Processing of small diameter logs: effect of log diameter, sawing pattern and some bole variables on lumber recovery

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Abstract: Effect of log diameter, sawing pattern, log length and log bole form on lumber yield have been studied with a view to finding the most efficient processing technique for small diameter plantation grown Teak (Tectona grandis) logs. The study has shown that there are significant differences between lumber yields from log diameter classes 10-20. 21-30 and 31-40 cm. and that bigger log diameters generate higher lumber yields than smaller log diameters. Log diameters of more than 20 cm give mean lumber yield of more than 50 % compared with those below 20 cm which generate about 43 % mean lumber yield. A linear regression model developed could predict teak yield from log diameter ranging from 10 to 40 cm. Cant sawing method has also been found to result in higher lumber recoveries than through and through sawing method, especially for log diameters above 20 cm. A reduction in lumber yield with increasing log length has also been found in the study. The results of the study also indicate that small diameter plantation grown logs of more than 30 cm diameter can be efficiently processed to give improved yields, if suitable sawing methods are adopted. Keywords: Small diameter log, Sawing pattern, Lumber recovery

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In the sawing processing, the logs will be rotary-cut into cylinder f irstly. After sawing, the triangular sawn timber is used to manufacture laminated wood. sawing is more suitable to small-diameter logs sawing. The benefit of hexagon sawing is not only the higher volume yield but also the higher. product additional value and automation. Effect of sweep on sawn recovery from Radiata pine logs. Jan 1975. 29-39. A G Brown. R G Miller. Brown, A.G., Miller, R.G., 1975: Effect of sweep on sawn recovery from Radiata pine logs. Australian Forest Research 7(1): 29-39. OPTSAW-Simulation model for positioning and sawing in sawmills. 4. Diameter deductions scaling diameters of the log ends are reduced to account for defect. Defect volume is estimated by the difference in volumes based on the gross and net diameters. In some cases, breakage would have no effect on lumber recovery if it were confined to the trim portion of the log. Product scale deductions for breakage were considered accurate. Average bias: based on cubic product scale was only -0.1 cubic foot. 8. 9 Crook and sweep Logs with crook lost a relatively small amount of lumber (-0.9 cubic foot); however, when the bias was expressed as a percentage, crook ranked second behind multiple defects. The percentage was high because, in our sample, crook occurred in small logs where any lumber loss was a high proportion of the total lumber recovery. In probability theory, a log-normal (or lognormal) distribution is a continuous probability distribution of a random variable whose logarithm is normally distributed. Thus, if the random variable X is log-normally distributed, then Y = ln(X) has a normal distribution. Equivalently, if Y has a normal distribution, then the exponential function of Y, X = exp(Y), has a log-normal distribution. A random variable which is log-normally distributed takes only positive real values. It is a convenient and