

TREE IMPROVEMENT PROGRAMS ON NATIONAL FORESTS IN REGION 7

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With the staffing of a regional geneticist in January, 1964, the seven National Forests initiated a program of seed production, The Region is currently planning a large conversion program for the 1970 s, Cull and low quality hardwood stands with no desirable reproduction occupy more than 540,000 acres of National Forests lands, Since these areas lack the desired seed source, they require direct seeding following site treatment. An estimated 500,000 pounds of seed are needed to regenerate this large acreage. At present the region has no reliable supply of seed. Efforts are being made to harvest and store the required quantities. To facilitate the easy collection of local seed, seed production areas will be developed and tended to produce large, reliable crops of seed, An estimated 4,000 acres of seed production areas will be needed to supply the desired quantities of seed.

SHORTLEAF PINE SEED PRODUCTION AREA NEW CASTLE RANGER DISTRICT, JEFFERSON N.F.

To date the New Castle shortleaf area is the only stand expressly developed for seed production.. Considerable help in the form of suggestions and advice was given by Ray Marler of Virginia, G. R. Trimble of Northeastern Forest Experiment Station., Peter Hoekstra of Southeastern Forest Experiment Station and B. A. Roach of Central States Forest Experiment Station, Cost data for this first area re incomplete but best estimates approach \$150 per acre. The developmental costs were offset by a commercial pulpwood sale, The additional costs reflect the expense of controlling competing vegetation, chipping slash to reduce the fire hazard, control of insects and disease and the application of fertilizer as required to protect and stimulate seed trees, At present approximately 200 stems per acre have been marked for removal, leaving the best 25 (per acre) well-spaced and free to develop a large cone-bearing surface

In addition to the completed area, 10-15 others have been found suitable for development during this fiscal year. The Region 7 goal for Fiscal. Year 1965 is 360 acres (table 1).

A major portion of the regional geneticist's time has been spent evaluating potential seed stands and prescribing treatments for their development, Species used in stand conversion include white, red, shortleaf, Virginia and pitch pines, and Norway spruce.

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Table 1.--Region 7 indicated stand conversion
and proposed seed production acreages.

National Forest	Stand conversion M acres	Seed production areas	
		FY 1965	FY 1966
Allegheny	61,000	20	30 ^{1/}
Cumberland	50,000	100	75
George Washington	200,000	60	110
Green Mountain	42,000	-	20
Jefferson	90,000	100	110
Monongahela	36,000	80	85
White Mountain	61,000	-	30
	540,000	360	460

1/ Includes black cherry seed orchard.

It should be noted that Region 7 is stressing production of quality hardwood timber as the first objective in timber management. Success in reproducing hardwoods has occurred naturally or simply as a result of the cutting methods. Seed production in hardwoods such as black cherry, black walnut, red oak, red maple and yellow birch is contemplated, but the seed need is not the impelling factor. Since hardwoods offer a tremendous opportunity for quality improvement through the application of genetic principles, the Region has proposed the improvement of black cherry on the Allegheny National Forest. Dr. Schreiner has asked that I present the highlights of this cooperative program.

BLACK CHERRY SEED ORCHARD PROGRAM

This is a cooperative approach to improvement by the Northeastern Forest Experiment Station and Region 7; Briefly the objectives include:

1. Selection of 90 plus-trees over a three-year period.
2. Collection of open-pollinated seed and scion material from the plus trees.
3. Establishment of a seedling orchard from selected plus-tree progenies.
4. Establishment of a small clonal orchard as comparison.
5. Orchard management, including cultural measures to promote maximum seed production.
6. Comparison of costs, productivity and genetic gain from seedling and clonal seed orchards.

The specific selection criteria will stress:

1. Rapid growth rate.
2. Excellent timber form.
3. Disease and insect resistance.
4. Resistance to or good recovery from ice damage.

This project is still in the final planning stage; however, a yearly report and roster of plus trees will be submitted to our NEFTIC Hardwood Improvement Committee.