

Proposal for internship 2025 (winter/spring)

The student will be involved in climate research at INBO, specifically focusing on provenance trials of tree and shrub species and tree ring analysis in collaboration with UGent-Woodlab.

Rationale for the research:

Various types of experiments are conducted to gain better understanding of how trees and shrubs will respond to climate change. Through provenance trials, we aim to answer questions such as whether southern origins of tree and shrub species should be planted here in anticipation of predicted climate change.

Proposed internship activities:

1. Observations of bud burst in several provenance trials of tree and shrub species: container plants at the nursery of INBO in Geraardsbergen (some are follow up of drought stress experiments). Field observations are also possible (e.g. provenance trial of *Quercus robur* in Moortsele).

Next proposed activities are in collaboration with UGent-Woodlab.

2. Microscopy: conduct observations and measurements on already prepared sections of different provenances of black alder and possibly also red dogwood. For black alder: cambial phenology, determining when radial growth begins in spring; for red dogwood: wood anatomical signals of drought stress.
3. Measure tree rings on scans of core samples from two provenance trials of black alder. The aim is to determine if black alder from different regions responds differently to recent climate extremes.

Further topics are also possible:

4. Tree ring analysis of trees along a rural-urban gradient, impact on growth (different tree species)
5. climate reconstruction based on bristlecone pine: tree ring analysis
6. intra-annual growth along a gradient in Europe
7. Tree ring analysis of exotic tree species in arboretum of Tervuren

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