

Understanding blackwood (*Acacia melanoxylon*) markets; an opportunity for improving blackwood plantation returns

Ian Nicholas¹

Abstract

The most important wood characteristic recognised by processors and manufacturers of blackwood (*Acacia melanoxylon*) in Australia and New Zealand was colour and the most important issue was supply of logs and timber. Most of the trade in blackwood for high quality furniture or cabinetry is based on select or clear grades of timber, often in short lengths. This provides an opportunity for improving plantation returns through silviculture by producing long clear lengths of defect free heartwood timber.

The Australasian blackwood market is based on clear heartwood timber production. Markets for knotty material above the pruned butt log, such as flooring, have been identified as new markets with potential.

To maximise future value from blackwood stands, blackwood managers' regimes should have the objective to maximise defect free heartwood. The current recommended regime is to have a stand with 200 stems/ha, pruned to 6 m with form pruning, clearwood pruning and thinning completed by age 10 years. A rotation length of 35 years is expected from fertile sites in New Zealand. Further analysis is needed to evaluate potential rotation lengths in Australia.

Evaluation of regime trials at age 18 years on five North Island sites in New Zealand show that wood quality is little affected by silviculture. Fast growing sites/regimes produce denser timber and a lowering of heartwood percentage, but have little influence on colour. Site had some influence on wood colour and other characteristics, but there was wide variation in the characteristics evaluated.

The poor conversion rates to timber from poor quality logs from native stands in Australia or untended stands in New Zealand provides an opportunity for premium prices from pruned good form plantation logs in the future. Therefore plantation management should be based on clearwood heartwood production for high quality furniture from well managed plantation grown blackwood.

Background

Blackwood (*Acacia melanoxylon* R. Br.) occurs naturally in Australia from Tasmania to Queensland and South Australia. Timber from the north west of Tasmania has dominated the market for many years (Britton, 2004). In Victoria a small steady market supply used to come from the Otway ranges, until this resource was no longer available for logging due to the creation of the Great Otway National Park (Featherston 2006). A study of a number of Victorian blackwood processors and manufacturers concluded that blackwood had a solid market niche in Victoria (Lambert 2004). Internationally New Zealand and South Africa have established exotic plantations, and more recently, Chile and now China are evaluating the species for exotic plantations.

New Zealand has over 3,000 ha established in blackwood and it is suggested that an annual cut of 26,000m³ is possible once this resource matures (Nicholas 2002). Blackwood imported into New Zealand is priced at \$3,300/m³, one of the highest priced hardwoods being imported. Domestic prices are approximately \$3,600/m³ (clear two faces), but little effort is being made to identify a wide range of markets to optimise the material being processed.

Blackwood is developing a niche market in New Zealand, with some processors and furniture makers specialising in blackwood products (Nicholas 2006). However the New Zealand market is still young and small, but could develop into a stronger position if more, higher value end uses could be identified and developed.

To help achieve this the author was awarded a Chavasse Travel award by the New Zealand Institute of Forestry to assess the Australian blackwood market and help identify how New Zealand could develop better utilisation of logs and maximise value from its limited resource. From the market information from Australia and New Zealand, combined with the experience of blackwood management in New Zealand, recommendations are made in this paper on the preferred options for managing blackwood in plantations to maximise potential revenues.

Study Tour Objective

The objective of the study tour was to evaluate blackwood markets in Australia and New Zealand, and if possible identify innovative use of all grades of blackwood (Nicholas 2006).

¹ *Ensis genetics, Rotorua, New Zealand*

Study Tour summary

Blackwood markets were assessed in Tasmania, Victoria, Sydney and New Zealand (Nicholas 2006). Individual processors and manufacturers were interviewed to help determine quality, resource supply, pricing and marketing issues and what markets they saw for non-clear blackwood. A total of 47 formal interviews were conducted with several other discussions with those involved in the industry, 15, 2, 21, and 9 interviews in Tasmania, NSW, Victoria and New Zealand were conducted respectively. Several informal interviews/discussions were also held with those involved in the industry.

