

ROOTING OF SLASH PINES IN OPEN HOTBEDS¹

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Seeds very often offer the easiest and least expensive means for the-reproduction of species. Seedlings, however, usually vary more or less in their characteristics and, therefore, cannot be depended upon to develop as plants that are genetically identical to their maternal parents.

Cuttage is used to reproduce like plants. A plant so reproduced is similar in all respects to the maternal parent, although bud variants or sports appear occasionally. The production of uniform plants by cuttage would be a valuable tool in the establishment of seed orchards and in studies of site relationship and clonal performance, if it could be accomplished with facility. However, slash pine cuttings are generally difficult to root.

An extensive literature review appears in Mergens' report on vegetative propagation of slash pine.² The present paper reports results from investigations on rooting of slash pine (*Pinus elliottii* var. *elliottii* Little and Dorman) in open hotbeds.

All cutting material was obtained from slash seedlings growing in the University of Georgia Forestry School Nursery at Athens, Ga. Stem cuttings from 37 two-year-old slash pine seedlings were inserted in open beds on June 17, 1957. A wound was made on one side at the base of the cuttings. A 1-inch slice of bark was removed immediately before treatment. The wounded tissue was dipped in a 0.3 percent indolebutyric acid in talc.

The outdoor propagating beds were 8 feet long by 4 feet wide by 2 feet deep. Three inches of crushed stone were spread in the bottom of the pit for drainage, and over this three inches of stable manure. The manure was a source of heat. The beds were then filled with 2 parts of sifted soil (old field), 1 part of sand, and 1 part of old sawdust (25 years).

The cuttings were inserted in the soil to a depth of 15 inches and watered twice weekly. A solution of femate (1 tablespoon of femate power to 1 gallon of water) was applied immediately after watering. The cuttings were shaded with plastic screening that gave approximately 40 percent shade. After 170 days, cuttings were examined and 77 percent had rooted.

This method presents an alternative to expensive greenhouse installation.

1 In cooperation with the Georgia Forest Research Council, the Georgia Forestry Commission, and College Experiment Station, University of Georgia, Athens, Ga.

2 Mergen, F. Vegetative propagation of slash pine. U. S. Forest Service, Southeast Forest Expt. Sta., Station Paper 54, 63 pp. 1955.