

Preface

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MTT Plant Production Research

COST Action coordinates nationally funded research at European level with the purpose of creating networks that bring together European scientists. Cost Action 871 Cryoplanet, i.e. “Cryopreservation of Crop Species in Europe”, started in 2007. Cryopreservation is used for storage of viable plant germplasm at an ultra low temperature ($-196\text{ }^{\circ}\text{C}$) in liquid nitrogen. Under cryogenic storage conditions, plant germplasm can be preserved safely over very long periods of time, theoretically in perpetuity, because metabolic and most physical and chemical processes stop at this temperature.

Cryotechnique has been recommended for long-term preservation of plant genetic resources and it has been applied as a secondary preservation technique in collections of valuable germplasms. In addition to cryopreservation, cryotherapy, a novel application of cryotechnology, has proved to be an effective method of eliminating diseases from infected plants. This new tool can be applied also in the production and maintenance of certified nuclear stocks of vegetatively propagated horticultural and staple crop plants. The rapid development of cryopreservation methods and protocols has opened possibilities for wider utilization of this technique in horticultural industry, particularly in combination with micropropagation.

The scientific programme of Cryoplanet was developed with the input of researches in 17 COST countries. The researchers of this Action represent a unique assembly of European scientists, with great experience in plant cryopreservation, tissue culture, stress physiology and/or gene bank management. Dr. Bart Panis (Belgium) is the Chair of and Professor Paul Lynch (UK) is the Vice-Chair of COST Action 871 Cryoplanet.

Two Working Groups (WG) are distinguished within the Action; WG1 on fundamental aspects of cryopreservation/cryoprotection and generic stability, and WG2 on technology implementation, transfer, application and validation in plant gene banks, culture collections and research groups. Coordinators of WG1 are Professor Pavel Pukacki (Poland) and Dr. M. Angeles Revilla Bahillo (Spain), and coordinators of WG2 are Dr. Florent Engelman (France) and Dr. Joachim Keller (Germany). These two working groups organize WG meetings on a yearly basis, each one separately or the two together. In February 2008, joint 2nd WG Meetings were organized in Oulu, Finland, by the University of Oulu and MTT Agrifood Research Finland. This special issue of Agricultural and Food Science contains a selection of papers from the meeting of the two Working Groups.

