

**WASHINGTON-OREGON FOREST REPRODUCTIVE MATERIAL
CERTIFICATION STANDARDS**

April 6, 2009

**Applications for both States are submitted to the
Washington State Crop Improvement Association
1610 NE Eastgate Blvd, Suite 610, Pullman, WA 99163**

1. PURPOSE - The purpose of *forest reproductive material* certification is to make available *reproductive material* properly identified by species or species and *cultivar*, and by *source* and *origin*.

2. DEFINITIONS – (italicized words in the text indicate a direct reference to specific words and terms described or defined herein)
 - a.. *Applicant* means person or organization who submits *application* for *reproductive material certification* to *certifying agency* and who assumes responsibility for compliance with these standards.

 - b. *Audit* means periodic examination and check by *certifying agency* of any part or all of the records and procedures specified in *field standards* and *processing standards*, and of additional records pertinent to inventory and distribution of *reproductive material*, including verification of corresponding physical inventory to assure that no significant errors or omissions exist.

 - c. *Batch* means all or part of a *lot* of *reproductive material* of a single species collected during one crop season from within stated *breeding zone(s)* or from within stated 500-foot *elevation* increment(s) in stated *seed zone(s)* that is collected or processed at one time.

 - d. *Breeding zone* means a specifically designated unit of land the description of which is on file at the *certifying agency* for which an improved population of trees of a specific species or species cross is being produced.

 - e. *Buyer* means the person who first receives *reproductive material* from the *collector*.

 - f. *Certificate of Genetic Identity* means a document furnished by the *producer* on demand and verified by the *certifying agency* describing the ancestry and breeding behavior of a *lot* of *reproductive material*.

 - g. *Certificate of Provenance* means a document issued by *certifying agency* that verifies *source* and *origin* of *reproductive material* by *field inspection* and *audit*. (*Certificates of Provenance* are issued to satisfy OECD requirements).

 - h. *Certification of reproductive material* means execution by *certifying agency* of *field inspection*, *plant/warehouse inspection*, and/or *audit* to accomplish the purpose described in paragraph 1.

 - i. *Certifying agency* means the duly designated state agent: Washington State Crop Improvement Association, 1610 NE Eastgate Blvd, Suite 610, Pullman, WA 99163.

- j. *Character* means a distinctive trait, but not necessarily invariable feature, exhibited by all individuals of a group and capable of being described or measured: e.g., growth, form, color, resistance to disease, insects, weather, animals, etc.
- k. *Code* means a unique identification of a group of the *producer's* pertinent records about a *lot* of *forest reproductive material*.
- l. *Collector* means person who collects *forest reproductive material* at their *source*.
- m. *Cultivar* means an assemblage of *tested* cultivated individuals, which is distinguished by any *characters* (morphological and/or physiological).
- n. *Elevation* means altitude above sea level and is divided in 500-foot increments as shown below. It may also mean appropriate *elevation* bands as provided for under *code* and/or *breeding zone*.

| | |
|------------------------|------------------------|
| 0-500 feet-Code 05 | 3001-3500 feet-Code 35 |
| 501-1000 feet-Code 10 | 3501-4000 feet-Code 40 |
| 1001-1500 feet-Code 15 | 4001-4500 feet-Code 45 |
| 1501-2000 feet-Code 20 | 4501-5000 feet-Code 50 |
| 2001-2500 feet-Code 25 | 5001-5500 feet-Code 55 |
| 2501-3000 feet-Code 30 | and so forth |

- o. *Field inspection* means observation by *certifying agency* of all activities and records involved in propagation, collection, buying, production, and transportation of *forest reproductive material* to assure compliance with field standards.
- p. *Forest reproductive material* means plant material of genera and species of trees that will be used for forestry.
- q. *Genetic identity* means the ancestry and breeding background of *Selected* and *Tested classes* only of *forest reproductive material*.
- r. *Genetic superiority* means that *forest reproductive material* originated from tree(s) whose superiority in one or more *characters* important to forestry has been proven by *tests* conducted in specific environments.
- s. *Legal description* means legal cadastral survey subdivision.
- t. *Location* means description by *seed zone* or portion thereof and *elevation* and/or *breeding zone* or *code*
- u. *Lot* means homogeneous quantity of *forest reproductive material*.

