



# Training School on *Allium* cryopreservation

**ECPGR *Allium* Working Group**

**ECPGR Cryopreservation Working Group**

**Period:** 17-20 September 2024

**Location:**  Crop Research Institute, Prague (Czech Republic)

**Participants:** 5 students

**Teachers:** Manuela Nagel, Marion Grübe (IPK Gatersleben, Germany); Jiří Zámečník, Miloš Faltus, Olena Bobrova, Alois Bilavčík (Crop Research Institute of Prague, Czech Republic); Bart Panis (Bioversity International, Belgium)

## **Purpose and expected output(s) of the meeting**

The aim of the Training School is to transfer the knowledge acquired by two of the abovementioned cryopreservation teams (i.e., Crop Research Institute, and IPK Gatersleben) to other Institutions dealing with *Allium* cryopreservation. Three different approaches of garlic cryopreservation will be introduced and trained: Cryopreservation of apical shoot tip from explants, apical shoot tip from bulbils, and of glove's basal plates. The course will introduce to a technique that can be applied to the specific plant material coming from *in vitro* or the field conditions. At the end of the training school, the participants will have the knowledge necessary to apply the technique in their respective cryobanks. Furthermore, the participants are expected to apply new knowledge and skills to cryopreserve samples in garlic collections in their home institutes and their experience, results and advances will be compared.

## Number and names of participants

Five participants will attend the training school. They have been selected from among *Allium* WG members according to the following criteria: experience with basic cryopreservation concepts and techniques based on *in vitro* culture, complete cryobank equipment and facilities, availability of *Allium* collection and a plan to use the new knowledge and skills in home institutions.

## Training School Programme

### 16 September: Monday

Arrival

### 17 September: Tuesday

9.00 – 9.10	<b>M. Madaras (CRI director):</b> Welcome (Online streaming)
9.10 – 9.20	<b>H. Stavěliková:</b> ECPGR <i>Allium</i> WG (Online streaming)
9.20 – 9.30	<b>M. Nagel:</b> Joined WGs ECPGR project introduction (Online streaming)
9.30 – 9.40	<b>M. Faltus:</b> Training course goals, program, expectations (Online streaming)
9.40 – 10.10	<b>M. Nagel:</b> Garlic shoot tip cryopreservation (Online streaming)
10.10 – 10.25	<i>Coffee break</i>
10.25 – 13.00	Shoot tip preparation – practice ( <b>M. Nagel, M. Grübe</b> )
<i>Lunch</i>	
14.00 – 15.00	LS + PVS3 dehydration – practice ( <b>M. Nagel, M. Grübe</b> )
15.00 – 15.30	Visit to the cryobank
15.30 – 17:00	Cryopreservation/thawing/unloading – practice ( <b>M. Nagel, M. Grübe</b> )
18:00	Social dinner

### 18 September: Wednesday

9.00 – 9.15	<b>M. Nagel:</b> Third Garli-CCS – progress report (Online streaming)
9:15 – 9:45	<b>B. Panis:</b> Overview of plant cryopreservation (Online streaming)
9:45 – 10:00	Discussion and further issues concerning Garli-CCS (Online streaming)

10:00 – 10.15	<b>J. Zámečník:</b> Garlic basal plates cryopreservation (Online streaming)
10.15 – 10.30	<i>Coffee break</i>
10.30 – 13.00	Basal plates preparation – practice ( <b>O. Bobrova, B. Tunklová</b> )
<i>Lunch</i>	
14.00 – 15.00	LS + PVS3 dehydration – practice ( <b>O. Bobrova, B. Tunklová</b> )
15.00 – 15.30	Visit to the gene bank
15.30 – 17:00	Cryopreservation/thawing/unloading – practice ( <b>O. Bobrova, B. Tunklová</b> )

### **19 September: Thursday**

9.00 – 9.30	<b>M. Faltus:</b> Vitrification control by thermal analysis (Online streaming)
9.30 – 10.00	<b>J. Zámečník:</b> Cryopreservation of garlic bulbils from topsets (Online streaming)
10.00 – 10.15	<i>Coffee break</i>
10.15 – 12.00	Shoot tips preparation from bulbils – practice ( <b>J. Zámečník</b> )
12.00 – 13.00	LS + PVS3 dehydration – practice ( <b>O. Bobrova, B. Tunklová</b> )
<i>Lunch</i>	
13.00 – 14.00	LS + PVS3 dehydration – practice ( <b>O. Bobrova, B. Tunklová</b> )
14.00 – 15.00	Cryopreservation/thawing/unloading – practice ( <b>J. Zámečník</b> )
15:00	Harvest festival in CRI

### **20 September: Friday**

9.00 – 9.30	<b>M. Faltus:</b> Strategy for safe cryopreservation and recovery
9.30 – 10.30	<b>M. Nagel, J. Zámečník, O. Bobrova, B. Panis, M. Faltus:</b> Conclusions of the methods used
10.30 – 10.45	<i>Coffee break</i>
10.45 – 11.30	<b>M. Nagel, M. Faltus:</b> Conclusion of the training course
<i>Lunch</i>	
12:20	Departure