Project: Enabling scale-up of somatic embryogenesis (SE) plant production by physiological analysis of embryos processed in bioreactors and the R&D SE System for harvest

Project leaders: Ulrika *Egertsdotter (UPSC) and Marie-Anne Lelu-Walter (INRA, Orleans)*

Project description

The physiological state of mature somatic embryos of Norway spruce and larch will be analysed and correlated to capacity to maturation and germination. Large amounts of mature embryos will be generated in bioreactors, to provide sufficient number of embryos of different types/developmental stages/ for in depths biochemical analyses (carbohydrates, total proteins, lipids). Different types of embryos related to different stages of development can be selected, sorted and harvested with the R&D SE system at UPSC, Umeå (*https://www.upsc.se/ulrika_egertsdotter*). Each of the different types of embryos identified for biochemical analyses will be described with respect to capability to germinate and form plants. Analyses of carbohydrates, total proteins and lipids are carried out at INRA Orleans (*https://www6.val-de-loire.inra.fr/biofora/Personnel/Permanents/LELU-WALTER-Marie-Anne* <https://www6.val-de-loire.inra.fr/biofora/Personnel/Permanents/LELU-WALTER-Marie-Anne>).

The suitable candidate will work in a Swedish-French team on a time limited project. The goal for the project is to increase our understanding of conifer embryo development such that methods for SE plant production can be improved by selection of high-potential mature embryos for germination and plant formation. The objectives are to utilize the instrumentation for embryo selection and characterization available at UPSC in combination with the expertise on analyses of physiological status of mature embryos at INRA. The candidate is expected to spend time both at UPSC, Umeå, and INRA, Orleans. Specific tasks within the project are focused on analyses of carbohydrates, storage proteins and lipid contents, plant tissue culture work, image analyses data processing, ultrastructural studies and physiological studies of both tissue culture material and plants.

Qualifications

Strong documented background in plant developmental biology. Experience in conifer somatic embryogenesis methods is desirable. Documented experience from biochemical analyses of plant physiology. Excellent sterile techniques are a requirement. Fluent in written and spoken English. Good working knowledge for computer-based data management.

Required degree: PhD in a relevant area.

Application

The application should contain (1) CV with full publication list and copies of the relevant degree certificates, (2) a description of research experiences, (3) a statement of scientific interests as well as (4) contact information of three referees. Please send your full application to Ulrika Egertsdotter (ulrika.egertsdotter@slu.se <mailto:ulrika.egertsdotter@slu.se>) and Marie-Anne Lelu-Walter (marie-anne.lelu-walter@inra.fr <mailto:marie-anne.lelu-walter@inra.fr>) not later than *2018-07-31*.

Contact

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