The blackwood market in Australia handles approximately 14,000 m³ in log form and approximately 4,000 m³ sawn timber per year. Most of this is sourced from Tasmania, where it is processed into sawn timber and exported to mainland Australia or China. In comparison the New Zealand market is very small with only approximately 85 m³/yr of sawn timber processed (Nicholas 2006). The interviewed processors account for approximately 72% and 130% of the log and sawn timber markets respectively. Because of trading in timber the total sawn timber handled by people surveyed is greater than the actual sawn amount. Most of the trade in blackwood is for select or clear timber, often in short lengths, which creates problems for many users.

The most important blackwood wood characteristic recognised by those interviewed was wood colour with 42% nominating this attribute, followed by the quality of the timber (31%). For current issues the most important factor was supply (46%). This was still the most important issue for the future, increasing to 60% rating.

The Australian blackwood market has shrunk over the last decade losing popularity as the main kitchen joinery timber of choice. While in the 1980s blackwood for kitchen joinery was the preferred option, blackwood is now second fiddle to laminates. To compensate for this loss of market and to provide an outlet for non-clear timbers a market has been set up by Brittons and other traders with China who can process the knotty timber into clear lengths at a cheaper rate than Australia. Approximately 400 m³ has been sent to China in the last five years. Blackwood is now coming back into Australia as furniture for sale in some major retail stores. The upside of the new Asian blackwood trade is that blackwood is maintaining a position or profile in the market with an increase in demand for custom made blackwood furniture (T. Davis pers. comm. 2006).

The loss of furniture makers in Australia and New Zealand has been influenced by the effect of cheaper Asian imports from a range of timbers. The upside of the new Asian blackwood trade is that blackwood is maintaining a position or profile in the market.

Australia and New Zealand have similar approaches to marketing blackwood. They both have a similar price for clear grades, lack a consistent use of knotty grade boards, and are exploring export opportunities. Both Australians and New Zealanders see potential in marketing blackwood as a flooring material using knotty and clean grades. The investigation of innovative uses of poorer grades showed that although small clear lengths were used for craft material, this was not recognised as a viable market by processors in Australia or New Zealand.

Conclusions from the study tour were that the greatest new opportunity in blackwood marketing in both countries is to develop a range of flooring products. New Zealand has an opportunity to supply quality timber to Australia as New Zealand's resource matures, but the priority should be to establish a stronger market following in New Zealand before exporting is considered. Blackwood manufacturers in both countries need to raise the profile of blackwood above commodity level into a well designed elite timber market (Nicholas 2006).

Discussion

It is very clear that Tasmania dominates the Australian blackwood market with the key players in this the Britton group of companies (Britton Timbers) operating out of Smithton, Tasmania, Sydney, New South Wales and

Table 1: Current recommended blackwood regime (Hay et al., 2005).

Age (years)	Prune at height: (m)	Stocking (stems/ha)	Pruning operation	Thin to: (stems/ha)
0		1111		
3			Form prune 75% of stems.	Remove malformed stems
4	3.8	600	Form prune	
5	5.5	600	Form prune	
6	8.0	600	Prune to 2.5 m (or up to half height)	600
7	9	400	Form prune	
8	10	400	Prune to 4.0m	400
9	11	200	Form prune	
10	13	200	Prune to 6.0m	200

Melbourne, Victoria. Whereas previously there was a Victorian supply from the Otway ranges, most of the Victorian supply is now imported from Tasmania.

The blackwood market is supplied from natural forests with almost no supply from plantation material. This is different from New Zealand where there is a developing niche market around plantation blackwood.

Another key difference between the two countries is log prices. New Zealand plantation logs are fetching higher prices (greater than NZ\$300/m³ at mill), than natural forest logs in Tasmania, which start at AUD\$70 stumpage royalty for the better grades, although higher prices are often attained.

