CERTIFICATION STANDARDS FOR FOREST TREE SEED

Georgia Crop Improvement Association
University of Georgia Athens,
Ga.

The State of Georgia has adopted Certification Standards for Forest Tree Seed. The Standards (revised for the 1960 crop) are modified and outlined below for your convenience.

I. Application and amplification of general certification standards.

A. The General Seed Certification Standards as adopted by the Georgia Crop Improvement Association are basic, and together with the following specific standards, constitute the standards for certification of forest tree seed.

B. The term "field" as used in the General Seed Certification Standards shall be interpreted to include "stand" and "orchard."

II. Land requirements.

Site index (50 years) shall be at least 75 feet for pine species. III.

Inspections.

A. Field inspections.

1. An initial field inspection must be made at least 21 months prior to seed collection. A second inspection must be made within 90 days prior to cone collection. During the second inspection, the inspector will make an estimate of cone production, which will become confidential information to the GCIA.

2. Inspections will be required only in years in which certified seed production is planned after the initial inspections, provided that subsequent inspections shall be not more than 5 years apart.

3. Inspections may b e made at any time during cone collection, seed extraction, and cleaning without prior notice.

B. Off type trees.

1. Off type trees must be marked at the time of inspection and felled while the inspector is on the area. If these trees are felled at a later date, a re-inspection will be required.

2. Crook will be acceptable in trees only if it is accountable.

3. Sweep will be acceptable if it occurs in one plane only and deviates from a line from the center of a 4-inch merchantable top to the outside of the butt, NOT MORE THAN ONE INCH FOR EACH TEN FEET IN TOTAL HEIGHT.

C. Final dates for filing.

October 15: Forest trees initial inspection at least 21 months prior to seed collection.

June 1: Forest trees; annual inspection.

D. Annual inspection.

Inspection for Forest Tree Seed is required only in years in which seed collections are to be made, provided that the last inspection prior to this was within 5 years.

E. Official testing.

Forest tree seed will be tested by: Region Eight Seed Testing Laboratory, P. 0. Box 1183, Macon, Ga.

F. Inspection fees. Fees are payable at the time of application for inspection.

1. Membership fee--GCIA	$1.10 per year
2. Farm fee (covering all production under a single managership)	8.25 per year
3. *Acreage fee--first 25 acres in one county..	2.00 per acre
In excess of 25 acres in one county....	1.00 per acre

(*Where individual trees are inspected, the minim= fee shall be for one acre. The acreage fee may be figured at the rate of one acre per tree or the gross acreage occupied by all trees inspected. The lower figure will be used to determine the total acreage fee.)

G. Specific requirements.

1. Seed producing areas.

a. Stand selection.

The stand must initially contain a minimum of one hundred (100) trees per acre of the desired species that are at least 10.0 inches d.b.h., or a minimum basal area of 50 square feet. The stand shall be even-aged and shall not have been previously thinned except where a record is available to show that thinning was from below.

b. Stand treatment.

(1) Roguing.
All pest infected trees are to be cut and removed from the area. All trees of below average vigor (growth rate) and form must be removed. A11 trees having above average branch size must be cut. All trees having spiral stems or forks must be removed.

(2) Stand composition.
Only trees of average or above in vigor and form, and average or below in branch size, and free from pests shall remain.

(3) Isolation strip.
The area shall be free of contaminating pollen. An isolation strip shall be maintained. A strip 400 feet wide adjacent to the production area shall be free of all species of trees which will cross pollinate naturally with the species of the production area. Exception: This strip may contain trees of the same species providing that it meets the standards of roguing and stand composition of the production area.

2. Seed orchards.

a. Stand composition.

The stand will be composed of at least 15 clones of trees. The identity of each tree shall be known and records of the ortet (or parentage in the case of seedling stock) shall be available for inspection. The arrangement shall be such as to maximize cross pollination between clones.

b. Progeny tests.

All clones in a seed orchard must be progeny tested before certified seed, Class I, can be produced. The records of each progeny test shall be available to the Georgia Crop Improvement Association, and at their discretion they may refer these records to proper authorities for evaluation.

The field plots of the progeny tests must be maintained until such time as the requirements of the Georgia Crop Improvement Association are satisfied.

c. Certification.

Prior to completion of progeny tests and qualification for certified seeds, Class I, seed which are produced in seed orchards, may be sold as certified seed, Class II, provided that all ortets or individual trees meet the standards for "select trees."

d. Isolation.

A minimum of 100 feet surrounding the orchard shall be free of all trees producing contaminating pollen.

3. Superior or elite trees (including varieties).

a. Individual characteristics.

A tree must possess certain characteristics, such as superior growth, gum yield, specific gravity, etc., which can be described and must be capable of being differentiated from other trees of the same species.

b. Progeny tests.

All trees must be progeny tested before certification. The progeny tests and records shall be handled as for seed orchard clones.

c. Certification.

Open pollinated seed may be certified Class II if a 100foot isolation strip is rogued of all diseased and defective trees (seed producing area standards). Controlled pollinated seeds may be certified Class I provided the cross presented for certification has been progeny tested.

d. Identification.

Each tree shall be marked with a band of paint not less than 6 inches wide containing identifying numbers and/or letters. The records for each tree shall contain a complete description of the tree and a map showing its exact location.

4. Select or plus trees.

a. Selection.

