



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 Gatesleben, 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 Gatesleben) 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	CRI director: Welcome (Hybrid)
9.10 – 9.20	H. Stavěliková: ECPGR <i>Allium</i> WG (Hybrid)
9.20 – 9.30	M. Nagel: Joined WGs ECPGR project introduction (Hybrid)
9.30 – 9.40	M. Faltus: Training course goals, program, expectations (Hybrid)
9.40 – 10.10	M. Nagel: Garlic shoot tip cryopreservation (Hybrid)
10.10 – 10.25	<i>Coffee break</i>
10.25 – 13.00	Shoot tip preparation – practice (M. Nagel, M. Grübe)

Lunch

14.00 – 15.00	LS + PVS3 dehydration – practice (M. Nagel, M. Grübe)
15.00 – 15.30	Visit to the cryobank
15.30 – 17:00	Cryopreservation/thawing/unloading – practice (M. Nagel, M. Grübe)
18:00	Social dinner

18 September: Wednesday

9.00 – 9.15	M. Nagel: Third Garli-CCS – progress report (Hybrid)
9:15 – 9:45	B. Panis: Overview of plant cryopreservation (Hybrid)
9:45 – 10:00	Discussion and further issues concerning Garli-CCS (Hybrid)
10:00 – 10.15	J. Zámečník: Garlic basal plates cryopreservation (Hybrid)
10.15 – 10.30	<i>Coffee break</i>
10.30 – 13.00	Basal plates preparation – practice (O. Bobrova, B. Tunklová)

Lunch

14.00 – 15.00	LS + PVS3 dehydration – practice (O. Bobrova, B. Tunklová)
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- 15.00 – 15.30 Visit to the gene bank
 15.30 – 17:00 Cryopreservation/thawing/unloading – practice (**O. Bobrova, B. Tunklová**)

19 September: Thursday

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

20 September: Friday

- 9.00 – 9.30 **M. Faltus:** Strategy for safe cryopreservation and recovery
 9.30 – 10.30 **M. Nagel, J. Zámečník, O. Bobrova, B. Panis, M. Faltus:** Conclusions of the methods used
 10.30 – 10.45 *Coffee break*
 10.45 – 11.30 General discussion
 11.30 – 12.00 **M. Nagel, M. Faltus:** Conclusion of the training course
Lunch
 Departure