



## Program

### Sunday, 9<sup>th</sup> September 2018

15.00 – 18.30 Registration (Department of Life Sciences, Botanic Garden) – Visit to the Botanic Garden, Coffee and refreshments.

### Monday, 10<sup>th</sup> September 2018

08.00 – 10.00 Registration  
(Congress venue – Science Museum of the University of Coimbra)

10.00 – 10.20 Opening session

10.20 – 11.00 Plenary lecture 1

**PL1. The role of rejuvenation through tissue culture in the success of *Eucalyptus globulus* vegetative propagation** **Cristina Marques** - RAIZ, Instituto de Investigação da Floresta e do Papel, Portugal

11.00 – 11.30 *COFFEE BREAK*

### **Session 1 – Tree breeding and field assays (part 1)**

**Chairwoman:** Cristina Marques

11.30 Superior ideotypes for Christmas tree production – combining quantitative genetic tools, molecular markers and improved somatic embryogenesis methods. Ulrik Bräuner Nielsen.

11.50 Benefits and risks of using clones in forestry. Harry Wu.

12.10 Comparative analysis of primary metabolome and secondary metabolites in the somatic embryogenesis of tamarillo (*Solanum betaceum* Cav). André Caeiro.

12.30 – 14.15 *LUNCH*

14.15 – 15.00 Plenary lecture 2

**PL2. Cloning systems of traditional and alternative Brazilian forest species** **Ivar Wendling** - Brazilian Agricultural Research Corporation (Embrapa Florestas), Brazil.

### **Session 1 – Tree breeding and field assays (part 2)**

**Chairmen:** Ivar Wendling & Bruno Navarro

15.00 An assessment of hybrid poplar leaf and wood traits in micropropagated plants and plants propagated from root cuttings: gas exchange, vascular, nanomechanical and cell wall. Jaroslav Ďurkovič.

15.20 Strawberry tree (*Arbutus unedo* L.) breeding: hybridization and polyploidization. João Martins.

15.40 – 16.20 Plenary lecture 3

**PL3. KLON – plant biotechnology for productivity and sustainability of agro-forestry industries** **Tânia Almeida** - Klón, Innovative Technologies from Cloning, Biocant Park, Parque Tecnológico de Cantanhede, Portugal

16.20 – 17.30 *COFFEE BREAK, POSTER SETUP*

*(Congress venue – Mathematics Department, University of Coimbra)*

- 18.00 – 19.00 Visit to University of Coimbra – Joanina Library and others
- 21.00 – 23.00 Coimbra by night. Walking guided tour to see some of the main Coimbra monuments. Coffee and refreshments at the Department of Life Sciences. Traditional music – student's Tuna

## Tuesday, 11<sup>th</sup> September 2018

- 09.00 – 09.40 Plenary lecture 4

**PL4. Industrial implementation of somatic embryogenesis and genomic selection in white spruce in New Brunswick Yill-Sung Park** - Natural Resources Canada, Canadian Forest Service, Fredericton, NB, Canada

### Session 2 – Large scale cloning and industrial production (part 1)

**Chairwomen:** Jana Krajnakova & Ana Alves

- 09.40 Clones à la carte - how proper organisation of large clone and data collections can support researchers, breeders and customers. Tim Benneckenstein.
- 10.00 Biofactory movil: New access alternative to the massive propagation of clones, by tissue culture. Guillermo Salvatierra.
- 10.20 Implementing genomic selection for multi-varietal forestry of white spruce (*Picea glauca*). Yill-Sung Park.
- 10.40 Effects of meta-topolin derivatives and temporary immersion on hyperhydricity and shoot proliferation in *in vitro* of *Pyrus communis*. Mariem Lotfi.
- 11.00 – 11.30 COFFEE BREAK, POSTERS

### Session 2 – Large scale cloning and industrial production (part 2)

**Chairman:** Jorge Canhoto

11.30 Somatic embryogenesis of Norway spruce in Finland – seven years from start to first commercial pilots. Tuija Aronen.

11.50 Field testing clones of North American willow (*Salix*) species for biomass production and ecological restoration on highly disturbed sites. Alex Mosseler.

12.10 Mitigating the loss of genetic material and increasing the yield of emblings in late phases of Norway spruce SE. Mikko Tikkinen.

