

PLANTING COTTONWOOD SEED IN A NURSERY

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Numerous methods have been used for planting cottonwood (*Populus deltoides* Bartr.) seed in a tree nursery. The method used depends on several factors, such as nearness of seed source, use of seedlings (commercial planting operations or tree improvement programs), equipment, labor, and weather. For example, Wycoff (3) used boxed-in beds covered with standard snow fence from which he hung ripe catkins. In sheltered locations, where wind was not a problem, he scattered the pods over the beds to be seeded. Rudolph and Lemmien (1) spread partially-opened capsules on a nursery seedbed and then placed a snow fence over the side boards of the bed, so that the fencing was about 4 inches above the soil surface. The simplest and one of the most efficient methods known to the writers is used in the Union State Tree Nursery at Jonesboro, Illinois. The procedure is a modification of a method outlined in the Woody-plant seed manual (2).

Seed are obtained from trees of good form and vigor by either felling the trees, or cutting 4-foot limb sections from standing trees. Twigs, 18-24 inches in length, with a large number of catkins are taken from the limbs and stuck into the soil 1 to 2 feet apart on seedbeds (fig. 1). These twigs can be moved onto empty beds after an adequate number of seed has fallen on the seedbed. Enough seed can be obtained from a 20-inch tree to produce approximately 250,000 plantable seedlings (fig. 2).

A decisive advantage of this method is that the seed will complete the ripening process on the branches if they are not mature at the time of collection. In methods where catkins only are used, care must be taken to be sure that the seed are ripe at the time of collection, since they will probably not mature after being separated from the limbs.



Figure 1--Catkin bearing twigs are stuck into the soil so that seed may fall on the seedbed.

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Figure 2.--A quarter of a million plantable seedlings can be produced from seed obtained from a 20-inch cottonwood tree.

The principal disadvantage of our method is the high density of seedlings produced in the seedbed. The only recourse is to manually thin the beds to the density that will produce the desired size of seedlings. Seed germinating in the pathways can be killed by spraying with stansol.

In addition to the conventional nursery operations, such as fumigation, watering, weeding, etc., seedlings are topped once during the growing season to a height of 14 inches, and then again to this height when lifted and processed.

Literature Cited

1. Rudolph, V. J., and Lemmien, W. A. 1961. Growing cottonwood seedlings. *Jour. Forestry* 59: 600.
2. U.S. Forest Service. 1948. Woody-plant seed manual. U.S. Dept. Agr. Misc. Pub. 654, 416 pp., illus.
3. Wycoff, Hugh B. 1960. Cottonwood seeding at the Mason State Tree Nursery. *Tree Planters' Notes* 41: 13.