

Table 1

BLUE GUM PLANTATION ANALYSIS

Determining the optimum stocking and rotation age

SITE QUALITY 30	STOCKING	600	900	1200
1. Fully managed plantation				
Optimum harvest age	AGE	12	11	10 years
MAI at optimum harvest age	MAI	29.2	29.9	29.7 m ³ /ha/yr
Stand Basal Area at harvest	SBA	33.2	34.8	35.2 m ² /ha
Merch height to 6cm sedub	HT	20.9	19.6	18.0 metres
Mean DBH at harvest	DBH	26.5	22.2	19.3 cm
\$ gross stumpg/ha	\$REV	19,769	17,031	14,043 \$/ha/rotatn
\$ sum costs/ha	\$COST	5,034	5,103	5,177 \$/ha/rotatn
Net profit on sales	NET	\$14,735	\$11,928	\$8,866 \$/ha/rotatn
Bone-dry basic density	BBD	573	567	560 kg per m ³
stumpage value	STMPG	\$ 37.35	\$ 35.44	\$ 33.50 \$ per m ³
internal rate of return	IRR	14.17%	13.44%	12.09% return p.a.
2. Owner-grower lower cost scenario				
Optimum harvest age	AGE	10	9	8 years
MAI at optimum harvest age	MAI	27.7	29.5	29.9 m ³ /ha/yr
Stand Basal Area at harvest	SBA	30.0	31.8	32.1 m ² /ha
Merch height to 6cm sedub	HT	18.6	17.5	16.0 metres
Mean DBH at harvest	DBH	25.2	21.2	18.5 cm
\$ gross stumpg/ha	\$REV	14,281	12,465	10,142 \$/ha/rotatn
\$ sum costs/ha	\$COST	2,921	2,906	2,896 \$/ha/rotatn
Net profit on sales	NET	\$11,360	\$9,558	\$7,246 \$/ha/rotatn
Bone-dry basic density	BBD	560	551	539 kg per m ³
stumpage value	STMPG	\$ 36.50	\$ 34.44	\$ 32.24 \$ per m ³
internal rate of return	IRR	20.66%	20.79%	19.87% return p.a.

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SOME KEY ASSUMPTIONS :

BlueChip forest services

GENESTOCK & MANAGEMENT are optimal and adequate for the site
 SITE QUALITY is an index of volume increment capacity of the site for a given stocking rate and age
 STUMPAGE VALUE = \$25-\$40 per m³ current \$ value; see text notes for explanation
 COSTS are 1. Fully Managed :\$2800 per ha plus 80c/tree establishment, \$150/ha/ann maintenance
 2. Owner-grower: \$1500 per ha plus 40c/tree establishment, \$100/ha/ann maintenance
 INFLATION is 3% per annum on costs, 3.5% per annum on revenues
 LAND : no net holding cost
 OPTIMAL ROTATION is the age at which IRR is maximised
 TAX EFFECTS are neutral, ie an investor can deduct all costs as incurred at the same marginal rate as income when received.