For *Tested* and *Selected classes*, it is of a single species, *cultivar*, or cross, collected from a distinctly described and recorded population of trees.

For *Source Identified classes*, it is of a single species collected from within stated *seed zone(s)* and from within 500 foot *elevation* increment(s) and/or *breeding zones* or appropriate *codes*.

For *Audit class*, it is a single species collected from within stated *seed zone(s)* and from within 500-foot *elevation* increments.

Lots shall be identified by number and/or *code* or *breeding zone*.

- v. *Origin* means the *location* of the indigenous parents; for non-indigenous parents, it is the *location* from which the seed or plants were originally introduced.
- w. *Plant/warehouse inspection* means observation by *certifying agency* of all activities and records involved in receiving, processing, storage and labeling of *forest reproductive material* to assure compliance with processing standards.
- x. *Producer* means person, company, bureau or agency with overall responsibility for producing *forest reproductive material*.
- y. *Provenance* means the original geographic *source* of seed, pollen or propagules.
- z. *Reproductive material* means seed, pollen, trees, cuttings, scions, etc., originating from forest trees.
- aa. *Seed production area* means a natural or planted stand or group of stands of phenotypically superior trees, set aside, rogued, and treated to stimulate seed production.
- bb. *Seed stand* means identified, unrogued stands, of at least average performance used for seed collection (applies only to *Source Identified Subclass A*).
- cc. *Seed zone* means a geographic area delineated on Western Forest Tree Seed Council's Tree Seed Zone Map published July 1973, or similar authoritative maps of *seed zones* as approved by *certifying agency*.
- dd. *Source* means the *location* of the immediate parents, the *origin* of which may be indigenous, non-indigenous or unknown.
- ee. *Test* means evaluation of parents by comparing the performance of their offspring under more controlled conditions than exist for the parent(s), or other applicable tests which evaluate specific *character(s)* of the parents or the off-spring.
- ff. *Unit of measure* means a consistent volume measure; i.e., bushels, pounds, grams, number, cubic centimeters, etc.

3. CLASSES OF REPRODUCTIVE MATERIAL

- a. *Tested class* means that *forest reproductive material* came from tree(s) which have been *tested* for specific *character(s)* as determined by progeny or other applicable *tests* and under specified conditions. Further, such *forest reproductive material* is produced and processed in a manner assuring *genetic identity* common with the *tested* material, and, for nursery stock, that it was produced from *tested reproductive material*. Said *forest reproductive material* shall be labeled with a blue label stating "Tested". *Certifying agency* shall examine trees and *reproductive material*; exercise *field inspection*, *plant/warehouse inspection*, and *audit* all pertinent records involved.
- b. *Selected class* means that *reproductive material* came from tree(s) that were *selected* for specific *character(s)*. Two *subclasses* are recognized:
 - Subclass A: Reproductive material* is obtained from *selected* trees and, in addition for tree seed, the male parent(s) is also *selected*.

Subclass B: Applies to material from untested seed orchards, open pollinated seed from individual *selected* tree(s), and *seed production area(s)*.

Both *subclasses* shall be labeled with a green label stating "Selected" and the *subclass*. *Certifying agency* shall examine trees and *reproductive material*; *field inspection*, *plant/warehouse inspection*, and *audit* all pertinent records involved.

Selected Subclass A means that the donor or parents of the *reproductive material* are *selected*, known, and of record, but have no *test* results of record, and, for nursery stock, that it was produced from *Selected Subclass A* or better *reproductive material*.

