MODIFICATIONS OF A LOWTHER TREE PLANTER FOR BETTER QUALITY PLANTING AND SURVIVAL

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The addition of a set of scalper plows to a standard model Lowther tree planter has increased the survival and growth of planted pine seedlings on the Kisatchie National Forest in central Louisiana. These scalpers have been in use for the past three planting seasons. In order to permit the plow beam to be raised, an arch was built into the frame of the planter. Figure 1 shows the right-hand scalper plow and the arch in the side of the frame. Another scalper plow is located on the left-hand side of the rolling coulter.

The initial cost of the scalper plows was $75. Replacement points cost about $34 per set. In general, a set of plows will last through one planting season, but this varies with soil type and amount of use. The cost of the plows, however, is a minor item when prorated on a basis of per thousand trees planted.

The planting sites had a heavy grass cover and in some areas, scrub oaks. Sites were generally flat with an occasional gentle slope. Where erosion is a problem, contour planting is recommended. Silting has been only minor, because the bottom of the scalped area is flat.
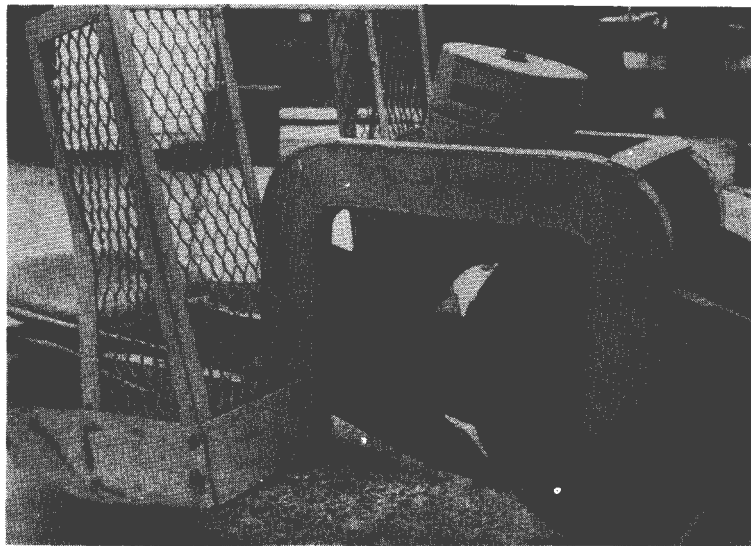

Figure 1. A side view of a standard model Lowther tree planter, showing arch built into frame to provide clearance for wing of scalper plow attached to plow beam.

The scalpers clear a swath about 15 inches wide. The cleared area is not

so wide as to preclude successful controlled burning in longleaf pine plantations to reduce infections of brown-spot needle blight. The depth of the scalped strip is adjustable. We ran the plows about 2 inches deep, which removed most of the grass roots. The reduction of root competition is considered to be a significant factor in seedling survival, particularly during the summers.

These scalper plows materially aided the man who was doing planting in that trash was pushed aside; this lessened danger of injury. Getting longleaf seedlings set at the proper depth was easier when scalpers were used. Depth of planting is a critical factor for this species. A better planting job was also obtained when planting slash and loblolly pine seedlings.

In certain soil types and under certain soil moisture conditions, the planter packing wheels cut in and buried themselves. When this happened a poor job of planting resulted. To correct excess pressure on the packing wheels, a modification of the planter was made on a machine belonging to the Nebo Oil Company of Jena, La. , by adding another wheel opposite the packing wheels (fig. 2). The height of this wheel is adjustable, and under ordinary planting conditions it just barely touches the ground. When the packing wheels hit a soft spot and tend to dig in the extra wheel acts to take pressure off of them. Because we, used scalper plows, we set this extra wheel out so that it ran in the track of the main planter wheels. This putt it outside the sod furrow thrown out by the scalper plows.
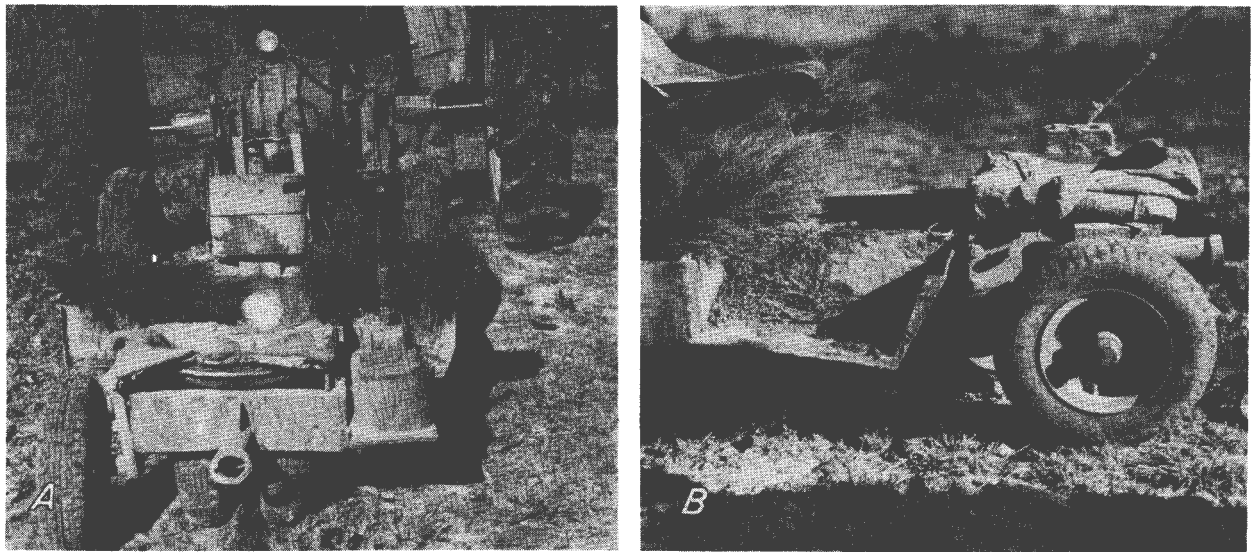
-Figure 2. A, Auxiliary wheel attached to rear end of planting machine to absorb extra pressure when packing wheels hit soft ground; B, side view of auxiliary wheel.

Another modification made by Nebo is an adjustable screw stop welded
to the main plow beam just ahead of the coulter (fig. 3). In certain soils, the
coulter and trencher have a tendency to run too deep, which puts an extra
load on the tractor and planter. When the trencher is in the ground at planting
depth, the end of the adjustable stop bolt rests on the planter crossbar
brace, thus holding the trencher at the desired depth.

Figure 3. A large bolt with the nut part
welded to the side of the plow beam just
ahead of the coulter and directly over
the frame crossbar brace. With the
plow in the ground at the proper
depth, the bolt is adjusted until the
end hits the crossbar brace. This
prevents the plow from running deeper
than the desired depth.