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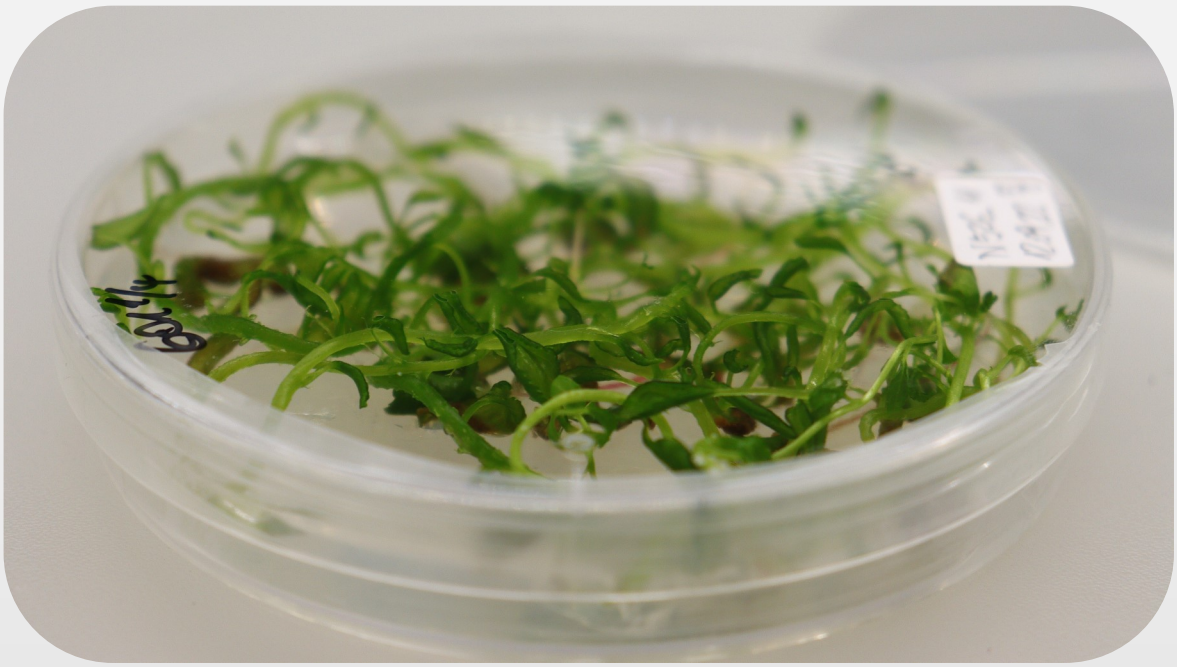
# COPYTREE NEWSLETTER

No. 12, October, 2026

CA 21157 www.copytree.eu

## "European Network for Innovative Woody Plant Cloning"

Collaboration on a European level between experts for sharing and applying innovative in vitro technology on woody plants



**Enjoy your reading!**

# 1. ACTIVITIES

4th CONFERENCE OF COPYTREE

## 1.1. From Lab to Forest and Orchard: Final Conference of CopyTree

**14 - 16 September, 2026**

**Academy of Sciences of Albania**

**Local Organizer: Valbona SOTA**

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As the fourth and final conference of COPYTREE, the event marked an important milestone in the network's efforts to advance innovative woody plant cloning technologies across Europe.

The scientific programme featured five keynote lectures representing the Action's Working Groups, oral and poster presentations, dedicated sessions on Short-Term Scientific Missions (STSMs), and Working Group and Management Committee meetings.

Scientific discussions addressed key challenges and advances in overcoming recalcitrance, plant health and germplasm conservation, propagation technologies, automation, and technology transfer.













Beyond the scientific sessions, the conference provided valuable opportunities for networking, strengthening international collaborations, and exchanging knowledge among researchers and stakeholders.

Following the conference, the participants had the opportunity to explore Albania's cultural and natural heritage during a two-day tour to Southern Albania.







# TRAINING SCHOOL

## 1.2. Smart Compound Discovery to Overcome Recalcitrance

**19—21 October, 2026**

**Ghent University, BELGIUM**

**Local Organizers:**

**Stefaan Werbrouck**

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From 19 to 21 October 2026, COST Action CA21157 COPYTREE scheduled a three-day Training School entitled “Smart Compound Discovery to Overcome Recalcitrance”, hosted by Ghent University.

