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VENEER RECOVERIES FROM REGROWTH JARRAH

G.K. Brennan

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W.U.R.C. Technical Report no. 10

Limited Distribution

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SUMMARY

A trial of small regrowth jarrah (*Eucalyptus marginata* Donn ex Sm.) produced dried sliced veneer recoveries of 8.5 per cent of log volume and 19.0 per cent of flitch volume. These recoveries are low compared to the average recoveries from slicing mature jarrah.

INTRODUCTION

Any utilisation for the production of a high quality/high value product has obvious economic benefits. The economic commercial production of veneer from small regrowth jarrah logs would be a great advantage to both the grower and processer because veneer logs attract higher royalties than other classes of log, and the revenue would help offset the cost of silvicultural operations. Inability to utilise these logs would be a major constraint on the application of intensive silviculture in the jarrah forest, particularly in forest stands where heavy thinning is desirable to increase water and wood yield.

However, the recovery of veneer is strongly related to log size and quality. The present trial was to assess the graded recoveries of sliced veneers from small regrowth jarrah logs from two different locations in the Northern jarrah forest, and the possibility of using the product for plywood box beams and doors.

METHODS

The logs came from two thinned regrowth stands, the Inglehope research plots in Dwellingup, and Inglehope Block (adjacent to the South Dandalup Dam). Ten logs (1.7 m^3) from the Inglehope research plots were sawn fresh to produce veneer flitches, and 18 logs (3.1 m^3) from the Inglehope Block were sawn into flitches after 10 months stockpiling under water sprays. Logs capable of producing a minimum flitch of 150 mm x 150 mm x 3.0 m were selected, and only straight logs above 22 cm small end diameter under bark (s.e.d.u.b.) were suitable. The mean dimensions of the logs used for flitch preparation were: Inglehope plots - 250 mm (s.e.d.u.b.), 3.0 m length, Inglehope Block - 260 mm (s.e.d.u.b.), 3.1 m length. Inadequate numbers of this log size from the research plots restricted the number of flitches that could be prepared in the sawn fresh treatment.

The flitches were prepared at the Wood Utilisation Research Centre (WURC) at Harvey. They were produced by removing two wings on a twin edger with overhead beam feed, then cutting the flitch to the required dimension on a vertical bandsaw. No wane was allowed, but sapwood was acceptable and all flitches had the heart included. The mean dimensions of the flitches were:

Inglehope plots - 159 mm x 155 mm x 3.0 m
Inglehope Block - 166 mm x 152 mm x 2.9 m.

Following milling, flitches were clearly identified, and gangnail plates hammered on the ends. The flitches were stored in a water tank for two weeks to minimise surface checking and end splitting, and then wrapped in plastic and delivered to Wesfi's veneer factory in Perth.

At the Wesfi factory, logs were pre-steamed, inspected for flitch quality and end splits docked. Veneers of 0.6 mm thickness were sliced from both sides, discarding any brittle heart. Green veneer recovery was recorded, and flitch identification written on the veneer before drying and grading. Grading was to either a back or face quality using Wesfi's standards.

Dried veneer recovery figures for each log were estimated from the average veneer recovery from all flitches because the identification was lost during drying. The widths produced in this trial were mainly 100 mm, with some 80 mm, 120 mm, 130 mm and 140 mm material.

RESULTS AND DISCUSSION

Similar recoveries of veneers came from flitches from logs sawn fresh from the forest or prepared after 10 months storage in stockpiles under water sprays, in both green and dried veneer (Table 1). The mean dried veneer recoveries are given but not the standard deviations, because as stated in the Methods, the identification numbers relating veneers to flitch number were lost during the drying process. The overall veneer recoveries from sawn fresh and stockpiled logs were 8.6 per cent and 8.5 per cent respectively, which is a very low recovery.

Table 1
Veneer recovery from flitches from jarrah logs either sawn fresh or stockpiled under water sprays for 10 months

Treatment	No Flitches		Recovery from log (%)			Recovery from flitch (%)	
			Flitch	Green veneer	Dried veneer *	Green veneer	Dried veneer *
Sawn fresh	10	Mean	45.3	26.7	8.6	54.2	19.8
		S.D.	5.6	12.1	-	24.2	-
Stockpiled	17	Mean	46.8	26.8	8.5	56.1	17.5
		S.D.	8.3	12.2	-	19.3	-

* Standard deviations are not given because individual identification was lost during the drying process.

The weighted mean recoveries of green veneer from logs and flitches were 26.4 per cent and 55.4 per cent, and of dried veneer were 8.5 per cent and 18.4 per cent respectively. The latter figures can be compared with Shea's (1980) results of 18 per cent and 33.7 per cent for dried veneers from logs and flitches.

In Shea's 1980 study, veneer logs were selected and a single facing cut made in the sawmill which allowed for defective logs to be rejected, whereas in the present trial the larger logs, not necessarily of veneer log quality, were used. The slicing method used in the earlier trial involved cutting the log down one side, then slicing from the round section on the opposite side. When this side was sliced to the brittle heart the flitch was turned and sliced on the opposite side. In the present trial, flitches were prepared with four square sides and no wane, then sliced to the heart from both sides. Consequently, the slicing method used in the 1980 trial presented more wood to the slicer than the method used in this trial did. These different slicing methods would contribute to the variation in results.

Mature jarrah slicing flitches in normal commercial practice are cut free of heart from large logs. From these Wesfi produce an average dried veneer recovery (after clipping) of 48 $\pm$ 2 per cent (K. Birkhead, personal communication). From the dried veneer, 78 per cent will be used for panelling, of which 48 per cent is face quality and 40 per cent is back quality. In previous years recovery into face veneer was just greater than into back veneer, but improvements in slicing (no knife marks occurring on the veneer), removal of grit from the flitch, changing the storage tank lining from concrete to timber, and greater control over flitch quality has improved recovery. In general, higher veneer recoveries are obtained from mature jarrah compared to regrowth jarrah because, only much larger, top quality logs are selected and the larger flitches prepared contain no brittle heart when sliced.

A large volume of dried veneer was wasted because it was uneconomical to utilise veneer with lengths less than 1.5 m and widths less than 80 mm. These sizes occurred as a result of trimming larger widths, and inherent defects in the veneer e.g. kino, borer damage and rot. These narrow veneers have pronounced curling after drying, making stitching to produce larger sizes difficult. This problem is very common with narrow, long length veneers (2.5 m to 3.0 m), as was found in this trial.

In the present trial, the regrowth veneers were graded into face and back veneers, which comprised 23.2 per cent and 76.8 per cent respectively in comparison to the 60 per cent and 40 per cent for these grades in mature jarrah veneers. Face veneer is suitable for exposed decorative furniture and panelling, whereas back is a lower grade suitable for limited exposure uses, for example, backs of cupboards. The reasons for downgrading the veneer to back grade were : borer damage, birdseyes (epicormic buds), contrasting colour, kino, pencilling and rot (Table 2). Birdseyes (epicormics) were the major downgrading factor, but it is very difficult to identify this defect in the log form. The presence of kino was the other major factor. Some of the veneer containing birdseyes was high quality, and given market acceptance of this feature could be upgraded to face grade.

Table 2

Defects downgrading face veneers to back veneers

	No *
Borer damage	3
Birdseyes	20
Contrasting colour	4
Kino	7
Pencilling	3
Rot	2

Major factors downgrading the regrowth veneer were inherent in the log before slicing. With careful log selection, logs with defects such as kino and rot could be identified in the forest and used for alternative purposes.

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