Selected Subclass B means that only one parent of the tree seed is *selected*, known and of record and *reproductive material* has not been *tested*, and, for nursery stock, that it was produced from *Selected Subclass B* or better *reproductive material*.

- c. *Source Identified Class* means that the *reproductive material* came from within a *seed zone(s)* or portion thereof as defined by *legal description* and from within a 500-foot *elevation* increment(s) or *breeding zone(s)* or *code(s)*.

Subclass A: Personally supervised production.

Subclass B: Procedurally supervised production.

Both *classes* of said *reproductive material* shall be labeled with a yellow label stating "Source Identified" and the *subclass*. *Certifying agency* shall exercise *field inspection*, *plant/warehouse inspection*, and *audit*.

Source Identified Subclass A means that *applicant* and *certifying agency* personally know beyond a reasonable doubt the *seed zone(s)* or portion thereof and 500-foot *elevation* increment(s) within which cones and/or *reproductive material* were collected; and, for nursery stock, that it was produced from *Source Identified Subclass A* or better *reproductive material*. *Certifying agency* knows *location* from *applicant's* prior written plan of his *reproductive material* collecting and/or producing activities. For *Source Identified* subzone collections, a representative of the *producer*, whose major responsibility is observation of picker location, will make daily observations within the collection area.

Source Identified Subclass B means that *applicant* and *certifying agency* know *reproductive material* is identified as collected from within a *seed zone(s)* and from within a 500-foot *elevation* increment(s) and, for nursery stock, that it was produced from *Source Identified Subclass B* or better *reproductive material*.

- d. *Audit Class* means that the *applicant's* records of procurement, processing, storage and distribution state that the *reproductive material* was collected from within stated *seed zone(s)* or described portions thereof and from within 500-foot *elevation* increment(s), and, for nursery stock, *certifying agency* knows that it was produced from *Audit class* or better *reproductive material*. Containers of said *reproductive material* shall carry a serially numbered brown and white label stating "*Audit Certificate*". All records of the *applicant* for this *class* of *reproductive material* are subject to *audit*.

4. APPLICATION FOR FOREST REPRODUCTIVE MATERIAL CERTIFICATION

- a. The conditions of *applicant's* submittal and of *certifying agency's* acceptance of application are:

- (1) The application should show all *classes* for which certification services are requested.
 - (2) All *reproductive material* acquired or distributed by *applicant* of a type for which certification is requested is subject to *audit*.
 - (3) *Applicant* shall be responsible for payment of fees for certification services.
 - (4) *Applicant* is responsible for developing a record-keeping system and labels available and satisfactory to the *certifying agency*.
 - (5) *Certifying agency* reserves the right to refuse certification service to *applicant*.
 - (6) Application for *audit certification* of *reproductive material* shall be filed with *certifying agency* of the state in which warehouse, nursery, etc., is located with a copy to the *certifying agency* in the state where the *reproductive material* is collected.
- b. Timing of Application requests for Certification Services.
- (1) For *Source Identified Subclass A* and higher certification *class* the *applicant* will make application for service and present a written plan to the *certifying agency* two weeks prior to the beginning of the collection season. The written plan will include the following:
 - (a) For subzone collection, areas will be defined by *legal description*.
 - (b) Details of the collection organization including names of *buyers* and field supervisors/observers, estimated harvest volume, receiving station location(s) and other pertinent information.
 - (2) Application request for *Source Identified Subclass B* and lower *classes* for the year's production of *reproductive material* shall be received by *certifying agency* from *applicant* not later than three (3) days prior to initiation of collection, production, or propagation of *forest reproductive material*.
 - (3) Application requests for all other services shall be received by *certifying agency* from *applicant* not later than seven (7) days before need.
- c. The *certifying agency* establishes the fee schedule for certification services. These may be adjusted at the beginning of a crop year if certifying agency determines that costs are significantly more or less than anticipated, provided that increases shall not exceed 25 percent. They are attached as a separate page, entitled:

Forest Reproductive Material Certification Standards
Fee Schedule

- (1) Cones and Seed
 - (a) *Tested and Selected Classes* - The service includes review of *test plans*, *audit* of pertinent records and *field inspection* at the hourly job time rate shown in the current fee schedule.
 - (b) *Source Identified Classes* - The fee includes *field inspection* at the per bushel rate shown in the current fee schedule and *audit* of processing at the hourly rate also shown in the current fee schedule.