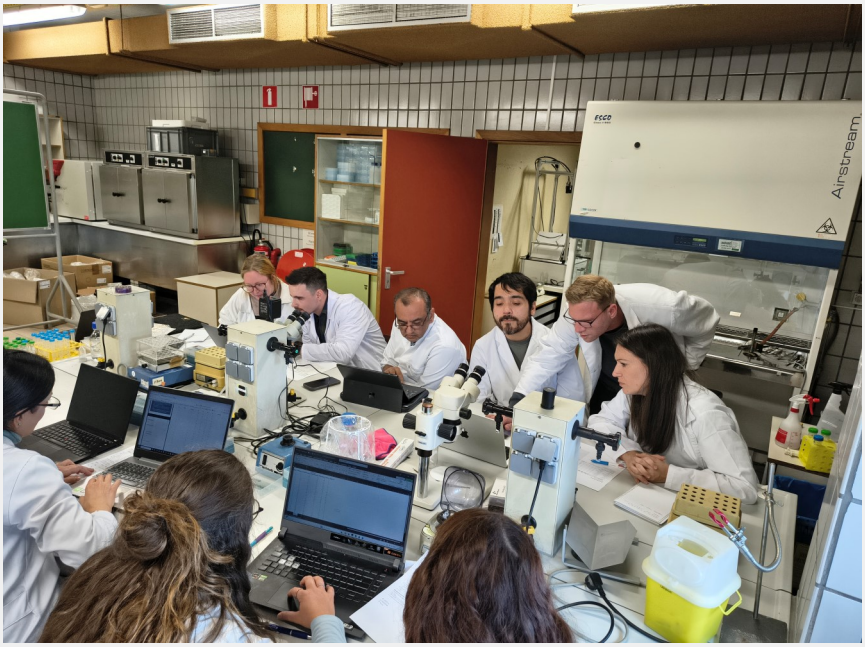
The training programme focused on innovative approaches to overcoming recalcitrance in woody plant tissue culture by integrating novel compounds, plant bioassays, high-throughput screening, quantitative phenotyping, and AI-driven experimental optimization.

The initiative also provided an opportunity to foster scientific exchange and collaboration among researchers, encouraging the transfer of innovative methodologies into woody plant biotechnology research across COPYTREE.



Coordinated by Prof. Stefaan Werbrouck, with contributions from Prof. Frank Van Breusegem, Dr. Hans Bethge, and experts from the VIB Screening Core, the programme combined lectures, practical exercises, and a visit to advanced screening facilities.

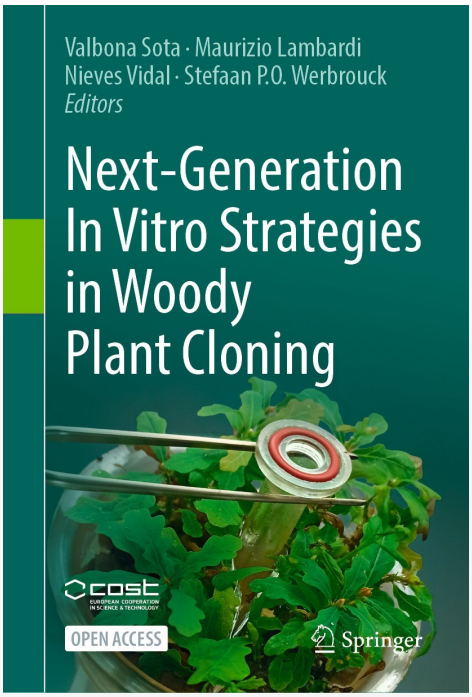
Particular emphasis was placed on compound screening, mode-of-action studies, image-based phenotyping, and data-driven optimization using ADAM. Designed for a small group of eight participants, the Training School aimed to strengthen researchers’ practical skills and promote the application of advanced technologies to improve in vitro propagation of woody species.






## 1.3. New Springer Open Access Book

READ MORE




Published in August 2026 by Springer Nature, the new open-access book Next-Generation In Vitro Strategies in Woody Plant Cloning represents a major scientific output of COST Action CA21157 COPYTREE. Edited by Valbona Sota, Maurizio Lambardi, Nieves Vidal, and Stefaan P. O. Werbrouck, the volume brings together contributions from international experts in woody plant biotechnology.

Across 20 chapters, the book addresses recalcitrance, advanced diagnostics and sanitation, cryopreservation, somatic embryogenesis, temporary immersion systems, automation and artificial intelligence, as well as public acceptance, legislation, commercialization, and education. It provides a comprehensive reference for researchers, students, and professionals, highlighting the achievements of the CopyTree network and supporting the future development of innovative and sustainable woody plant propagation technologies.

