

## Better wood via breeding – promising Nordic results on inheritance of wood quality traits

**“There is a significant genetic variation for several traits that determine structural timber quality in Norway spruce”, says Dr. Björn Hannrup at Skogforsk, Sweden.**

Björn has coordinated the SNS-sponsored project “Structural timber quality in Norway spruce: Genetic variation and rapid measurement techniques”.

### Quality traits in breeding programme

“This study provides a good platform for including timber quality traits in tree breeding programs”, he says. “We found significant variations for many characters: spiral grain, wood density, microfibril angle, cross-sectional tracheid dimension and predicted Modulus of Elasticity (MoE). MoE is an expression for the stiffness of a board, an essential trait for construction lumber that carries a load”.

“Further, we showed that heritabilities were high, in most cases exceeding 0.4, for the wood properties. Thus, it should be possible to make genetic selections for these traits”.

“We also showed that there is no conflict between genetic selection for volume growth and shape stability of the lumber. However, MoE, wood density and microfibril angle showed adverse, negative genetic correlations with growth traits. A selection to increase volume by 10% was predicted to decrease MoE by 6%. Such negative effects can be counteracted by actively identifying and vegetatively propagating trees that combine good growth with acceptable MoE”, he says.

### Nordic project

The project was a collaboration between KVL (Denmark), Skog og Landskap (Norway), Metla (Finland) and STFI-Packforsk and Skogforsk (Sweden). Wood samples were collected from Nordic progeny and clonal trials then analysed using the Silvi-Scan instrument at STFI-Packforsk (see News and Views no 2 2004).

### Genetic markers

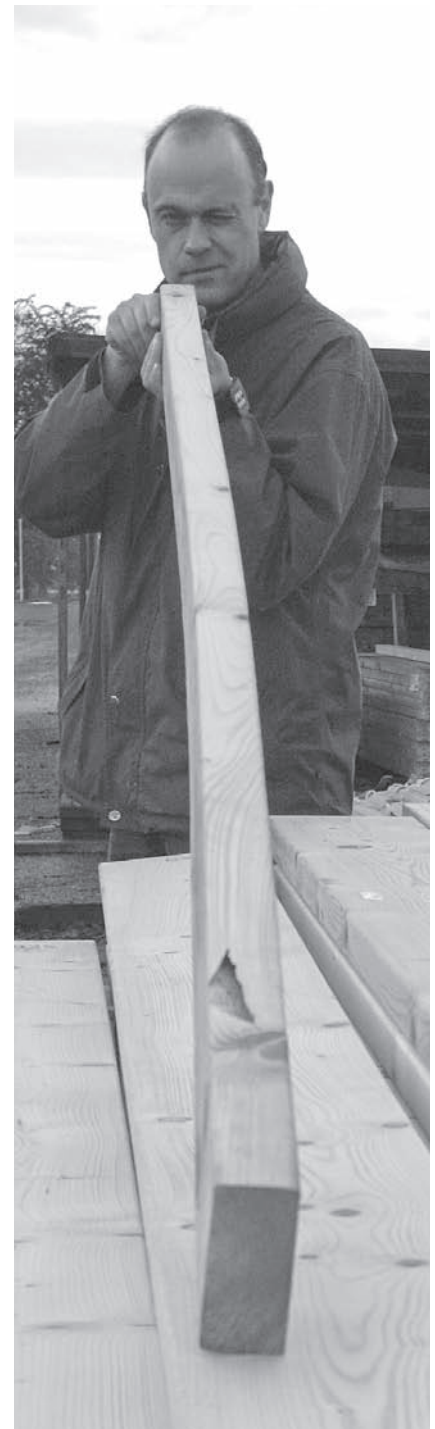
A subsample of the trees was also genotyped with AFLP-markers in an effort to identify QTLs. Preliminary analyses indicate that some major genes within some full-sib families control wood density and others control spiral grain.

“Development of marker-aided selection programs for such major genes requires further research in relevant breeding populations”, according to Björn Hannrup.

The project, SNS-88, started in 2003 and ended in June 2006. The total cost was 5.3 million SEK, 1.5 million of which was provided by SNS.

The final report can be downloaded from [www.nordicforestresearch.org](http://www.nordicforestresearch.org), and the URL of the project’s homepage is [www.skogforsk.se](http://www.skogforsk.se), search for SilviScan.

*Poor shape stability can be a serious problem in lumber for house building. Spiral grain is thus an important trait, since it determines the risk for twisted boards”, says Björn Hannrup, coordinator of the SNS-sponsored project. Photo: Nils Jerling*



# Policy-makers and scientists – can they meet?

**In order for forest-related research to influence policy-making successfully, forestry scientists must be able to communicate their findings effectively, but doing so is not easy, according to a study from EFI.**

The opportunities for discussion between policy-makers and scientists are limited. Even opinions regarding the best modes of communication and the ideal way of presenting information differ between scientists and policy-makers (in this context: government officials and forest administrators).

