

Effect of Curve Sawing on Lumber Recovery of Hardwood Logs Containing Sweep

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ABSTRACT

It has been estimated that approximately $\frac{1}{3}$ of hardwood sawlogs have a significant amount of sweep and that 7 to almost 40% of the yield is lost from logs that have greater than one-inch of sweep. While decreased yield is of importance, for hardwood logs the loss of lumber value is likely more significant. A method that produced lumber while accounting for log curvature (sweep) would allow greater volumes and value material to be produced. While this technology is being utilized for softwood processing, it has not been accepted by the hardwood industry.

A lumber recovery study conducted on mostly 8-foot long grade 2 and 3 cherry logs at a mill utilizing a curve sawing gang, produced greater lumber volumes for cants that were curve sawn than from cants that were straight sawn. Increases in overrun ranged from 6-18 % while lumber recovery improvements ranged from 0.5 to 1.3 for eight-foot logs containing 1-3 inches of sweep. Since the curve sawing gang used in the recovery study was limited in the maximum amount of sweep that could be handled during sawing ($1\frac{3}{4}$ -inches per 10-feet), simulation software was used to predict the potential increase in volume recovery of the logs sawn if the machine had been able to handle the maximum amount of sweep. Results indicated that lumber recovery increases proportionally with the amount of sweep in the log given that the machine could accommodate maximum sweep.