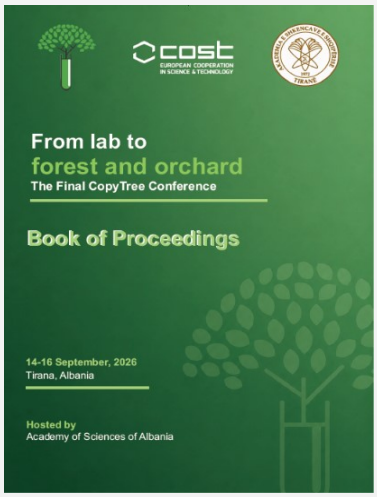
## 1.4. Book of Proceedings – Final COPYTREE Conference

We are pleased to announce the publication of the Book of Proceedings from the Final CopyTree Conference, *"From Lab to Forest and Orchard,"* held in Tirana, Albania, on 14–16 September 2026.

The volume brings together scientific contributions highlighting recent advances, innovative approaches, and practical applications in woody plant biotechnology.

This publication represents an important contribution to the scientific legacy of COST Action CA21157 COPYTREE, supporting knowledge dissemination and future international collaboration.

READ MORE




## 1.5. Publications that acknowledged CopyTree

García-Madrigal, M., Vasquez-Quesada, D., Benavides-Villegas, D., Castander-Olarieta, A., Montalbán, I. A., Pérez, J., & Moncaleán, P. (2026). Morphological and biochemical responses of *Pinus radiata* embryogenic cultures to elicitors, salinity and heat stress. Forests, 17(8), 898. https://doi.org/10.3390/f17080898

Korica, A., Purmale-Trasune, L., Nisler, J., Krumins, R., Joffe, R., & Sparinska, A. (in press). Use of cytokinin oxidase/dehydrogenase (CKX) inhibitors in *Prunus cerasus* rootstock (VC13) micropropagation comparing TIS and agarized medium. Acta Horticulturae.

Vielba, J. M., Castro-Camba, R., Vidal, N., Rico, S., & Sánchez, C. (2026). Weighted gene co-expression network analysis in chestnut allows for the identification of putative candidate genes linked to adventitious rooting. Agriculture, 16(16), 1698. https://doi.org/10.3390/agriculture16161698

## 1.6. Collaborative projects involving CopyTree members

**SMARTER FRUIT** is a project funded from the European Union's HORIZON-EIC-2025-PATHFINDERCHALLENGES-01 programme,

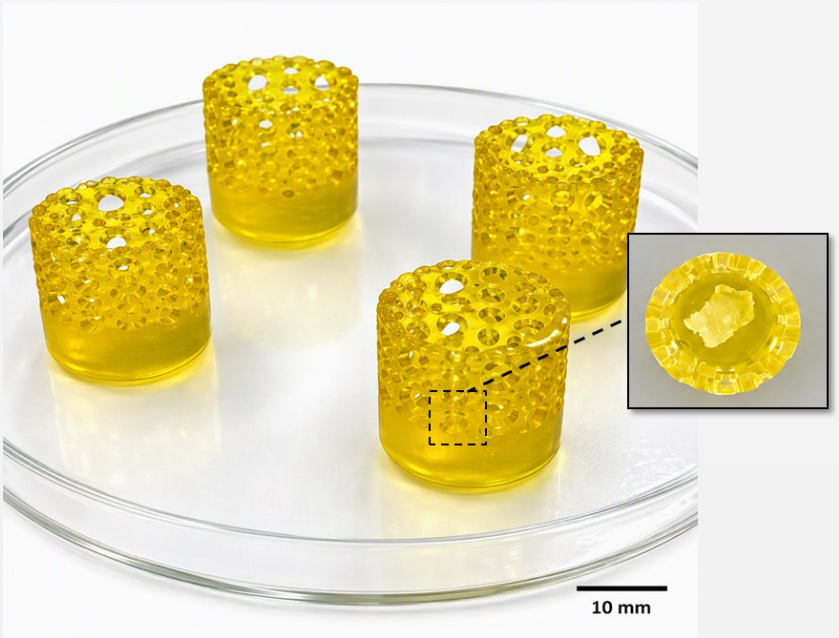
involving 4 partners from 3 different countries: Italy (Fondazione Edmund Mach - FEM, Dr. Mickael Malnoy, CREA, Dr. Concetta Licciardello), France (INRAe, Dr. Emilie Vergne) and Belgium (ILVO, Tom Eeckhaut), and coordinated by FEM.

