IRNAS.** AtALMT10 regulates root-to-shoot nitrate transport according to environmental conditions in *Arabidopsis thaliana*.
- 12:45 – 13:00** **O6. Julia Llinares Gómez. IHSM-La Mayora.** Regulation of the chromatin topology by small RNAs during plant adaptation.
- 13:00 – 13:15** **O7. Reyes Carrillo Villa. IBVF.** The Impact of Subcellular Sources of Sulfide Metabolism on Cadmium Stress in *Arabidopsis*.
- 13:15 – 13:30** **O8. Álvaro Fernando García Rodríguez. IG.** Application and Understanding of Biochar on Plant Performance: Crop Growth, Nutrient Use and Quality of Organic Matter.

Lunch/Poster session 13:30 – 15:30 h

Session II 15:30 – 16:45 h

Chairs: **Belén Suárez Murillo (IBVF, Sevilla)** and **Pablo Morales (IHSM-La Mayora, Málaga)**.

- 15:30 – 15:45** **O9. Sara Rodríguez Mena. IAS.** Identification of genomic regions associated with resistance to *Aphanomyces* root rot in pea.
- 15:45 – 16:00** **O10. Miriam Romero Sánchez. IBVF.** Molecular insights into the activation mechanism of the high affinity K⁺ transporter HAK5 from *Arabidopsis thaliana*.
- 16:00- 16:15** **O11. María González Blanco. IHSM-La Mayora.** From expression to function: Deepening into a TALE Transcription Factor in Strawberry.
- 16:15 – 16:30** **O12. María Córdoba Sánchez. IAS.** Widespread occurrence of plant-parasitic nematodes in pea fields and consequences for crop improvement.
- 16:30 – 16:45** **O13. Andrea Román Mateo. EEZ.** Functional Characterization of Pollen Protein S-Acyltransferases from Olive (*Olea europaea*) in a Yeast Heterologous System.

Coffee break/Poster session 16:45 – 17:45 h

Session III 17:45 – 19:00 h

Chairs: **Victor Fernández Ramírez (IBVF, Sevilla)** and **Francisco J. Moreno Racero (I. Grasa, Sevilla)**.

- 17:45 - 18:00** **O14. Rafael Orozco Morán. IAS.** Optimizing water management in almond production under limited supply: coupling soil-plant water balance, LiDAR canopy assessment and infrared stress detection.

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- 18:00 - 18:15** **O15. Manuela Rodríguez Delgado. IBVF.**
New functions of photoperiod in plant reproduction.
- 18:15 - 18:30** **O16. Mario Ruiz Velázquez. IFAPA.**
Identification of quantitative trait loci and candidate genes affecting agronomic and water use efficiency traits in strawberry.
- 18:30 - 18:45** **O17. José Antonio Muñoz Sánchez. IAS.**
Effect and economic viability of vegetative barriers for reducing sediment delivery to the Jarata Lagoon: A SWAT+ Modelling.
- 18:45 - 19:00** **O18. Enrique Clavijo Bernal. IG.**
Engineering fatty acid desaturation and elongation to design industrial *Camelina sativa* oils.
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Friday 13th March

Session IV 9:00 – 11:00 h

Chairs: **Emma Serrano Pérez (IBVF, Sevilla)**, **María Muñoz Santisteban (IRNAS, Sevilla)** and **Sara Rodríguez Mena (IAS, Córdoba)**.

- 09:00 - 09:15** **O19. Ignacio Domenech. IAS.**
Landscape-scale soil erosion risk assessment in olive groves using RUSLE and machine learning approaches based on remote sensing.
- 09:15 - 09:30** **O20. M. del Carmen Pérez Nieto. IBVF.**
Generation and characterization of Plastocyanin/ Cytochrome c6 conditional mutants in the cyanobacterium *Synechocystis* sp. PCC 6803.
- 09:30 - 09:45** **O21. José Antonio Mediano Guisado. IRNAS.**
Dynamics of Mycorrhizal Symbiosis and Stable Isotope Signatures $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ under Different Soil Management and Water Regimes in a Mediterranean Crop Rotation.
- 09:45 - 10:00** **O22. Marta A. Rey. IHSM-La Mayora.**
Insights into the molecular characterization of Ty-2 resistance gene.
- 10:00 - 10:15** **O23. Gerardo Valle Salas. IG.**
Bioactive potential of phenolic compounds recovered from co-products after pigments extraction from pumpkin waste for sustainable valorization.
- 10:15 - 10:30** **O24. Salvador Priego Poyato. EEZ.**
Redox imbalance–driven protein carbonylation impairs viability and germination in olive (*Olea europaea* L.) pollen.
- 10:30 - 10:45** **O25. Christina Arvanitidou. IBVF.**
Transcriptional Mechanisms underpinning Seasonal Temperature and Photoperiod Acclimation in the Marine Phytoplankton *Ostreococcus tauri*.
- 10:45 - 11:00** **O26. Jorge Morello. IHSM-La Mayora.**
A SYT1-ECA1/4 Complex at ER-PM Contact Sites Governs Calcium Homeostasis and Pollen Development in Arabidopsis.

