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YIELDS HIGH FOR PLANTED SLASH PINE IN CENTRAL LOUISIANA

Slash pine has high growth potential on good upland soils in central Louisiana, which is both west and north of the natural range of this species. A 7-acre plantation near Alexandria has produced 50.6 rough cords per acre at age 26½ years--nearly 2 cords per acre annually.

The plantation was established in 1934-1935 with 1,150 trees per acre on a cutover longleaf pine site whose index for slash pine appears to be nearly 100. Unlike most of the older planted stands in the area, it has never burned.

Thinning was started at age 14 to demonstrate the effects of frequent, light cuttings in a region where glaze ice had severely damaged plantations thinned heavily. Five thinnings, at 3-year intervals, removed 18.3 cords per acre. The fifth thinning left 140 merchantable trees per acre. They contained 28.9 cords, had 83 square feet of basal area, and averaged 10.4 inches in diameter.

Annual growth since the first thinning has averaged 2.44 cords per acre. It increased steadily each 3-year period, reaching 2.67 cords in the last period.

Mortality during the past 12½ years has totaled 3.4 cords per acre, mostly from an ice storm in 1951 and Hurricane Audrey in 1957. Storm damage was considerably greater in comparable nearby stands that had been thinned more heavily--a demonstration of the benefits of light cuttings.--*Hans Enghardt*, Louisiana Forestry Commission in cooperation with Southern Forest Experiment Station, Alexandria, La.

PINE PLANTING IN A WATER IMPOUNDMENT AREA

To test their survival and growth, loblolly and shortleaf pine seedlings were planted in the permanent and detention pools of an impoundment area in north Mississippi.

The planting date was early March. Substantially none of the seedlings were in areas flooded during the growing seasons, for the site was sandy and the permanent pool held water poorly. In winter, the permanent pool filled and the detention pool usually held 1 to 1.5 feet of water for a day or two after heavy rains.

In the winter following the first growing season all shortleaf pines died in an area where they were submerged for 3.5 months. Loblolly pines, having grown taller than shortleaf, were not submerged in this part of the pool, but further down in the permanent pool submergence for 6 or 7 months was fatal to all trees of both species. Loblolly totally under water for 1 month and whose roots were flooded for an additional 3 months had a survival of 79 percent at the start of the second growing season.

During the second winter no seedlings were under water, and inundation of the roots for about 2 months did not appear to lessen the survival of trees of either species.

After 3 years, seedlings whose roots have been under water for considerable portions of each winter are half to three-fourths as tall as unflooded seedlings. Trees not flooded but on contours where the water table was raised are about equal in height and survival to those farther back from the water. Average heights of unflooded trees are 5.6 feet for loblolly and 3.7 for shortleaf.--*H.L. Williston.*

DORMANT-SEASON MIST BLOWING: IT DIDN'T WORK

Releasing pines by applying 2,4,5-T mists to hardwoods during the dormant season is an appealing idea, for in winter there is little foliage to obstruct the operator's vision and no farm crops to be damaged. But in a recent trial on the Cumberland Plateau, the kill of hardwoods was unsatisfactory.

Four 2,4,5-T formulations--2 or 4 pounds acid equivalent in 5 or 10 gallons of diesel oil per acre--were applied to plots where numerous shortleaf and Virginia pine seedlings were overtopped by a dense stand of sapling-sized oak, blackgum, and hickory. Spraying was done on April 20, 1960. Pine candles were just showing, black and scarlet oaks had tiny leaves, and the buds were swelling on other hardwoods.

As measured after 2 growing seasons, results were best with 4-pound treatments, which killed about 30 to 40 percent of the hickories and gums, 10 percent of the red oaks, and 6 percent of the white oaks and pines. The 2-pound formulations were less effective on hickories and gums, but did not damage pines and largely spared white oaks. No differences were attributable to the amount of diesel oil used. Dormant-season mist blowing might conceivably have a place in management for oaks, because of the greater susceptibility of gums and hickories. It cannot at present be recommended for the release of pines.--*J.D. Burton.*

OAK DIRECT SEEDING IN TENNESSEE

Two years after acorns were spot-seeded on the Cumberland Plateau near Sewanee, 71 percent of the spots with white oak and 14 percent of those with northern red oak bore established seedlings.

For a test of white oak, germinating acorns were planted two to a spot late in October 1959. The site was a hardwood stand that had recently been cut over. All trees overtopping the plots were deadened. After one year, in November 1960, stocking averaged 74 percent, and seedling height 4 inches. Protecting the spots with screen wire cones, disking before the acorns were planted, and hoeing during the spring and summer had little effect on survival or growth. In the winter of 1960-61 rabbits clipped 16 percent of the seedlings, but all resprouted. Small burrowing animals, apparently shrews, killed some trees, but by October 1961 stocking still was 71 percent and seedlings averaged 6 inches tall.

A north-facing cove where overstory hardwoods had been deadened was the planting site for northern red oak. Acorns that had been stratified and were sprouting were set two to a spot in late April 1960. Squirrels, chipmunks, and mice converged on the area, and after a month only 7 percent of the unscreened spots had seedlings. On screened spots stocking was 74 percent, but screens were removed late in May to accommodate tree growth and then predators pulled up three-fourths of the seedlings. By November stocking was 5 percent on plots that had never been screened and 21 percent on those initially screened. Disking was not tested but hoeing was of no apparent advantage. The survivors were not disturbed during the winter, and by the fall of 1961 all were still living; their heights averaged 9 inches.

Differences in site, time of seeding, and perhaps in rodent populations prevent comparisons between the two tests. Further studies are in progress.--*A.L. Mignery.*

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*Copies are available at the Southern Station.