The project pushes the boundaries of current plant breeding, laying the scientific foundation for the Future Technology of the 'Programmable Orchard' and on-demand genetic resilience for fruit crops. It aims to go beyond incremental improvements by developing and optimizing a suite of advanced NGT-based tools tailored to fruit tree crops.

SMARTER-FRUIT integrates complementary methodologies to accelerate breeding and enhance resilience to combined climate stresses in fruit trees, while broadening genetic diversity to meet the regulatory requirements for NGTs.

## 1.7. Beyond Traditional Solidifying Agents: GelMA Hydrogels for Radiata Pine Somatic Embryogenesis

**Could the material supporting plant tissue development be just as important as the culture medium itself?**




An interesting question that invites us to look beyond conventional approaches and explore new possibilities in plant tissue culture!

Innovative ideas often emerge when familiar challenges are viewed from a different perspective, opening the door to creative solutions and exciting developments.

Researchers at Scion, New Zealand, are exploring gelatin methacryloyl (GelMA) hydrogels as an innovative alternative to conventional solidifying agents for *Pinus radiata* somatic embryogenesis.

Combining biomaterials science with forest biotechnology, the study investigates how the physical culture environment can be optimized to support embryogenic tissue development. GelMA hydrogels offer a highly hydrated, three-dimensional matrix that provides an adaptable platform for plant tissue culture.

Preliminary findings demonstrate that *P. radiata* embryogenic tissues can be successfully cultured on GelMA hydrogels while retaining their embryogenic capacity. These promising results highlight the potential of engineered hydrogels to improve *in vitro* propagation systems and develop culture environments tailored to specific developmental stages.

This innovative approach opens new perspectives for forest tree biotechnology, emphasizing the importance of optimizing both the chemical and physical conditions of plant tissue culture.

For further information or potential collaboration, please contact:

Jana Krajnakova – Jana.Krajnakova@bioeconomy.nz

Roya Rezanavaz – Roya.Rezanavaz@bioeconomy.nz

# 1.8. Strengthening Scientific Collaboration and Knowledge Exchange in Woody Plant Biotechnology




From **8 to 11 June 2026**, an Erasmus+ Staff Training visit took place at the **Biological Mission of Galicia (MBG-CSIC), Spain**, under the supervision of Dr. Nieves Pilar Vidal González, a member of the COPYTREE network.

The visit focused on strengthening technical and methodological expertise in photoautotrophic micropropagation and bioreactor-based plant propagation systems, while promoting scientific exchange and future collaboration.

Additionally, on **15 June 2026**, the webinar *"Rethinking Woody Plant In Vitro Culture: Photoautotrophic Micropropagation and Emerging Biotechnologies"* was organised in collaboration with the journal *Horticulturae* (MDPI).

The webinar featured two COPYTREE members, **Dr. Nieves Pilar Vidal González and Tobias Brügmann**, who shared their expertise and recent developments in innovative woody plant tissue culture technologies. The event provided an opportunity to disseminate scientific knowledge and strengthen connections within the international research community.




## WEBINAR SERIES

On **22 October 2026**, COPYTREE held its **final webinar**, marking the conclusion of a successful webinar series dedicated to advances in woody plant biotechnology.

The event featured two presentations. **Prof. Carmen Büttner** (Humboldt University of Berlin, Germany) delivered a lecture entitled *"Underestimated Pathogens – Viruses of Forest and Urban Trees,"* highlighting the importance of viral diseases affecting woody species.

The second presentation, *"From COST Action to Impact: Celebrating Our COPYTREE Journey and the Community We Built,"* was delivered by **Prof. Stefaan Werbrouck**, COPYTREE Action Chair.

It reflected on the network's scientific achievements, training opportunities, international collaborations, and capacity-building activities, while highlighting the people behind COPYTREE and the prospects for continued cooperation beyond the Action.




This final webinar provided an opportunity to celebrate the **achievements and lasting legacy of COPYTREE**, bringing the webinar series to a meaningful conclusion.

# 2. Short Term Scientific Missions

## Granted during the 4th year of CopyTree

### INFORMATION ABOUT STSM

**Name:** Brunilda Çuko

**Home Institution & Country:** University of Tirana, Albania

**Title of STSM:** Practical training and technology transfer for the in vitro micropropagation of GF-677 rootstock using ElecTIS (Temporary Immersion System) bioreactor: standardization and implementation plan for Albania.