The dilemma of Asian imports has created problems in the Australian furniture market (Halkett, 2006), but some pathways forward have been identified. It has been suggested to move away from a price driven mentality and competing at the bottom end of the market or commodity level, and instead looking for innovative design and furniture manufacturing solutions to compete in high-end specialist markets. There are examples of this niche marketing in Sydney where a dining room suite for AUD\$42,000 and an executive desk for AUD\$22,000 were reported (Nicholas 2006). This attitude is prevalent in the New Zealand blackwood market where manufacturers are endeavouring to place their product in niche markets at the top end of the range, but are struggling to get past the New Zealander's fixation with Rimu. This target of small specialist markets is also a pragmatic attitude as New Zealand does not have a resource for large scale manufacturing or export.

A small specialist market exists in Australia for fiddleback material used in guitar making, but there is no information on the silvicultural aspects of this.

While colour is seen as the major issue giving blackwood its market strength, the colour variation between trees within stands means that it is not seen as an issue in forest management.

The timber demand for blackwood is strongly based on clearwood markets for heartwood, little recognition is given to sawn timber with knots, it was even suggested that the best use for this material was to feed boilers! The majority of timber supplied to the market is in short clear lengths which creates problems for furniture makers. A typical packet of timber has the most boards in lengths from 0.8 to 1 m in length (Philip Wood pers comm., 2005). Australia also uses material with sapwood, but this has little following in New Zealand.

Concerns expressed by Australian blackwood manufacturers that plantation material would be different from natural forest material has been allayed. The recent work in Tasmania (Bradbury 2005, 2006), shows no major differences in timber characteristics from young swamp



Products made with Tasmanian blackwood

forest, fenced regeneration or plantation sourced logs. Nicholas *et al.* (1994) reported on variation in 9 year old plantation material, but no cause for concern with plantation grown blackwood. A detailed evaluation of wood characteristics from five New Zealand 18 year old regime trials showed that silviculture does not significantly affect wood quality (Nicholas *et al.* 2006a). Fast growing sites produce denser timber and a lowering of heartwood percentage, but has little influence on colour. Site had some influence on wood colour and other characteristics, but there was wide variation in the characteristics evaluated.

Preliminary analysis of heartwood volumes across the five sites at age 18 years show a distinct difference based on growth rate. The highest individual tree heartwood value is from plots with lower stockings and reasonable butt log length. While lower stockings do not give the highest value for butt log length they give higher DBH values, thus total heartwood volume per hectare is a compromise between form, diameter and stocking.

While the higher stocked stands give a higher total heartwood volume per hectare, the market requires clear heartwood, so that the larger logs are preferred rather than just total heartwood volume.

Recent analysis supports the regimes aimed for 200 stems/ha final crop stocking (Nicholas and Brown, 2002, Nicholas *et al.* 2001). This regime has also been supported by wood quality and recoverable yields based on mid-rotation data analysis (Nicholas *et al.* 2006a, 2006b).

Given the experiences observed in New Zealand and Australia, there is almost no justification in growing blackwood in mixtures, blackwood suppression is more common than well-formed stands.

Regimes to meet market signals

Given the market signals, how can the blackwood plantation manager optimise his management to meet market requirements? Silviculture should be based on producing the maximum volume of clear heartwood.

New Zealand experience suggests that a final crop stocking of 200 stems/ha with form pruning to produce a 6m butt log is the preferred blackwood regime, Table 1, (Hay *et al.* 2005), (Nicholas and Brown, 2002).

Rotation lengths of approximately 35 years are suggested for fertile sheltered sites in New Zealand. More data evaluation is required on Australian plantations to determine optimum rotation lengths.

Conclusion

Blackwood has a strong market profile in Australia based on timber from natural stands, a blackwood niche market is developing in New Zealand, based on plantation-grown blackwood. The market is largely based on clearwood or defect-free timber. Regimes to maximise clearwood are based on plantation blackwood with form pruning and clearwood pruning combined with thinning to a final crop stocking of 200 stems/ha. On fertile sheltered sites rotation lengths of approximately 35 years are anticipated in New Zealand. Further analysis is required for Australian sites to determine optimum rotation lengths in Australia.

Blackwood plantation managers in both Australia and New Zealand have an opportunity to improve blackwood plantation returns by concentrating on clearwood heartwood production for high quality furniture from well managed plantation grown blackwood.

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