

Thinning With a Whole-Tree Chipper

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Alabama's 4.5 million acres of pine plantations represent an abundance of fiber and timber production opportunities for the private landowner. As these pines begin to reach pulpwood size, landowners often consider a basic pine management tool – thinning.

Thinnings can be thought of as intermediate harvests where some trees are cut from a stand several years before the final harvest. Through thinning, reduced competition for light, water, and nutrients promotes growth rate, size, and value of the remaining trees.

In Alabama, a typical pine plantation thinning is deferred until 15-20 years into the life of the stand when trees are large enough to give a significant amount of marketable wood. This delay poses several disadvantages to the landowner. Obviously, one would prefer to have large sawtimber trees as quickly as possible. Delaying thinning delays rapid growth. Also, the wait often places the stand at risk for hazards resulting from overcrowded conditions, such as wildfires fed by excessive dry fuels on the forest floor, and the probability that southern pine beetle infestation will occur.

Pruning pines at age 10-11 years is gaining acceptance, but by the time pines are thinned – making the stand more accessible – trees are beyond the optimum time for pruning.

Within the last ten years, the widespread introduction of whole-tree chipping technology in the woods by the forest industry has opened the possibility of thinning young pine plantations much earlier in the rotation.

When thinning using a whole-tree chipper (WTC), trees are harvested with a

feller-buncher, skidded to a decking area, and chipped onsite, producing a product suitable for use in pulpmaking and as boiler fuel. Chips are blown into trailers and trucked to the purchasing mill. Finer

as age 10-11, depending on the growth of the stand, have been successfully thinned with this equipment on industry land. They use a combination of systematic and selective cutting. In this method, every

fifth row is removed and slow-growing, poor-quality timber between the cut corridors is harvested as well. The feller-buncher enters the stand from the cleared row, fells and accumulates the marked trees, along with all small wood, brush, and vines, etc., for grapple skidders to pull to the chipper. The access corridors also provide openings for later thinning operations.

Kevin Caton, procurement manager for Evergreen Forest Products, says the practice is total utilization of the stand. "In-woods processing of whole trees gets a higher yield from the harvested acreage because bark, limbs, and non-merchantable stems are used as well." Their operation leaves a very clean stand ready to respond rapidly to the available sunlight and the reduction in competition, he added.

International Paper forester Keith Luker says there is a fundamental economic benefit of thinning earlier in the life span or rotation – more desirable trees live to grow for the full rotation. "Thinning 10-11 years into the life of the stand has given us more

surviving trees to manage," he said. "We get in while the trees are young to thin out competing vegetation and cull trees."

Managing more healthy trees improves the total financial return by producing more large trees suitable for sawtimber and other solid wood products, said Luker.



BEFORE: The day of the thinning, the cleared row is free of small wood, brush, and vines.



AFTER: Three months after thinning, new herbaceous growth quickly appears as sunlight reaches the previously dark forest floor.

chips made from the tops and limbs are blown from the grinder into a large enclosed truck for transport to a boiler or storage facility.

Evergreen Forest Products, Inc. conducts whole-tree chipping for International Paper's Prattville mill in Autauga County. For many years, trees as young

Timber is a long-term investment. A stand may not reach maturity for 25-30 years down the road. If you thin your timber, a financial return is possible early in the rotation – many years before the final harvest. Stand value is enhanced by thin-

ning out slow-growing, poor-quality timber and by emphasizing production of sawtimber-size trees through optimum growing conditions for the remaining trees.

Whole-tree chipping is an option for landowners to enjoy all the benefits of thinning – increased growth, greater survival, and less risk of insect and disease infestation – earlier in the life of the stand. ♣



Grapple skidders drag trees and slash to the whole-tree chipper.



The whole-tree chipper processes the stem and discards small limbs and slash.



Chips are blown into trailers and trucked to the purchasing mill.



Tops and limbs are fed into a grinder.



Finer chips made from tops and limbs are blown from the grinder into a large enclosed truck for transport to a boiler or storage facility.



Pine chips.

Photos by Tilda Mims