



forestry | Denis Hocking

Tortured progress for eucalypt pundits

Perceptive readers of long standing may be aware of my penchant for eucalypts. Strangely, I am not the only victim of this affliction in New Zealand and every now and again there is a gathering of the faithful to discuss experiences and prospects.

Last month's gathering – 'Revisiting Eucalypts 2009', organised by Professor John Walker and others at the Canterbury Forestry School – was undoubtedly one of the best.

This time discussion went well beyond species selection, siting and insect pest problems, and into wood properties and what we can do about them (the proceedings have already been published by the [University of Canterbury](#)).

Those familiar with the Forestry School, and John Walker in particular, will not be surprised by this news, as they have been long-time, and in my opinion well-justified, critics of the radiata pine industry's tendency to ignore wood quality.

I might add that since Canterbury probably grows fewer timber eucalypts than any other region, perhaps they have escaped the obsession with species trials and been able to focus on wood quality

and end uses.

Eucalypts have had a long, but very chequered history as timber trees in NZ. They have been grown in this country for 150 years, have produced some superb timber and a lot of firewood, but as Barry Poole pointed out in his introductory review – 'What Have We learned About Eucalypts?' – the only significant resource ever created in NZ has been 20,000-30,000ha grown for short fibre pulp.

This has been mainly *E. nitens*, but also includes some *E. fastigata* and *E. regnans*.

There has never been more than a few thousand hectares of eucalypts grown for solid wood, mostly by farm foresters using a diversity of species in a wide range of environments and with a paucity of management and follow-up silviculture.

The quality of some of the timber produced is a tribute to the virtues of this diverse genus.

Note though, that all other southern hemisphere forestry nations have significant to very substantial plantation, eucalypt estates. NZ is the exception in this regard.

Most of our farm forestry efforts with eucalypts have tended to focus on matching species with

good growth and form to the sites available. The more enlightened have focused on groups and species with recognised good timber properties.

Thus, with the stringybarks and some allied species, you can be fairly confident that wood properties will be good, regardless of pedigree.

But eucalypts have a number of wood property issues, most notably growth stresses which complicate the sawing of logs, especially small logs, and collapse, which can seriously interfere with drying.

Then there is the inevitable variability in stiffness, hardness, durability and wood chemistry that occurs in most species. Wood chemistry is especially important for pulping and it was interesting to see how variable the top, hybrid, pulp clones used in Brazil really are.

There were some good presentations at the workshop on assessing and selecting for improved wood properties, in particular quick, cheap methods for screening large numbers of individual trees were described by Shakti Chauhan from the School of Forestry.

The Australians are doing some

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sophisticated genetic and breeding work on certain species, not necessarily the species that are of greatest interest to us though, and there were also some very useful accounts of how environment and silviculture affect tree performance and wood properties.

This, in turn, led on to some innovative systems for sawing small diameter, eucalypt logs developed by another NZ Farm Forestry Association eucalypt enthusiast, Dean Satchell.

John Walker pointed out that hardwoods have a big advantage over softwoods for short rotation forestry. Their inherent wood properties in the early growth rings, as assessed by microfibril angle, are much better than softwoods which tend to have high microfibril angle, low stiffness wood in the first 10-12 growth rings.

There is no doubting the commercial appeal of shortening rotations, but it is also well recognised that the larger the diameter the easier the milling for eucalypt logs, especially for species and trees with major growth stress problems.

The technology is certainly
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available for processing smaller/ younger logs, thus the Tasmanians are successfully milling 10-year-old *E. nitens*. But until we see the necessary investment in processing technology, I do feel more confident with older, larger diameter logs that current sawmillers can tackle with existing equipment.

If we can develop the market and demand, hopefully that investment for younger logs will follow.

So when we put together all our past experience, good and bad, we do know a fair bit about species, siting, processing and utilisation of eucalypts in NZ, although the information is not as accessible as it might be and there is still a lot of unjustified prejudice against, and ignorance about, eucalypts.

But what we are stuck with is a classic chicken and egg situation - we need a visible market to encourage growers but investment in processing, marketing and utilisation will not happen until there is a significant resource.

One group which has done considerable work identifying niche markets and gathered useful support, is the NZ Dryland Forestry Initiative (NZDFI), based in

Marlborough and very ably led by Paul Millen.

This initiative has been built around naturally durable timbers for vineyard posts, but has also noted the supply and price of power pole cross arms. Copper chrome arsenate (Tanalith) treated posts are used in vast numbers in vineyards and problems disposing of large numbers of broken posts, plus the perception of poison infiltrating premium wines, means an industry that is very receptive to high strength, naturally durable alternatives.

Non-wood alternatives for vineyard posts all leave much to be desired, and the same is true for power pole cross arms.

The problem today is lack of supply of suitable timbers and Paul Millen described the work the NZDFI is doing identifying and trialing a group of ground durable eucalypts suited to Marlborough conditions.

However, such end uses may not be the highest value market for good quality eucalypts and there is a case for aiming top timber at the flooring or furniture market and using shorter, lower quality logs for posts. The one essential requirement will be for adequate heartwood.

It was also noted by several speakers that eucalypts offer big opportunities for biofuel, carbon sequestration and of course pulp, the major end use globally for plantation eucalypts, though not necessarily the highest value end use. And they are even prolific nectar producers, as most bee keepers will attest.

So in my opinion this workshop was a very useful step forward.

John Walker and his colleagues are to be congratulated. Now we will have to see how many people noticed and how many can be stirred into action.