

CZ-N grant meeting, 27/10 2009

Blue room, 13:00-15:00



- > Present: Nina Nagy, Toril Eldhuset, Josef Urban, Daniel Volarik, Roman Gebauer, Isabella Børja

- > Meeting agenda:
 - > Status quo
 - > Manuscripts, tentative titles, authors
 - > Plans for 2010
 - > Open

Status quo – outdoor plots

- > Loggers (soil water potential, diameter, sap flow on stems + one branch, installed + data emptied regularly)
- > Climatic station installed
- > Minirhizotrons (postponed to 2010)
- > Lysimeters installed (too dry, not working)
- > Soil analysis (postponed to 2010)
- > Mycorrhizal fruitbodies sampled (further analysis)
- > One tree measured for efficiently absorbing root surface area (modified earth impedance method)
- > Root nets placed (Douglas Godbold, Bangor, UK)
- > Root samples collected (May 2009, anatomy, tracheids, diam., Roman)
- > Shoot samples collected (Aug. 2009, top + bottom of the crown, anatomy, nutrients, calorimetry, leaf mass per area, Roman)
- > Xylem water potential (Scholander method)

Status quo – glasshouse experiment

> Tree stem - and height measurements

- > Height-2008
- > Height-2009
- > Diameter-2008-root collar (age, diameter with bark must be calculated, cannot be related to treatment)
- > Stem slabs-2009, last year growth (can measure diameter, amount of tracheids, growth 2009 vs. 2008)
- > Current year shoots - dry weight (10 shoots per tree, needles and twigs separately)
- > Current year shoots - microscopy + leaf mass area (10 shoots per tree, fixed, tracheid measurements, needle cross section area, anatomy, xylem area ++) (Roman)
- > Calorimetry + nutrients in current year shoots (100-150 shoots per tree, needles, Roman)
- > Xylem water potential (Scholander method)



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Status quo – glasshouse experiment (2)

> Trees - roots

- > Fresh weight (for 1 root system), 2009-roots < 2 mm, living
- > Dry weight (all roots), 2009-roots < 2 mm, living
- > Fine root length 2009 (living + dead), only < 2 mm, living: root length per diameter class, nr. of root tips, forking, crossings, projected root area, root volume (all based on roots excavated from $\frac{1}{4}$ of the pot volume)
- > Root samples, anatomy (Roman)
- > Minirhizotrons-root growth



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Status quo – glasshouse experiment (3)

> Water management

- > Xylem water potential, shoots (3 measurements, Scholander method)
- > Soil moisture (TDR)



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Status quo – glasshouse experiment (4)

> **Inoculation**

- > Slab section (for possible measurement of fungal growth in wood and bark)

- > **Other samples**
- > Current year shoots - dehydrins (Igor)
- > Stem bark - molecular analysis (Igor)

Missing issues: to be done/improved in 2010



> Indoor:

- > Air temperature (loggers placed in the pots?)
- > Diameter measured at the start of the season
- > Stem slabs + Root collar (to measure current years growth + relative growth)
- > Start experiment early (march?)
- > Inoculate earlier (june?)
- > Nr of trees: 18
- > Measure photosynthesis
- > Total biomass aboveground (all new shoots) indoor

Outdoor:

- > Root nets around the old root clump
- > Change the el. cable

Manuscripts - popular

- > Schrödingers cat (Paal, Pepa, Gebo)
- > Forester (Dan + Gebo)
- > Ziva (Gebo + Dan)
- > Glimt (Pepa, Isabella)

Manuscripts - international

- > Anatomy roots, shoots, needles from outdoor data (Journal of Forest Science): Gebo, Dan
- > Anatomy roots, shoots, needles from indoor data (Scandinavian J For Res): Gebo, Dan, Nina, Toril
- > Sap flow and drought (Scand J For Res): Pepa,
- > Roots phenology (MR + anatomy): Isabella, Gebo
- > Roots biomass, length, diam distr, tips, forks vs drought Toril, Nina
- > Anatomy related to drought: Nina, Gebo
- > Resistance: Paal
- > Methodology for studies of draught: all

Plans for 2010

- > May: installation (make a Hoxmark-house reservation, 3-4 persons), 3-4 weeks
- > Biometry of different clones will be measured,
- > October ultimo: take down equipment
- > Shoot samples (aug-sept): Gebo
- > Fill in the rest according to the working schedule in the application

Other:



> **To remember:**

- > Timesheets activity description: When registering in InstiPro, PLEASE, do describe the activity in english for all hours used within this project.