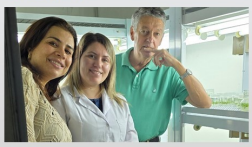
**Host Institution & Country:** Institute for BioEconomy (CNR-IBE), Italy

**Period of the visit:** 08.06.2026 - 19.06.2026

**Short description of STSM:**

The STSM provided intensive hands-on training covering all key aspects of the ElecTIS system, including bioreactor assembly, sterilization, operation, maintenance, culture media preparation, and optimization of TIS culture parameters. Comparative experiments between the TIS and the conventional semi-solid culture system were established. Beyond the technical training, the mission resulted in the successful transfer of Standard Operating Procedures (SOPs), the development of a detailed experimental workflow, and the documentation required to reproduce the methodology at the University of Tirana.





### INFORMATION ABOUT STSM

**Name:** Matteo Nava

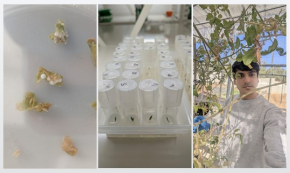
**Home Institution & Country:** Italian National Agency for new technologies, energy and sustainable economic development

**Title of STSM:** In-Vitro Micropropagation and Callogenesis Optimization in the Woody Species *Ditaxis heterantha* ('Azafran de Bolita')

**Host Institution & Country:** Universidad de Castilla-La Mancha

Instituto Botánico, Av. De la Mancha s/n Albacete 02006, Spain

**Period of the visit:** 01.01.2026 - 01.07.2026



**Short description** of the course and results of STSM:

The STSM aims to establish in vitro micropropagation and callus induction protocols for the endemic species *Ditaxis heterantha*, overcoming its propagation limitations. Leaf- and embryo-derived calli will be elicited to enhance the production of the apocarotenoids ditaxin and heteranthin, quantified by HPLC. This approach integrates germplasm conservation with the biotechnological production of bioactive pigments.



### INFORMATION ABOUT STSM

**Name:** Emine Kirbay

**Home Institution & Country:** Afyonkarahisar Health Sciences University, Türkiye

**Title of STSM:** Exploring root formation in roses

**Host Institution & Country:** Ghent University, Belgium

**Period of the visit:** 15.06.2026 - 15.07.2026



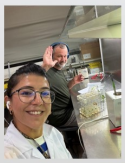
Laboratory work during the STSM

**My research experience**

During my STSM at Ghent University, I explored how diphenylurea derivatives and auxin-related compounds influence root formation in rose stem segments. I established in vitro rose cultures, carried out rooting experiments with roses and poplars, and gained practical experience in isolating and culturing rose protoplasts.

**What I gained**

The visit gave me more hands-on experience and a deeper understanding of plant tissue culture and rooting experiments. It strengthened my confidence in laboratory work and laid a foundation for future research collaboration within CopyTree.



With Prof. Werbrouck at the laminar flow cabinet

### INFORMATION ABOUT STSM

**Name:** Madara Lazdane

**Home Institution & Country:** University of Latvia, Latvia

**Title of STSM:** Application of bioreactors to multiplication and rooting of lingonberry

**Host Institution & Country:** CSIC's Misión Biológica de Galicia, Spain

**Period of the visit:** 30.08.2026 - 6.09.2026



During the STSM, I gained practical experience preparing and operating RITA and Plantform bioreactors for lingonberry multiplication and rooting. Multiplication experiments were established to compare zeatin concentrations, immersion frequencies, plant material types, and explant densities. I also initiated somatic embryogenesis experiments with oak, lingonberry, and hazel, and practiced proliferating oak somatic embryos in RITA bioreactors. The STSM strengthened collaboration and provided a basis for developing scalable propagation protocols; the cultures' development and experimental results will be evaluated in follow-up work.



### INFORMATION ABOUT STSM

**Name:** Muhammad Mudasir

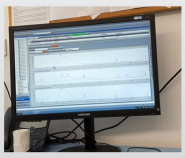
**Home Institution & Country:** Czech University of Life Sciences Prague, Czech Republic

**Title of STSM:** UV-C-Induced Elicitation of Secondary Metabolites in In-Vitro *Melaleuca alternifolia*

**Host Institution & Country:** *Pavol Jozef Šafárik University, Slovakia*

**Period of the visit:** 01.09.2026 – 30.09.2026





**Short description of the course and results of STSM:**

The STSM investigated UV-C-induced biochemical and molecular responses in in-vitro-grown *M. alternifolia*. The work combined laboratory sample processing and chromatographic data handling with the proposed analysis of phenolic compounds, essential-oil constituents and biosynthetic genes.

