Regulation of flowering in conifers

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The Forestry Research Institute of Sweden (Skogforsk) and The Swedish University of Agricultural Sciences (SLU) is announcing a PhD-position in biology with focus on plant physiology and regulation of flowering in conifers. The student will be employed by Skogforsk, Uppsala, and accepted as a PhD student at the Department of plant biology, SLU Uppsala.

Project description

One way of preparing for climate change for the forestry sector is a secure supply of improved seed. Today, there is a shortage of suitable improved Norway spruce seeds in most planting zones in Sweden. This shortage has two major causes, the irregular flowering of Norway spruce and damages caused by insects and fungi. This shortage reduces the forestry sectors availability to contribute to the transition to a bio-based economy and is a problem for the necessary adaption to new climatic conditions.

The overall goal of this research is to reveal the secrets of the “florigen” of conifers. The focus of this PhD project is to expand the understanding of how conifer plants regulates the transition from vegetative to reproductive growth to increase efficiency in conifer breeding and enhance seed production in seed orchards. The PhD student will work with the naturally occurring spruce mutant (<i>Picea abies</i> var. <i>acrocona</i>) that can be stimulated to produce cones within one year from seeding.

The PhD project is divided into three parts, each of which will contribute to the project’s over-arching research question on how vegetative to reproductive phase change is regulated in conifers. Part 1) will study the expression of flower inducing genes during cone initiation in the <i>acrocona</i> mutant. Part 2) will study <i>acrocona</i> rootstocks and their effects on growth and reproductive initiation of the grafted shoot, and part 3) will study the effect of light spectrum on gene activity of flower inducing genes. Together the projects will contribute to the development of methods to increase the efficiency in conifer breeding programs and seed production.

The project will be carried out in close collaboration between Skogforsk and SLU. The position is for 5 years and defined as 80% research time at SLU, and 20% internship at Skogforsk. One year consists of practical work at Skogforsk in close collaboration with forest companies.

Qualifications

We seek a candidate with academic background (Master level) in population genetics, forest genetics and breeding, molecular biology or corresponding. Knowledge of Swedish forestry is a merit and driving license is desirable. The candidate should be highly motivated, independent and collaborative, and have a very good command in both oral and written English. The position includes communication with the Swedish forestry sector, therefore communication skills, both oral and written, in Swedish are a merit. Evaluation will be based on the individual letter, quality and relevance of master program and publications. A selection of candidates will be interviewed, and the candidate’s performance in a literature essay that may be given after the interview.

SLU is an Equal Opportunity Employer.

A person has basic eligibility for third cycle education if he or she has taken a second cycle qualification or has completed course requirements of at least 240 higher education credits, including at least 60 higher education credits at second cycle education. Upper secondary school grades equivalent to English B/English 6 are a basic requirement.

Selection among applicants meeting the requirements is made with reference to written application including curriculum vitae, copies of degrees and transcripts of academic records, one copy of the dissertation for masters or undergraduate degree, a list of at least two references familiar with the applicant's qualifications, certified knowledge of the English language and an interview.

Read about the PhD education at SLU at www.slu.se/en/education/programmes-courses/postgraduate-studies/

Use this APPLICATION FORM

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Applications, marked with ref no SLU ua 2018.2.5.1-107, must have arrived at the Registrar of SLU, P.O. Box 7070, SE-750 07 Uppsala or registrator@slu.se no later than 2018-02-28.
Prerequisites for PhD studies are 1–2 years at master level or an equivalent qualification from abroad, together with adequate knowledge in English.

**Forms for funding or employment**

Employment as PhD student