Session V 12:00 – 13:30 h

Chairs: Mercedes Jiménez Herrera (IBVF, Sevilla) and Alegría Pérez Guillen (EEZ, Granada).

- 12:00 – 12:15** **O27. Laura Gismero Rodríguez. IG.**
From the soil up: a one-year study of an olive grove microbiome under different management practices.
- 12:15 – 12:30** **O28. Ana García Velázquez. IAS.**
Restoring soil functionality: Nematode suppressiveness through regenerative practices.
- 12:30 – 12:45** **O29. Lucía Jiménez Ríos. IBVF.**
Biofertilization by Nitrogen-Fixing Cyanobacteria for Sustainable Crop Cultivation.
- 12:45 – 13:00** **O30. Francisco Mendes. IAS.**
Dissecting aphid resistance in grass pea through genome-wide association mapping and aphid bioassays.
- 13:00 – 13:15** **O31. José María García de Castro Barragán. IG.**
Long-term impacts of bush thinning on soil organic matter dynamics and carbon sequestration in Namibian savannahs.
- 13:15 – 13:30** **O32. María Muñoz Santiesteban. IRNAS.**
From Crop Coefficients to Smart Irrigation in Hedgerow Olive Orchards.

Closure-Next IV Agro-Hub

- 13:30 – 14:00** Dr. José Luis Crespo. IBVF Director.
Dra. Rocío López Igual. IBVF Organizing Committee.
Belén Suárez Murillo. IBVF Organizing Committee.
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Poster program

- P.01 Alejandro Alegría Pérez (IG).** Unlocking the Bioactive Potential of Olive Pomace: A Green Chemistry Approach to Zero-Waste Production.
- P.02 Patricia Álvarez Granados (IHSM-La Mayora).** Phloem physiology of Magnolia leaves of different ploidy levels.
- P.03 M. Julia Barrau Párraga (IRNAS).** Limited microbial growth and epigenetic heterogeneity: keys to understand agricultural soil dynamics.
- P.04 Leticia Benavides Expósito (EEZ).** Industrial Thermal Processing Modulates Protein Damage and Gastric Digestion Kinetics in Liquid and Powdered Infant Formulas.
- P.05 Luna Benito del Valle Gómez (IHSM-La Mayora).** Cell wall modifications of strawberry roots in response to water deficit.
- P.06 Marta Berlanga Del Pozo (IG).** Analytical Optimization and Thermal Inactivation Kinetics of Polyphenol Oxidase in Gordal and Hojiblanca Olives.
- P.07 Carlos Cardeñas (IHSM-La Mayora).** SYT6 associates with components of the plant autophagy machinery.
- P.08 Cristina Carvia Hermoso (EEZ).** Contribution of RelA to the early and late stages of the *Sinorhizobium meliloti*-*Medicago sativa* symbiosis.
- P.09 Sara Comerón Tabernero (EEZ).** From roots to populations: microbe-induced resistance alters herbivore life history
- P.10 Miguel Ángel Córdoba Rojano (IG).** Sustainability of the Nerpio walnut: development of a differentiated quality product and valorization of its co-products.
- P.11 Jerónimo Coto-Elena (IHSM-La Mayora).** Cell Wall Traits Associated with Differential Tolerance to *Xylella fastidiosa* in Olive Cultivars.
- P.12 Oliver Cuevas (IHSM-La Mayora).** Characterizing the NTMC2T5 proteins at ER-plastid contact sites.
- P.13 David Delgado Romero (IBVF).** Characterization of HSFA4a as a Structurally Dynamic Regulator with Stress Granules as Central Players.
- P.14 María Teresa Domínguez Lobo (IBVF).** Enhanced sucrose production by controlling carbon flux through CfrA expression in *Synechocystis* sp. PCC 6803.
- P.15 Germán Escudero (IAS).** Root system architecture phenotyping in a *Pisum* spp. collection.
- P.16 José Manuel Espinosa Vázquez (IG).** Tenebrio post-processing of anaerobic effluent.
- P.17 Jesús Expósito Torres (IG).** Molecular Adaptations of Olive Fruits to Drought: Gene Regulation and Tocopherol Content.
- P.18 Salvador Antonio Fernández González (IRNAS).** Nutritional Interaction Between Chloride and Nitrate in Plants: Implications of the NPF6.3 Transporter.
- P.19 Víctor J. Fernández Ramírez (IBVF).** Interplay between Na⁺/K⁺ transporters, hormonal signaling, and structural dynamics in response to nutrient stress.
- P.20 Fabián Ulises Galván Moreno (IHSM-La Mayora).** Regulation of lignin deposition by SYT1-ER-PM contact sites.
- P.21 Lucía González Pagán (EEZ).** Dynamics of the clover endophytic microbiome during phenanthrene rhizoremediation: implications of the LuxR874 regulator of *Novosphingobium resinovorum* HR1a.
- P.22 Elisa Guillén (IG).** Production of high-value food ingredients through hydroponic cultivation of asparagus.
- P.23 Alba María Gutiérrez Diánez (IBVF).** Improving microalgae productivity by generating strains with increased resistance to temperature and light stress conditions.