12.30 – 14.00        *LUNCH*

14.00 – 14.40        Plenary lecture 5

**PL5. New method of initiation and multiplication culture cycling of somatic polyembryogenesis of Loblolly pine** **Pramod Gupta** – Trees for the future LCC, WA, USA.

### **Session 3 – Complementary technologies (part 1)**

**Chairman:** Pramod Gupta

14.40 Tree Biotechnologies: What has worked and what hasn't worked? Jenny Aitken.

15.00 Low cost media for improving in vitro propagation of woody plant species. Conchi Sánchez.

15.20 Effect of CPPU-derived inhibitors of cytokinin oxidase on *de novo* shoot formation. Nino Muvarnidze.

15.40 – 16.10        *COFFEE BREAK, POSTERS*

### **Session 3 – Complementary technologies (part 2)**

**Chairman:** Shri Mohan Jain

16.10 A fluorine containing topolin cytokinin for plant tissue culture. Stefaan Werbrouck.

16.30 Effect of flavonoid on mycorrhizal synthesis between *Tuber borchii* and *Arbutus unedo* L. *in vitro* plants. Filomena Gomes.

16.50 Progress and prospect of vegetative propagation for *Acer mono Maxim*. Peng Zhang.

17.10 – 17.50 Plenary lecture 6

**PL6. An overview on somatic embryogenesis and applications in woody plants** **Shri Mohan Jain** – Department of Agricultural Sciences, Helsinki, Finland

19.30 – 22.30 *Beer party*

## Wednesday, 12<sup>th</sup> September 2018

09.00 – 09.40 Plenary lecture 7

**PL7. Biotechnological tools to produce superb trees in the green era.** **Paloma Moncaleán** – Neiker-Tecnalia. Centro de Arkaute, Vitoria-Gasteiz, Spain.

### Session 4 – Genetics and epigenetics (part 1)

**Chairwomen:** Paloma Moncaléan & Cátia Pereira

09.40 Epigenetics in trees: a source of plasticity in the context of climate change. Stéphane Maury.

10.00 The transcriptome of maritime pine across embryo development. Célia Miguel.

10.20 Transcriptome-wide analysis dissecting transcription factors orchestrating larch tree phase change. Wan-Feng Li.

10.40 – 11.10 COFFEE BREAK, POSTERS

## Session 4 – Genetics and epigenetics (part 2)

**Chairman:** Tsuyoshi Maruyama

- 11.10 Effect of megagametophyte priming on short-term response to high temperatures in somatic embryogenesis-derived plants of maritime pine. Isabel Arrillaga.
- 11.30 Detecting and expression of somatic embryogenesis regulatory genes in *Tilia amurensis*, *Tilia insularis* and *Tilia mandshurica*. Hae-in Kang.
- 11.50 Cork oak somatic embryogenesis as a system model to study QsMYB1, a transcription factor highly expressed in phellem. Tiago Capote.
- 12.10 Transcriptional identification and characterization of differentially expressed miRNAs involved in conifer embryogenesis. Ana Alves.

12.30 – 14.00 LUNCH

14.00 – 14.40 Plenary lecture 8

### **PL8. Progress in somatic embryogenesis of Japanese conifers**

**Tsuyoshi Maruyama** – Department of Forest Molecular Genetics and Biotechnology, Tsukuba, Japan

## Session 5 – Somatic embryogenesis (part 1)

**Chairman:** Scott Merkle

- 14.40 The role of mitochondrial alternative oxidase (AOX) during somatic embryogenesis of Norway spruce (*Picea abies* L. Karst). Jana Krajinakova.
- 15.00 Dynamics of DNA methylation and effects of de-methylating agents on somatic embryogenesis of *Quercus suber*. Pillar Testillano.
- 15.20 Carbohydrate metabolism modulation in the zygotic and somatic embryogenesis of the subtropical conifer species *Araucaria angustifolia*. Bruno Navarro.

16.00 – 18.30 Visit to Mata do Bussaco

19.30 – 22.30 Dinner at Caves Messias

**Thursday, 13<sup>th</sup> September 2018**

09.00 – 09.40 Plenary lecture 9

**PL9. Induction of somatic embryogenesis in leaf and shoot apex explants derived from adult trees: a case study on an oak species** **Vanesa Cano** – IIAG-CSIC, Santiago de Compostela, Spain.

