

TREE IMPROVEMENT PROGRAM
of the
Texas Forest Service

The Texas Forest Service has undertaken research in forest tree improvement as described below. The outlines for the projects listed were approved in 1951 and the projects are all in operation, with seedlings produced for field planting.

1. Isolation of strains of pine suitable for planting in the drier, more extreme environment found in the Post Oak Belt to the west of the Pine-Hardwood Region.

a. This problem is being attacked by the three following methods:

(1) By selection, to determine if strains of loblolly pine can be found that will be suitable. Such selection will be made from (a) the four areas of "Last Pines". (The "Lost Pines" are scattered islands of pines growing from 40 to over 100 miles west of the pine belt with 10 to 20 inches less rainfall), and (b) from isolated pines occasionally found growing in the Post Oak Region.

(2) By production and testing of various hybrids that might be suitable for this area.

(3) By testing various exotic species that grow naturally in an environment similar to the Post Oak Belt.

b. The various strains, hybrids, and exotics are planted in three regions of the Post Oak Belt (northern, central, southern) as well as at the central test area in the East Texas Pine-Hardwood Region. Additional, cooperative tests have been arranged with other individuals and agencies in the south.

2. Determine the role genetics plays in the determination of wood density of loblolly pine.

a. This very complex problem is at present being attacked from the genetic standpoint but plans are to attack the problem from the physiological and anatomical viewpoint.

b. Of the greatest importance is the control of environmental factors so that results will reflect only genetic differences.

c. Loblolly pines with the densest and lightest wood have been located. For this purpose over 6,000 individual pines were sampled.

d. Trees with very light and very dense wood will be used as follows:

(1) Grafts on loblolly stock. These will be in the form of twin grafts when possible. A scion from a light tree and one from a dense tree will be grafted onto the same stock. This will result in a forked tree, one fork from dense scion, one from a light scion. The effect

