

NURSERY PRODUCTION OF HARDWOOD SPECIES

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There are probably fewer known facts about the artificial regeneration of hardwoods than any other species. The reasons being a lesser demand for the species. Too little research has gone into re-establishing hardwoods on idle land suitable for growing good hardwoods, and interplanting existing stands of poor stocking and undesirable species. The slow growth for the first few years of some species, and sometimes a complete failure of others, have discouraged many land owners in hardwood plantings.

The continued demand for yellow poplar, black walnut, black locust, catalpa, and cottonwood has brought about increased research in nursery production of these species. Because of the scarcity of good poplar seed and the low viability, about 7 percent, it is most important to try to grow a plantable seedling from every viable seed.

The seeds are gathered from sawmill operations between the last of August and mid-October and are spread out to dry inside a building. The pods are put through a pea Sheller to separate and mix the seed. They are then stored over winter between layers of sand in a pen on top of the ground. They are planted in early April in beds with rows 7 inches apart and covered lightly. The beds are rolled with a pine seeder to firm the seed in the soil and then mulched with about 1-inch of sawdust.

From 250 bushels of seed we shipped 359,000 plantable seedlings last season.

Walnuts, which are second in demand at present, are gathered in November to early-December. They are hulled with a special machine and stored between layers of sand much the same as for yellow poplar. The above ground allows fluctuating temperatures and makes a more natural stratification. Walnuts are shipped as stratified nuts in plastic bags with a bit of wet moss to prevent drying out in transit. This method seems to be more simple than growing seedlings. There is also the danger of introducing a root rot into the nursery through the large tap root left during lifting.

Catalpa seed are gathered in early winter and stored dry. The black locust is purchased from commercial seed dealers. They are stored in ordinary cloth bags and kept in a cooler at 35° to 40°. No stratification is necessary. Because of the fast growth of these two species, they are not planted until the last of June. The locust is topped in mid-August.

The cottonwood is from the research center at Grenada, Mississippi. The cottonwood usually remains in the field until needed. Very little is planted before February. All the other hardwoods are lifted and heeled in during the slack part of early lifting season.

There seems to be a coming demand for some bottom land oaks, cherrybark, water, and willow for wildlife and water fowl food. White oak has begun to look promising for forest plantings. The oaks are gathered from the best sources available in logging operations. The acorns are floated to get out the culls. They are then dried and treated with carbondisulphide for worms and placed in storage at 35° to 40° temperature. They are planted in late April. Most of the oaks are left in the bed until needed.

We seem to get the best results from sycamore that comes up in yellow poplar beds. This was the first year to try it, and I believe we picked it too early as only a few actually germinated. A short stratification period was also a factor.

Because of the slow take off of the oaks, we plan to make some studies of planted seedlings and direct seeding. We hope the results will encourage more plantings of cherrybark and white oak by many land owners. We are in the process of growing our own hardwood seed from superior trees. This will give us more viability and allow us to gather the seed at the proper time.

The only new nursery equipment is a walnut huller. A drawing on specifications can be obtained upon request. Some studies are to be made as to any injuries which it might do to the plantable walnut.

SPECIFICATIONS FOR WALNUT HULLER'

To be built according to sketch drawn and further described as follows:

Drum to be constructed of reinforcement steel. This consists of approximately 500 linear feet of steel rod being coiled into a spiraled tube 20 inches in diameter and 72 inches long. Four 1/2-inch rods, or pipe equivalent in strength, to be welded to drum to give strength and hold ribs at proper spacing. The drum to be made stationary to frame of huller.

The ribs to be spaced not more than 3/4-inch and not less than 1/2-inch apart.

The shaft to be of 1-1/2-inch steel with 3/8-inch by 1-inch steel welded to shaft for length of tube. The flat steel set edge wise at angles 0° - 90° - 180° and 270°. Lengths of 1/2-inch steel chain reaching from shaft to within 1/4-inch of inside of drum to be bolted to shaft. The chains to be spaced at 3-inch intervals along shaft.

1/ Drawings with specifications furnished by the Eastern Tree Seed Laboratory or Tennessee Division of Forestry upon request.

The shaft to turn in ball or roller type bearings, and equipped with double "V" belt pulley on end next to shoot for pulling with electric or gasoline motor. The front, or hopper end, to be fitted to flat belt pulley to be powered by tractor and belt. Pulley to be furnished by Tennessee Division of Forestry.

The frame to be built of 1-1/2-inch angle iron and braced to withstand maximum shock caused by use of machine. The drum to be completely encased with 16 gauge sheet metal. The sides to be framed and equipped to slide in each direction allowing the machine to be cleaned. The bottom to be sloped toward the center with a 12-inch opening for hulls to fall through.

The front end to be covered from the bottom to the brace holding the shaft. A hopper of approximately three bushels capacity to be fitted over the top opening.

The rear end to be closed except for a double shoot equipped with a lever-type damper to allow two sacks to be alternately filled.

The "V" belt to be rigged with an idler type-hand operated clutch to shut off machine without stopping motor.

The machine to be mounted on sled-type runners (turned at both ends) made of heavy angle iron. Motor to be furnished by Tennessee Division of Forestry.