### INFORMATION ABOUT STSM

**Name:** Pablo Manuel Piñeiro Insua**Home Institution & Country: Misión Biológica de Galicia (CSIC), Spain**

**Title of STSM:** Development of Protocols for Protoplast Isolation in Argania spinosa

**Host Institution & Country:** Università di Torino, Italy

**Period of the visit:** 13.07.2026 – 26.07.2026



**Short description of the course and results of STSM:**

Protocols for protoplast isolation and culture in Argania spinosa were optimized. Somatic embryo-derived calli proved to be the most suitable source material, and cultured protoplasts showed initial cells divisions. These results provide a foundation for future optimization.



### INFORMATION ABOUT STSM

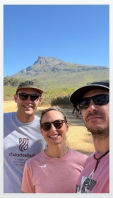
**Name:** Luca Nerva

**Home Institution & Country:** CREA, Research Centre for Viticulture and Enology, Italy

**Title of STSM:** Priority-effect driven microbiome assembly in pseudo-gnotobiotic grapevines to enhance clean stock propagation

**Host Institution & Country:** Stellenbosch University, South Africa

**Period of the visit:** 06/03/2026 to 20/03/2026



**Short results description:**

Early inoculation caused bacterial overgrowth and impaired plantlet development, whereas inoculation at root primordia formation improved shoot growth and root development with 12 of the 16 strains tested. These results identify a favourable window for introducing beneficial bacteria during in vitro propagation, with greenhouse acclimatization trials underway to assess the persistence of these benefits.



### INFORMATION ABOUT STSM

**Name:** Tekle Zakalashvili

**Home Institution & Country:** Scientific-research center of Agriculture, Georgia

**Title of STSM:** Maintenance and Long-Term Conservation of Grapevine Genetic Resources in Croatia as a Model for Strengthening the National Grapevine Certification and Cryopreservation System in Georgia

**Host Institution & Country:** University of Zagreb Faculty of Agriculture; Division for Horticulture and Landscape Architecture

**Period of the visit:** 30.08.2026 - 08.09.2026





**Short description:** My STSM at the University of Zagreb focused on grapevine genetic resource conservation, *in vitro* propagation, and cryopreservation. Through practical training and knowledge exchange, I gained valuable experience that will support the development of conservation facilities in Georgia. I also had the opportunity to share what I learned with my colleagues through workshops after returning home. One of the most meaningful parts of the visit was realising how many challenges Croatia and Georgia share in preserving local grapevine varieties and producing healthy planting material, and how much we can learn from each other by working together.



### INFORMATION ABOUT STSM

**Name:** Wejden Dalhoumi

**Home Institution & Country:** Ghent University, Belgium

**Title of STSM:** Protoplast isolation for biotechnological applications in date palm (*Phoenix dactylifera L*).

**Host Institution & Country:** Siirt University, Turkey

**Period of the visit:** 01.04.2026 - 31.05.2026

During my STSM at Siirt University,Turkey (April–May 2026), I worked on optimizing protoplast isolation from date palm (*Phoenix dactylifera L.*) for biotechnological applications. The optimized protocol achieved a maximum yield of 703,125 protoplasts/mL, with approximately 80% viability, using FDA staining. I also investigated the effects of Fusarium-associated mycotoxins on protoplast viability, generating preliminary data on date palm sensitivity to these toxins. This experience strengthened my expertise in plant biotechnology and contributed to the development of methods for future research on date palm resistance to *Fusarium* diseases.





# 3. COMMUNICATION PLATFORMS

## WEBSITE & SOCIAL MEDIA PAGES

- **COST Website**: https://www.cost.eu/actions/CA21157/
- **CopyTree Website:** www.copytree.eu

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**CONTRIBUTORS:**

**Content providers:**

COPYTREE MEMBERS

**Graphic & Design**:

VALBONA SOTA

*Science Communication Coordinator*

*valbona.sota@fshn.edu.al*

**GENERAL CONTACT:**

**copytree21157@gmail.com**



**Acknowledgements:**

This newsletter is based upon work from COPYTREE—CA21157, supported by COST (European Cooperation in Science and Technology).

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