## Personal contact more important than publications

Policy-makers prefer to receive information via email or telephone first, from scientists participating in advisory committees second, and face-to-face meetings with scientists third. Scientists, on the other hand, rank participation in advisory committees first, giving presentations at conferences (where policy-makers are present) second, and email or telephone contact only third.

However, both of the groups (79% of the scientists and 82% of the policy-makers) ranked personal communication much higher than publications.

## Policy-makers listen to policy-makers

Policy-makers consider colleagues from their own organisation as the most important source of information, followed by policy-makers in international bodies. Information from scientists was only ranked third.

The policy-makers complained that information could be difficult to access. The three main problems

appeared to be: the overwhelming amount of available information (which makes it difficult to grasp key points); complex websites; and restricted access to online journals and databases.

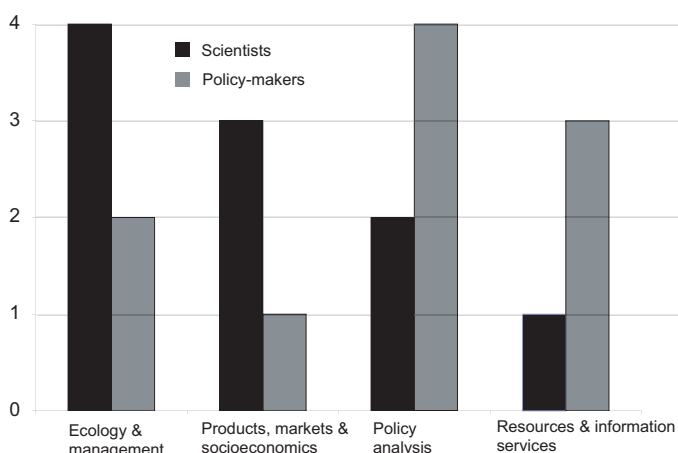
## Agree on the solutions

The policy-makers and scientists were asked for recommendations on how to improve communication at the science-policy interface. Both groups agreed on the main changes that are needed:

- Scientific information should be presented in more concise formats and be easier to comprehend.
- Scientists should be involved more in policy advisory meetings
- Networking between scientists and policy-makers should be increased.

*Read more in an article by Gerben Janse in EFI News no. 2, 2006 (download from [www.efi.fi](http://www.efi.fi))*

*Scientists' and policy makers' rankings of the importance of topics for policy making. 1 = least important, 4 = most important*



*Photo: Melker Dahlstrand*



*Photo: Skogforsk*



## The Council of the European Union agrees on Forest Action Plan

The ministers of agriculture in the EU have reached agreement on the main objectives for the new Forest Action Plan to cover the period 2007–2010. The main points are:

- Forest research needs to be strengthened
- Non-commercial products from the forest such as environmental services must be identified and evaluated
- Forests can play an important role in reducing the effects of climate change
- Losses of biodiversity must be halted or reduced
- Trees should be promoted as valuable, renewable resources
- Forest and other biofuel resources should be developed as energy sources

- The forests should be used to avoid drought and to maintain a better water balance
- Trees should also be used to improve the quality of life in urban environments.

*Source: The Ministry of Agriculture and Food, Norway. (<http://odin.dep.no/lmd/norsk/tema/skog>)*

*The overall objective of the EU Forest Action Plan is to support and enhance sustainable forest management and the multifunctional role of forests.*

Photo: Martin Werner



### Conferences and workshops

#### Forest operation researchers met in Tartu, Estonia

“Forest operations in front of new challenges” was the theme of an NSR (Nordic Forest Operations Council) conference in Tartu, Estonia, in September 2006. Participants came from Finland, Sweden, Denmark, Norway, Estonia, Latvia and South Africa.

“There were many high-quality presentations covering various research areas”, says Professor Peeter Muiste of the Estonian organisers. If I have to select one theme, I would mention future trends in forest technologies. Papers on this theme were presented by Antti Ala-Fossi, Antti Asikainen and Dominik Röser, who described possible developments in forest technology up to 2020.

In addition, Björn Löfgren discussed the automation of forest machines, and Esko Mikkonen considered precision forestry in Nordic logging.

Selected presentations can be downloaded from [www.eau.ee/~nsr/](http://www.eau.ee/~nsr/).

Read more about NSR at [www.skogforsk.no/nsr](http://www.skogforsk.no/nsr)

#### Remote sensing discussed in Sweden

The ForestSat 2005 workshop attracted more than 100 participants from 22 countries, mainly from Europe and North America. The workshop was supported by SNS.

From the results presented at the meeting, it was clear that satellite data can provide useful overviews of forest resources and changes, as well as improving sample plot survey-based statistics. However, to obtain more accurate estimates of stand level parameters than those provided by traditional aerial photographs, other methods are needed.

