

# Fitness for purpose, wood quality and the forestry value chain

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Recent events relating to wood product performance have reinforced that the forestry sector is indeed a value chain. Decisions made at any point of the forestry value chain can have an impact at every other point along the chain. Decisions about site, silviculture and genetics will have an impact on harvest volume and log and wood properties. Subsequent segregation and manufacturing decisions impact on end-product performance and value.

Value is ultimately determined by wood products meeting performance requirements in the end-product markets. These performance requirements relate to such characteristics as strength, stiffness, stability, appearance and durability.

There are a number of requirements for the forestry value chain to operate successfully:

1. Product performance requirements must be clearly defined for different end-uses;
2. Wood manufacturers need to process and grade products to meet these requirements;
3. Forest growers need to identify and segregate stands and logs on the basis of log and wood properties; and
4. Forest growers need to evaluate decisions about tree breeding and genetic deployment, species choice, the selection of location and site, and forest management in terms of their impact on log and wood properties as well as volume.

The articles in this special edition deal with all four points. Ron Eddy covers the leaky building issue. There are obvious questions about the standard-setting process and the need, supported by the NZIF in its recent submission on the Weathertightness of Buildings, for a "belt and braces" approach that includes the treatment of timber to ensure long-term durability for what is most people's greatest asset.

One of the related issues here is that CCA preservative treatment is likely to disappear from the armoury of the wood preservative treatment industry. Jeanette Drysdale describes how its use is being restricted both by regulatory change and by market demand.

Guy Cavanagh and Justin Ralston highlight the need for timber producers to verify the strength and stiffness properties of framing timber. Although there are standards for both machine stress grading and visual stress grading, with visual grading there is currently no requirement for the manufacturer to provide any assurance on the performance and engineering properties of the timber sold as No 1 Framing.

Wayne Miller, in his overview of wood quality issues focuses on solid wood – particularly the requirements of sawn timber for appearance uses. He provides the motivation for the Wood Quality Initiative (WQI) – a research consortium that is currently being created with

funding from forest companies, research providers and the Government. The WQI has goals of

- Developing in-forest and in-mill wood quality segregation tools to enable precise matching of wood quality to the requirements of specific market end-uses; and
- Improving our collective knowledge of the factors affecting wood quality to allow the production of future trees and forests with superior wood quality characteristics.

Lessons for the WQI can be learnt from the Value Recovery Project – an industry-funded project carried out by Forest Research from 1995 to 1998. Dave Cown reports on the highlights of this project and also observes some of the challenges faced in getting industry to work together collectively.

The industry has come a long way over the last 20 years in terms of resource description and log segregation. When log grades were proposed in 1983, as a means of dealing with the variability of the size and quality of "new crop" radiata pine, there was vigorous opposition by many sawmillers who were used to a diet of ungraded "run-of-bush" logs. Today industry not only segregates by log grades based on size and external log quality features but is also starting to segregate on the basis of internal quality features such as stiffness and pruned quality. This is described in articles by Graeme Young, Mike Andrews and Jim Park.

The final three articles deal with some aspects of site, genetics and silviculture and their impact on wood quality. Piers Maclaren provides a review of the internal wood quality of radiata pine on farm sites. Charles Sorensson gives a clonal forester's perspective on how genetic improvement can increase the value of the crop by the customisation of radiata pine for both performance and uniformity of performance. Finally Euan Mason suggests that we need a new approach to silviculture and to get back to basics if we are to fundamentally improve the quality of radiata pine.

So there is both bad news and good news in this edition of the *Journal*. The bad news is that, in 2002, we are seeing problems with wood durability and the performance of wood in use for which technical solutions already exist. The good news is that we are at last seeing signs of standards being developed that will provide assurance that the performance of wood will meet the requirements of the consumer. We are also seeing industry seeking a greater understanding of wood quality issues with the launch of the WQI and other ongoing research and development efforts. Everyone in the plantation forestry sector should welcome these measures. Our futures are all linked in the forestry value chain.