### **Session 5 – Somatic embryogenesis (part 2)**

**Chairwoman:** Vanesa Cano

09.40 Biotechnology and bioprospection of native species from monte desert Patagonia, as strategies for the development of the regional bioeconomy. Sandra Sharry

10.00 Automated active compounds screening systems allows high-throughput optimization of somatic embryogenesis in *Coffea arabica*. Rayan Awada.

10.20 *In vitro* somatic embryogenesis in sweet orange (*Citrus sinensis* L.) Cvs. Maltaise demi-sanguine and Thomson navel for viral sanitation. Kaouther Ben Mahmoud.

10.40 – 11.10 *COFFEE BREAK, POSTERS*

### **Session 5 – Somatic embryogenesis (part 3)**

**Chairmen:** J-F Trontin & Rayana Awada

11.10 Somatic embryogenesis in *Bambusa oldhamii* and *Dendrocalamus asper* from immature inflorescences. Miguel Pedro Guerra.

11.30 Gamma radiation effect on somatic embryogenesis of Norway spruce (*Picea abies*). YeonKyeong.

11.50 Effect of heavy metal ions on development of Norway spruce somatic embryos. Biljana Dordevic.

12.10 – 12.50 Plenary lecture 10

**PL10. The ups and downs of developing hybrid sweetgum varieties for the U.S. bioenergy and pulp and paper industries: a 20-year case study** **Scott Merkle** – University of Georgia, Athens, USA.

12.50 – 14.30 *LUNCH*

14.30 – 15.10 Plenary lecture 11

**PL11. Somatic embryogenesis and other vegetative propagation of native forest tree species in north China: current status and issues should be striving solved near future** **Hailong Shen** – Northeast Forestry University, Harbin, China.

15.10 – 15.30 Improved and synchronized maturation of Norway spruce somatic embryos in temporary immersion bioreactors. Ulrika Egertsdotter.

15.30 – 16.30 *IUFRO meeting*

18.30 – 23.00 *Gala Dinner, Fado de Coimbra show*

**Friday, 14<sup>th</sup> September 2018**

09.00 – 09.40 Plenary lecture 12

**PL12. Embryogenic competence acquisition in tamarillo – from tissue to single-cell based analysis** **Sandra Correia** – Centre Functional Ecology, University of Coimbra, Portugal.

**Session 5 – Somatic embryogenesis (part 4)**

**Chairwomen:** Sandra Correia & Biljana Dordevic

- 09.40 Current results in somatic embryogenesis for *Pinus koraiensis*, an ecologically and economically very important pine species in East Asia. Chunxue Peng.
- 10.00 Stress application to Aleppo pine somatic embryogenesis: Problem or opportunity? Cátia Pereira.
- 10.20 Repetitive somatic embryogenesis induced cytological and proteomic changes in embryogenic lines of *Pseudotsuga menziesii*. Caroline Teyssier.
- 10.40 Somatic embryogenesis of long-term proliferating embryogenic cultures and plant regeneration in *Larix sibirica*. Maria Park.

11.00 – 11.30 COFFEE BREAK

### Session 6 – Somatic embryogenesis (part 5)

**Chairman:** Heung-Kyu Moon

11.30 Primordial shoots of Norway spruce (*Picea abies*) as explants for somatic embryogenesis. Saila Varis.

11.50 WINNING AGAINST WILDINGS - The role biotechnology is playing in the fight against wilding conifers in New Zealand. Cathie Reeves.

12.10 – 12.50 Plenary lecture 13

**PL13. Promotion of rooting rate for commercial planting of *Eucalyptus pellita* clone and enhancement of seedling growth by mycorrhiza application** **Heung-Kyu Moon** – R&D Department, PT. Korintiga Hutani, Kalimantan Tengah, Indonesia

12.50 – 13.15 Closing ceremony

### Saturday, 15<sup>th</sup> September 2018

08.00 – 18.00 Visit to Óbidos Village and Alcobaça Monastery. Short stop in Fátima in the way back to Coimbra. Lunch included.