

**IX International Symposium on In Vitro Culture  
and Horticultural Breeding (13-17 March 2016),  
Horticulture Research Institute (HRI), Giza, Egypt**



# Abstracts Book

Edited by

Prof. Dr. Adel A. Abul-Soad  
Prof. Dr. Jameel M. Al-Khayri  
Prof. Dr. Maurizio Lambardi



**Published by**  
Horticulture Research Institute, Agricultural Research Center, Giza, Egypt

## **In vitro conservation of *Arbutus unedo* L. and *Castanea* hybrids clones by slow growth**

**Prof. Dr. Filomena Gomes**, Instituto Politécnico de Coimbra, Escola Superior Agrária de Coimbra, CERNAS, Bencanta, Apartado 7036, 3045-601 Coimbra, Portugal; [fgomes@esac.pt](mailto:fgomes@esac.pt) (presenting author)

**Marta Clemente**, Instituto Politécnico de Coimbra, Escola Superior Agrária Coimbra, CERNAS, Bencanta, Apartado 7036, 3045-601 Coimbra, Portugal; [mssclemente@gmail.com](mailto:mssclemente@gmail.com) (co-author)

**Fani Plácito**, Instituto Politécnico de Coimbra, Escola Superior Agrária Coimbra, CERNAS, Bencanta, Apartado 7036, 3045-601 Coimbra, Portugal; [faniplacito@gmail.com](mailto:faniplacito@gmail.com) (co-author)

**Patrícia Figueiredo**, GREENCLON LDA, R. António Jardim N 24 , Rc Dto Frente, 3000-035 Coimbra, Portugal; [pfigueiredo@greenclon.pt](mailto:pfigueiredo@greenclon.pt) (co-author)

**Neusa Nazaré**, Instituto Politécnico de Coimbra, Escola Superior Agrária Coimbra, CERNAS, Bencanta, Apartado 7036, 3045-601 Coimbra, Portugal; [mnazare@esac.pt](mailto:mnazare@esac.pt) (co-author)

**Keywords:** micropropagation; manitol; sucrose; strawberry tree; *C. sativa* x *C. crenata*; *C. sativa* x *C. mollissima*

### **Abstract**

Conservation of genetic diversity has different motivations, including ecological and economic to safeguard the potential for species adaptation. *In vitro* conservation by slow growth allows to regenerate plants a long-term showing morphological and genetic stability. Slow growth storage (SG) was tested to conserve selected adult clones of *Arbutus unedo* L. (Au) and *Castanea* hybrids (Cs; used as rootstocks), resistant to *Phytophthora cinnamomi*. Different conditions for SG were tested during the periods 3-6-9-12 months (4°C; dark; gelled medium MS<sup>1/2</sup>): sucrose and mannitol concentrations (0.16; 0.22M) were compared to control (0.09M suc.). The survival rate (SR) was recorded after the conservation periods. A reactivation period (25/20°C, in dark, 1<sup>st</sup> week; 8/16h, 2<sup>nd</sup> week; 16/8h, 3<sup>th</sup> week) was accomplished. Then shoot length was evaluated, shoots were cultivated and first multiplication rate (MR) was assessed. After 4 weeks the 2<sup>nd</sup> MR was recorded. The best results of SR were achieved when sucrose. was tested compared to mannitol (PndMR) similar results were observed with the same concentrations for both species. These results show that sucrose at 0.22M and 0.09M assures *in vitro* conservation of Cs and Au cultures by SG. Other techniques (artificial seeds and cryopreservation) are being tested to reduce labor costs, thus achieving the most effective long-term conservation.