A tree mist possess certain characteristics, such as superior growth, gum yield, specific gravity, etc., which can be described and must be capable of being differentiated from other trees of the same species. This category shall be the phenotypic equivalent of "Superior or elite trees" prior to progeny testing. This will be phenotypic selection.

b. Stand treatment.

An isolation strip 100 feet wide around each tree shall be rogued of all diseased and defective trees (seed production area standards).

IV. Field standards.

A. General.

1. Definitions.

The term cone shall include the seed contained therein. The

term scion shall include all materials for vegetative propagation of a clone.

2. Unit of certification.

An area or a portion of an area may be certified. The portions of an area not meeting certification requirements shall be delineated with a painted boundary mark (color contrasting with other boundaries), and cones produced on the disqualified area may not be collected. A clear and distinct boundary line will be marked with paint between an area and its isolation strip.

3. Isolation requirements for pine species:

	Isolation required for certified class		
	I (feet)	II (feet)	III (feet)
Seed producing areas	---	---	400
Seed orchards	400	400	---
Superior or elite trees (including varieties)	0	100	---
Open pollinated select trees	---	---	100

V. Seed standards.

A. Germination tests.

Tests will be acceptable only from laboratories approved by GCIA. Tests must have been completed within 6 months prior to shipment of seed and the seed must have been stored in airtight moisture proof containers at moisture content less than 10 percent and temperature below 32°F. from the time of sampling until shipment.

B. Lot sire.

No lot of tree seeds may contain more than 1,000 (plus or minus 100) pounds.

C. Specific requirements.

Factor:	Standard (percent)
Pure seed (minimum)	98
Other species or varieties (maximum)	0
Inert matter (maximum)	2
Germination (minimum apparent)	75
Stratification	1/
Percent full seed	1/
Speed of germination (as percent of total germination):	
Loblolly pine (*Pinus taeda* L.) at 14 days	95

	Standard (percent)
Longleaf pine (P. palustris Mill.) at 12 days.	90
Shortleaf pine (P. echinata Mill.) at 14 days.	95
Slash pine (P. elliottii Engelm.) at 14 days..	95
White pine (P. strobus L.) at 20 days.....	95

1/ Specify on tag.

VI. Approved seed.

A. Seed may be collected from designated individual trees. These trees shall be equivalent in growth, quality, and pest resistance to those permitted in seed production areas.

B. No isolation strip or waiting period before seed collection shall be required.

C. Field inspection will be required prior to seed collection..

D. These seed shall meet the Seed Standards (Section V) for Certified Seed.

E. The Association will issue a tag marked "Approved Seed" for this class of material.

VII. Seed and cone processing.

A. Seed and/or cones should be so handled as to prevent mixture and maintain identity. Each lot of cones or seed shall be identified at all times throughout processing.

B. Lots of cones shall be isolated in drying by seed proof barriers to prevent mixing of seed as the cones open. All drying racks, bins, areas, etc., shall be thoroughly inspected and cleaned prior to use.

The basis for this program and its administration is described in an article printed in the Journal of Forestry, vol. 57, No. 2, February 29, 1959. Excerpts from it are reprinted below:

> February 8, 1958, marked the final acceptance of Certification Standards for Forest Tree Seed by the Georgia Crop Improvement Association. This action climaxed more than 2 years of work by a committee of the Georgia Chapter of the Society of American Foresters. These Standards provide the means for the introduction and control of high genetic quality tree seed in the Georgia market.

In 1956, the Georgia Legislature passed two bills which encouraged the establishment of Certification Standards. One bill (H.B.195) provided for the licensing of seed dealers and the labeling of seed. H.B.lOt established the College of Agriculture of the University of Georgia as the legal certifying agency, with the Georgia Crop Improvement-Association as its agent to administer the program. The Crop Improvement Association is a nonprofit corporation, and is supported and controlled by its members. Most States have similar associations, which deal with agricultural seed. The Crop Improvement Association is organized into 6 commodity groups, 1 of which is forestry. Each group has a Crop Improvement Committee, which considers any changes in the standards and the addition or deletion of species or cultivars from the eligible list. Their annual meeting is open to the public and anyone can enter the discussions. The Committee recommendations are then transmitted to the Board of Directors for final action. A Certification Committee rules on disputes between producers and the Association, and an Advisory Committee aids in guiding the long-range objectives of the Association. Representatives of forestry interests are members of these committees and of the Board of Directors.

Inspection fees are set to cover the cost of the inspection and are kept as low as possible. Basic membership and farm fee total $9.35, and an acreage fee is assessed at the rate of $2 per acre for the first 25 acres in *one* county and $1 per acre for those above 25. Fees must be paid at the time of application for *in*spection. At present *only* the four major species of southern pines are eligible for certification; other species will be added as the need arises.

The goal of this program is to have all seed and seedlings planted from material of highest genetic quality. As Class I seed become available, Class III and finally Class II seed will be dropped from the Standards. The final exclusion of Class III and Class II seed will require a waiting period of several years, pending the completion of progeny tests. New techniques in progeny testing are expected to speed up the completion of tests, especially in the field of wood quality, and these developments will make possible the large-scale production of Class I seed in the not-too-distant future.

Further information about Georgia's program can be obtained from The Georgia Crop Improvement Association, Hoke Smith *Annex,* University of Georgia, Athens, Ga.