- P.24 Manuel Hernández Escaño (IG).** Integral utilization and valorization of *Posidonia oceanica* ashore biomass by obtaining bioactive compounds, biomethane by anaerobic digestion and fertilizers.
- P.25 Ana M. Hita Pérez (EEZ).** High-efficiency isolation of DNA from olive oils for molecular identification.
- P.26 Candela Houriet (IHSM-La Mayora).** Beyond the Stepwise Model: Unravelling the Coupling of miRNAs Transcription and Processing.
- P.27 Miguel Itarte (IAS).** Recent Dynamics of the Agricultural Landscape in Córdoba: Evolution of Plant Structures and Non-Productive Areas (2005–2025).
- P.28 María de las Mercedes Jiménez Herrera (IBVF).** Uncovering the role of 2-Cys peroxiredoxins in chloroplast biogenesis and performance.
- P.29 María Claudia López Orozco (IAS).** Identification of sources of resistance and of genomic regions associated with resistance to the pea aphid in *Pisum* spp.
- P.30 Javier Magro-Aguado (IBVF).** Engineering LLPS-Based Synthetic Organelles for Enzyme Recruitment and Enhanced In Vitro Biocatalysis.
- P.31 Juan Ramón Maroto García (IG).** Study of the limiting factors of saturated fatty acid accumulation in sunflower seeds.
- P.32 Cinta Martín Medrano (IG).** Dark co-fermentation of swine slurry and olive mill waste: Hydrogen production and quality of the digestate.
- P.33 Carlos Martínez Zamora (IHSM-La Mayora).** StatCode: A new tool for statistical analysis.
- P.34 Alejandro Matamoros Domínguez (IG).** Oleanolic Acid-Enriched Olive Oil Modulates Advanced Glycation End Products Metabolism and Preserves Kidney Function in Patients with Type 2 Diabetes.
- P.35 José Angel Mercado Hornos (IHSM-La Mayora).** Drought stress memory in strawberry plants.
- P.36 Pablo Mesa (IG).** From *Vitellaria paradoxa* to *Camelina sativa*: DGAT-mediated strategies for the accumulation of healthier vegetable fats
- P.37 Khat Mohammed MEA (IAS).** Stable Resistance to *Orobanche crenata* and *Ascochyta fabae* in *Vicia narbonensis*: A Multi-Environment Spatial Analysis.
- P.38 Cristian Camilo Molinares Pacheco (IAS).** Secretome profiling of *Fusarium oxysporum* f. sp. *pisii* race 1 identify JA-Ile derivatives as potential virulence modulators.
- P.39 Maite Moreno Gómez (IHSM-La Mayora).** Switching the Growth of Plant Buds by an RNA Code of Untranslatable Chemical Marks (SPROUT).
- P.40 Francisco Jesús Moreno Racero (IG).** Soil respiration dynamics in hydrochar-amended soils within a Mediterranean cropping system.
- P.41 Raquel Muñoz de Frutos (IFAPA).** Evaluating FaARF6 as a candidate gene controlling fruit weight in strawberry.
- P.42 Juan Manuel Ocaña Gálvez (IHSM-La Mayora).** A Modular Golden Gate Assembly Framework for Genetic Engineering of *Pseudomonas syringae*.
- P.43 Yosú Odriozola-Gil (IBVF).** Role of TOR signaling and autophagy during stress response in the extremophilic microalgae *Chlamydomonas urium*.
- P.44 Alba Paganelli (IBVF).** Structural characterization of signaling molecules in the *Nostoc punctiforme*-*Oryza sativa* symbiosis.
- P.45 Paula Peña Enríquez (IAS).** Assessment of the water requirements of hedgerow almond trees: determination of the crop coefficient
- P.46 Sara María Pérez Dalí (IRNAS).** Evaluating pyroligneous acid as a tool for circular agriculture and Carbon sequestration
- P.47 Alegría Pérez Guillén (EEZ).** Trichoderma elicitors: powerful tools to unravel MIR functioning and its impact in insect herbivores
- P.48 Beatriz Pérez López (IG).** Effect of high-pressure homogenization technology on chlorophyll pigments in fluid food matrices based on green vegetables.
- P.49 Victoria María Quintero Muñoz (EEZ).** CRISPR-generated KEA mutants reveal the role of potassium homeostasis in tomato leaf growth and water relations.

