

Improving Conifer Timber Quality Steering Group

Northern Research Station, Roslin
Monday 21 November, 2005

Attendees:	Colin Forsyth	- PB Forestry Lands (Chair)
	Barry Gardiner	- Forest Research, Timber Properties Programme
	Bob Selmes	- Forestry Commission, Corporate Forestry & Support
	Roger Coppock	- Scottish Executive, Forest Industries Cluster
	Gordon Callendar	- Callendar Sawmills
	Vaughan Hammond	- Tilhill Forestry Ltd
	Ian Irwin	- Northern Ireland Forest Service
	Richard Ogilvy	- Christie Elite Nurseries Ltd
	Steve Lee	- Forest Research, Conifer Breeding Programme
	John Morgan	- Forest Enterprise, Plant & Seed
	Geoff Cooper	- BRE
	Graham Gill	- Forest Enterprise, FDM Kielder
	Jim Dewar	- Forestry Commission, Corporate Forestry & Support
	David Leslie	- Scottish Woodlands
	Chris Jones	- Forestry Commission Wales
	Madge Holmes	- Forest Research, Administration (minutes)

Apologies were received from Philip Turner, Centre for Timber Engineering; James Pendlebury, Forestry Commission Scotland; Andrew Cameron, University of Aberdeen; Christine Cahalan, University of Bangor; and Ed Suttie, BRE for whom Geoff Cooper was acting as substitute.

1. Welcome and Introduction

Colin Forsyth welcomed everyone to the first meeting of the Improving Conifer Timber Quality steering group and asked that everyone briefly introduce themselves.

2. Objectives of steering group – Colin Forsyth

The remit of the Improving Conifer Timber Quality steering group is to:

- provide strategic direction and integration of purpose to the Forest Research programmes (in conifer breeding and timber properties);
- provide an industry perspective; and
- encourage a two-way flow of information between industry and researchers.

In doing this the Improving Conifer Timber Quality steering group will:

- promote better coordination and collaboration between various research programmes involved in a bid to improve the competitiveness of British grown conifers.

3. Outputs from the previous timber quality steering group – Barry Gardiner

The previous timber quality steering group was set up in early 1998 to provide input into the quality of standing trees. Membership was from the FC, SFT, Scottish Woodlands, Tilhill, UKFPA, FE and Bangor University. The timber quality steering group allowed participants to report back to industry on what FR were doing and provide feedback to steer future work. The previous timber quality steering group ran until August 2004. A new steering group however would allow interested parties to become involved in co-ordinating research, particularly with collaborations in the UK (BRE, NI Forest Service).

Discussion highlighted the importance genetics is now playing in choosing planting stock and screening for wood quality.

4. Where is the timber quality programme at today? Options for the future – Barry Gardiner

Barry Gardiner's presentation provided information on the Timber Quality Programme, the programme's partnerships and details of programme projects. Recent projects are:

- Stem straightness in Sitka spruce;
- Timber quality model for Sitka spruce;
- Wind exposure effects on timber quality;
- Effect of windblow on timber quality;
- Lodgepole pine provenances;
- EU Compression Wood project; and
- Review of the impact of conversion to Continuous Cover Forestry on timber quality.

The presentation included details on the project results and methods used.

Options for the future include the need to integrate growth, timber, sawing and batten performance models and to expand to include other conifers (e.g. Scots pine, Douglas fir) and broadleaves (e.g. oak, ash, birch). Barry expressed that it is essential to continue collaboration with industry and other GB and European universities and institutes and this is seen as becoming increasingly important in the future. It is also important that FR continue to promote technology transfer through seminars, workshops, Information Notes, F&BT articles and computer models.

Further information is available in a number of reports including ones on the Stem Straightness Surveys, the Effect of Wind Exposure and Timber Quality and a review paper on Effects of Transformation to Continuous Cover Forestry. An Information Note is being written up at present on the Timber Quality of Improved Sitka spruce.

5. Where is conifer breeding at today? Options for the future – Steve Lee

Steve Lee's presentation gave information on the Sitka spruce, Scots pine, Corsican pine and Hybrid larch breeding programmes. Improved planting stock from seed orchards exists for all the above species but vegetative propagation material is only available for Sitka spruce .

The objective of the breeding programme has always been to breed timber suitable for the construction industry by improving the next generation of forests relative to the previous one and selecting trees which grow straighter, are stronger, have finer branched trees and a good growth rate.

Sitka breeding is now 75% through a programme of making crosses between parents already selected as superior based on the first generation of progeny test results. 25% of this programme has already been planted; 50% is in store ready to be planted as finances allow; and the other 25% have yet to be created.

As traditional progeny tests are expensive to establish, maintain, assess and take a long time to yield results FR aim to get more targeted gains to the forest faster by introducing new technologies such as somatic embryogenesis and cryopreservation for clonal forestry and marker aided selection for very early screening.

Options for the future include:

- continue carrying out and planting the full-sib families in field tests
- push forward with Marker Aided Selection;
- push forward with clonal forestry – develop the techniques required and establish clonal tests;
- demonstrate the uniformity of clonal forestry;
- do nothing new – just screen the best full-sib families from existing tests.

Discussion centred around understanding genes better. Some people are showing an interest in finding markers for a *Fomes* resistance gene and in developing biotechnology systems for Douglas fir.

6. Timber quality and sawn timber markets – David Leslie

David Leslie, who will be moving next autumn to James Jones & Sons Ltd began his presentation by expressing the issues of marketing and the sawmills. He explained the present situation of:-

- standing sales;
- roadside logs sales (limited);
- delivered sales;
- assessing stands (emphasised the importance of spacing).

Sawmills are experiencing a decline in Sitka spruce material. At the same time there is also a developing demand for smaller diameter (<50 cm) 4.8 m logs.

There are issues over kilning and differential moisture content. More control is needed to constrain but of course this all costs more money. There are also issues over taper and conversion losses associated with larger knots.

The market for oversize logs is declining and as there is more material available the price is coming down. There are no easy clear solutions but thinning can be used in an attempt to prevent it from worsening. New Zealand sawmills are using scanners to assess roundwood grading (acoustic technology) and British sawmills will hopefully adopt this method in the future.

Early forecasting and planning is required to prevent the red log situation from worsening. To do this a strategic link is required. As everyone is grading to C16 at present there is a disincentive for sawmills to grade to C24 which will not bring in any more money. One suggestion made was to move away from C16 and C24 and grade towards something in the middle e.g. C18 (like the French).

Discussion centred around choosing another species to study. Steve Lee explained that we can pick from large species trials and that climate change might push us in a particular direction.

In reply to a question on the impact of breeding taper (which is crucial for conversion efficiency) Barry Gardiner explained Forest Research had data on taper from recent work at the Kershope study involving improved progenies which could be used (to be published soon). No measurements of taper were made in the breeding programme.

7. Issues for the Group to consider – Colin Forsyth

It was decided that it would be advantageous if the steering group arrange for some sort of on-line chat room to be set up.

Potential issues for discussion at the next meeting will be:

- Impact of climate change
- Causes and effect of leader snap
- Conversion of straightness scores to green/red log outturn
- The importance of density in defining strength
- The importance of nurture versus nature
- Acoustic tools
- The accuracy of future timber quality predictions
- Impact of spacing
- Timber quality of mixtures
- Quality requirements for the industry.

8. Next meeting

The next meeting will be held on Wednesday, 24th May 2006 and will comprise of a sawmill visit and a business meeting at a venue to be arranged.

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Madge Holmes
22 December 2005