(c) *Audit Class* - The fee includes *audit* of *applicant's* field and processing records at the hourly rate shown in the current fee schedule.

(2) Trees

The fee includes the verification of the *source* of the trees from the seed *source*, stratification, sowing, bed identification, lifting, sorting, package identification, storing and/or transplanting.

(3) Not Entered for Certification

The fee for *audit* of *reproductive material* not entered for certification service, performed as required by, and satisfactory to the *certifying agency*, to exercise said *audit* simultaneously with *audit* of *reproductive material* which *applicant* has requested, is the hourly rate shown in the current fee schedule.

(4) The fee for certification *classes* applied for shall be charged whether or not material qualifies.

(5) The *certifying agency* may provide other services, such as training to comply with these standards; advising on the development of record-keeping systems directly connected with certification needs if requested by the *applicant*.

5. FIELD STANDARDS

a. *Tested and Selected classes* - *Applicant* shall maintain continuous record(s) satisfactory to *certifying agency* which maintain the identity of the *reproductive material* through all stages of production, collection, processing, storage, and disbursement from stores, and, in addition, such records as needed to trace the pedigree and document the performance of the *reproductive material*. The records shall include but are not limited to those involving:

(1) Selection, *location*, and *origin* of the parent trees.

(2) Pollen, seed, scions, etc., collection, processing, inventory, storage and use in tree improvement and breeding programs.

(3) Design, establishment and management of *test(s)* and the collection, analysis and interpretation of *test* data.

(4) Nursery stock production.

Certifying agency may inspect all phases of the field operation including periodic checks of parent trees, pollen and scion collections; pollinations; cone harvest, storage, processing and inventory/and *tests*, together with appropriate records.

b. *Source Identified Reproductive Material* - *Applicant* shall develop and make correct use of *collector* and *buyer* labels, *collector* registration, and transportation record, and for nursery stock, labels and records identifying the stock as originating from *Source Identified* or better *reproductive material*.

(1) *Subclass A*

- (a) Control of *collectors* shall be such that *applicant* and *certifying agency* personally know beyond a reasonable doubt the *seed zone* or *breeding zone* or *code* or portions thereof as delineated by *legal description* and 500-foot *elevation* increment or specified *elevation* increment for *breeding zone(s)* or *code(s)* within which *reproductive material* was collected. Control of *producers* of nursery stock shall be such that *applicant* and *certifying agency* personally know beyond a reasonable doubt that the nursery stock was produced from *Source Identified Subclass A* or better *reproductive material*.
- (b) *Applicant* shall provide *certifying agency* with a written *reproductive material* collection and/or nursery stock production plan, (not later than 14 days) prior to collection of *reproductive material* or production of nursery stock.
- (c) Further, all following requirements of *Subclass B* shall be met.