- P.50 Víctor Manuel Ramos (IG).** Copper distribution in olive leaves by an improved BCR sequential extraction.
- P.51 Marcos Ramos González (IBVF).** Transcriptomic and physiological responses to seasonal and diel cycles in the liverwort *Marchantia polymorpha*.
- P.52 Diego Rodríguez Rodríguez (IHSM-La Mayora).** Sustainable BPA-free bioactive lacquers derived from tomato pomace and subtropical fruit residues for metal food packaging.
- P.53 Nazaret Romero Armario (IAS).** Identification of sources of resistance to *Aphanomyces* Root Rot in lentils germplasm.
- P.54 Rafael Rubio (IBVF).** Stress granule proteins are regulated by phosphorylation in response to heat stress in *Arabidopsis thaliana*.
- P.55 Abdelkader Sadok (IAS).** Multi-year phenotypic evaluation of faba bean (*Vicia faba* L.) for resistance to biotic stresses.
- P.56 Rosana Salazar-García (IAS).** Pin nematodes (*Paratylenchus* spp.) parasitizing olive groves in the Mediterranean Basin.
- P.57 Águeda María Sánchez Martín (IRNAS).** Sustainable production of activated carbons from agricultural waste for elimination of dye contaminants in water.
- P.58 Dyessica Santos (IG).** Vertical patterns of SOM stabilization under contrasting land uses in the southwestern Brazilian Amazon.
- P.59 Beatriz Santos Casanova (IFAPA).** Deepening insights into avocado tolerance mechanisms to *Neofusicoccum luteum*, causal agent of dieback disease
- P.60 Carmen Sánchez del Solar (IBVF).** Identification and Characterization of *Nostoc punctiforme* Orthologs of the *Rhizobium leguminosarum* nodD Regulator.
- P.61 Alicia Segura Mejías (IBVF).** New tools for advancing genetic engineering of photosynthetic bacteria.
- P.62 María Serrano Morales (EEZ).** Extracytoplasmic function sigma factors (ECF) in the regulation of the type III secretion system (T3SS) in *Pseudomonas*.
- P.63 Emma Serrano Pérez (IBVF).** Molecular Basis of Essential Fatty Acid Production in *Raphidocelis subcapitata* Under Nitrate-Limited Conditions
- P.64 Francisco Javier Solano-Moreno (IHSM-La Mayora).** Valorization of tomato pomace for the fabrication of cellulose-reinforced coatings as an alternative to bisphenol A lacquers for metal food packaging.
- P.65 Belén Suárez Murillo (IBVF).** Analysis of antisense RNA-mediated regulation in *Nostoc* sp. PCC 7120.

Local organizing committee (IBVF, Sevilla):

M. Esther Pérez Pérez.

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This activity has been supported by the MaX CSIC Excellence Award [DEEP-MAX-2024_IBVF_2].



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Acknowledgements:



Logo designed by Manuela Rodríguez Delgado (IBVF, Sevilla).

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