The most promising techniques presented were laser scanning and radar techniques like VHF SAR and X-band InSAR.

The scientific presentations are collected in three volumes of proceedings which can be freely downloaded from the bookshop at the website of the Swedish Forest Agency: [www.svo.se/forlag/rapport.asp?boktyp=rappor](http://www.svo.se/forlag/rapport.asp?boktyp=rappor), look for reports 8a, 8b and 8c, 2005.

Contact: Professor Håkan Olsson, [hakan.olsson@resgeom.slu.se](mailto:hakan.olsson@resgeom.slu.se)

#### Disturbance experts gathered in Tromsø, Norway

An SNS network workshop on Forest Disturbance in Tromsø, Northern Norway, was jointly organised, in September 2006, by the Estonian Agricultural University and Bioforsk in Norway. Participants came from Lithuania, Latvia, Sweden, France, Estonia, Russia, Finland, Canada, Norway and the Netherlands.

The network “Natural disturbance dynamics analysis for forest ecosystem management” was established in 2002 with the assistance of grants from SNS. The main aim is to gain knowledge regarding natural disturbance regimes and forest ecosystem processes. The network’s activities are focused on environmentally friendly forest management.

The network has held five workshops/conferences. One of them resulted in a special issue (supplement) of Scandinavian Journal of Forest Research (Supplement 6, 2005).

More information can be obtained from the network coordinator Kalev Jõgiste, [kalev.jogiste@emu.ee](mailto:kalev.jogiste@emu.ee)

## Shortcuts

### Call for nominations for Schweighofer Prize 2007

In June 2007 the Schweighofer Prize, the third European Innovation Award for Forestry, Wood Technology and Wood Products will be presented.

“Our aim is to encourage innovative people and institutions to contribute to the sustainable development and competitiveness of the European Forest Based Sector”, says the founder of the prize, the Austrian Schweighofer family.

The total prize money of € 300.000 is divided amongst a main prize and four other prizes for innovations related

to “Forestry”, “Wood Technology”, “Wood Products” or “Cooperation and Education”.

The deadline for nominations for the main prize, which can be submitted by any third party (individuals, groups of individuals or organisations) is January 31, 2007.

See News and Views No. 4, 2005 for an article about Tony Pizzi, who received one of the prizes in 2005 for his work on wood welding.

*More information:*  
[www.schweighofer-prize.org](http://www.schweighofer-prize.org)

### New chairman of PEFC

“Having established what is presently the world’s largest resource of certified wood raw material, PEFC will continue to drive for increased certification, but will now also increase its focus on promoting forest certification in the market place, encouraging companies and users of certified products to do the same,” said the newly elected Chairman of the PEFC Council, Michael Clark. Michael Clark was elected for a three-year period by the PEFC Council General Assembly, which met in Oregon in October 2006.

The area of forests covered by forest certification, according to PEFC (Programme for the Endorsement of Forest Certification Schemes), has increased from 50 million hectares two years ago to 200 million hectares today. The availability of certified wood has increased dramatically and now accounts for 25% of the world’s industrial round wood production, the overwhelming majority of it PEFC-certified.

*Source: PEFC News No. 34, 2006 ([www.pefc.org](http://www.pefc.org))*

## Conferences and workshops

### Forest economists conferred in Uppsala

The Scandinavian Society of Forest Economics and the SNS-supported network “Industrial and market perspectives on the forest sector” held a joint conference in May 2006 in Uppsala, Sweden.

About 70 participants from all of the Nordic countries, Estonia and Latvia took part. Invited speakers gave five presentations with the following titles during the conference:

- Trade flows, unit prices and roundwood market integration in Northern Europe, by Jari Viitanen and others
- Timber trade in the Baltic countries, by Meelis Teder

- The Estonian forest industry, by Henns Thurems

- Locating feasible routes from forest management units to the nearest road in the Novgorod Region of Russia, by Bruce Michie

- Promoting reforestation by different policy tools in Estonia, by Paavo Kaimre and others.

All presentations will be published in *Scandinavian Forest Economics*, No. 41, 2006.

*Contact the network coordinator, Anders Q Nyruud, [anders.qvale.nyrud@umb.no](mailto:anders.qvale.nyrud@umb.no)*

### Nordic plant growers assembled in Denmark

A two-day meeting in Taulov, Denmark, with the theme “Creativity in Future Forest Regeneration” attracted plant growers, researchers and representatives of authorities from all of the Nordic countries. The meeting was arranged by the NSFP (Nordiska skogsbrukets frö- och plantråd), a forestry network for seed and plant topics under the auspices of the Nordic council.

The meeting focused on the challenges for regeneration raised by globalisation, the internal market of the EU, outsourcing and climate change.

*The creative presentations from the meeting can be downloaded from [www.nordgen.org/nsfp](http://www.nordgen.org/nsfp).*

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