Training School - Cost Action CA21157

COPYTREE

Cryopreservation technologies for trees

(31 March – 02 April, 2025)

Address:

Laboratory of Tropical Crop Improvement
Department of Biosystems
Building Biosystems II
Willem de Croylaan 42
3001 Leuven (Heverlee)
Belgium

https://www.biw.kuleuven.be/biosyst/cropbiotechnics/tropical
https://www.biw.kuleuven.be/biosyst/cropbiotechnics/tropical/contact

Enrolment Closing	**Duration**
05 March 2025	3 Days

What is Cryopreservation and for what is it used?

Cryopreservation is the safe storage of biological materials at ultralow temperatures and is considered as safest long term conservation methodology for vegetatively propagated, sterile or recalcitrant seed producing crops and trees. Well known examples of cryopreserved collections are apple, bananas, potato, mulberry and garlic that have each more than 1000 accessions stored in liquid nitrogen.

Cryopreservation can, however, also be applied as a tool in classical as well as modern breeding initiatives; For example, for many adult trees (such as conifers) clonal propagation is only possible through somatic embryogenesis (starting from seeds). After breeding, it takes, however, decades before the value of a selection/cross of a tree can be determined. The storage of embryogenic cultures could meanwhile happen through cryopreservation.

For many plant species cryopreservation is also used for pathogen eradication. This effect of cryotherapy is not based on killing pathogen such as viruses, phytoplasmas and bacteria by freezing but on the selection of the most meristematic part of the plant that has also the highest chance to be free of those pathogens.

Finally, cryopreservation can also be applied to store large amounts of independent in vitro cultures that are being produced and conserved by in vitro production companies.

What will you learn?

- The theoretical background will be given on how biological material can survive such extreme low temperatures
- You will gain hands on experience on different cryopreservation techniquis, applied to different explant types, guided by specialists on the topic
    - Droplet vitrification of in vitro shoots
    - Dormant bud freezing
    - Slow freezing of embryogenic cultures
    - Fast freezing of seeds and embryonic axes

Who should apply?

This training is meant for CopyTree members with a background and interest in classical tissue culture and conservation of genetic resources. The training itself is free, and participants will be reimbursed for long distance travel expenses and receive a **daily allowance of 150€.**

To apply, please submit a single document that includes your CV and a motivation letter detailing your current research and how you plan to utilize the training in your future studies or work. Be sure to name the document with your first and last name.

Invited specialists

- Terezia Salaj (Slovak academy of Science)
- Alois Bilavcik (CRI in Prague)
- Specialist on seed conservation (TBD)

Local organizers and Instructors

- Natalia Fanega (Alliance of Bioversity and CIAT/ KU Leuven)
- Edwige André (KU Leuven)
- Bart Panis (Alliance of Bioversity and CIAT/ KU Leuven) (**b.panis@cgiar.org**)

Participant Number is limited to 12

Participants for the training course will be selected based on several factors, including:

- Quality of the motivation letter and CV: A well written motivation letter that clearly demonstrates your interest in the topic and a CV highlighting relevant experience will be highly valued.
- Prior participation in CopyTree Training Schools: Priority will be given to individuals who have not yet attended a CopyTree Training School.
- Career stage: Young researchers and investigators are encouraged to apply.
- Geographic diversity: The selection committee will aim for a diverse group of participants from different regions.
- Gender balance: The selection process will strive for gender parity among participants.

Enroll now in the Training School and join us in an enriching learning experience. We look forward to welcoming you to this remarkable event!

How to apply:

To apply, please submit a single document that includes your CV and a motivation letter detailing your current research and how you plan to utilize the training in your future studies or work. Be sure to name the document with your first and last name. **The enrolment closes on 05 March.**

You have to register online at https://www.copytree.eu//registration-form-training-school-leuven