(2) *Subclass B*

- (a) *Applicant* requests for certification services must be received three (3) days prior to initiation of collection and/or nursery stock production.
- (b) All *collectors* shall be supervised sufficiently so that either *buyers* know where *reproductive material* was collected, or *buyers* shall purchase all *reproductive material* that *collectors* present for sale without differential of acceptance stated or implied, as to *source, location, seed zone* or *elevation*.
- (c) *Buyer* shall require *collector* to sign *collector's* registration record prior to collection of *reproductive material*. He shall also issue *collector's* labels, and direct *collector* to complete them and place them in or attach them to each container of *reproductive material* before it is transported from point of collection. Coincident with purchase of *reproductive material*, he shall complete description on labels including species, *source* by *seed zone, breeding zone* or *code, elevation* increment, special collection area if any, certification class, date of purchase and his signature or initials.
- (d) *Buyer* shall maintain a *buyer* record on a form for all *reproductive material* received, listing species, *seed zone, elevation* increment, units of *reproductive material, date* of purchase, *collector's* name and *buyer's* name.
- (e) *Buyer* shall maintain transportation record showing species, *seed zone, elevation* increment, units of *reproductive material*, and date shipped.
- (f) *Producers* of nursery stock shall be supervised sufficiently so that *applicant* knows that the stock was produced from *Source Identified Subclass B* or better *reproductive material*.
- (g) The *certifying agency* shall advise the *applicant* of problems or conditions that effect competent verification or execution of these standards by *certifying agency* and *applicant*.
- (h) Unless other arrangements are made, the *certification class* shown by the *producer* on all containers of *reproductive material* must be verified by the *certifying agency* before being transported from the receiving station. The *producer* is responsible for evidence of verification of the *certification class* applied for.

c. *Audit Class Reproductive Material*

- (1) *Buyer* shall require *collector* to sign *collector's* registration record and to complete *collector's* labels prior to purchase of *reproductive material*.
- (2) *Buyer* shall maintain a *buyer* record on a form for all *reproductive material* received, listing species, *seed zone*, *elevation* increment, units of *reproductive material*, date of purchase, *collector's* name and *buyer*.
- (3) *Buyer* or other shipper of *reproductive material* shall maintain a transportation record showing species, *seed zone*, *elevation* increment, units of *reproductive material* and date shipped.
- (4) *Producers* of nursery stock shall maintain auditable records identifying the stock as being produced from *Audit Class* or better *reproductive material*.

6. PROCESSING STANDARDS

- a. *Applicant* shall maintain a continuous record for each *lot* and *batch* of *reproductive material* at each plant or warehouse, showing *lot* and *batch* number, species, *seed zone*, *breeding zone* or *code*, *elevation* increment, date received and *units* of *reproductive material*. *Reproductive material* stored at plant or warehouse prior to processing shall be assembled by *lot* or *batch* and so arranged as to be reasonably accessible for *audit*. The auditor will advise *producer* before making changes in the *certification class* of cones or seed offered by the *producer*.
- b. *Labels* shall be maintained on containers until *reproductive material* is processed. During processing, *labels* shall be removed and immediately deposited in a container marked with the *lot* or *batch* designation or *code*. Upon completely emptying the containers for each *lot* or *batch* of *Audit* or *Source Identified classes*, the package of labels from it shall be closed and set aside for examination by the *certifying agency* auditor.

All labels for *Tested* and *Selected classes* shall be attached to or placed inside of the seed containers by the *producer* for examination by the *certifying agency* auditor. These labels will remain with the seed until the *lot* is depleted.

- c. All *reproductive material* shall be handled in a manner to prevent *lot* mixture and maintain *lot* identity. All machinery, containers, and equipment shall be thoroughly cleaned before processing another *lot* or *batch*.
- d. Specific requirement: *Certifying agency* may refuse to certify *reproductive material* failing to meet the following minimum standards: Other distinguishable species or *cultivars*: Seed 0.5% by weight; trees, cuttings, scions, etc., 1% by number; pollen 1% by number.
- e. Labeling and sealing of *Tested*, *Selected* or *Source Identified reproductive material* shall be done by the *certifying agency*.

Labeling of *Audit Class reproductive material* will be done by the *applicant* with the label affixed to the container, provided that, for small sales (any quantity of *reproductive material* less than a full container of a size normally used by the *applicant*) the label may be affixed to the invoice or sales slip.

- f. For each *lot* of *Tested* or *Selected reproductive material*, a *Certificate of Genetic Identity* shall be prepared and affirmed by the *certifying agency*, must be signed and placed in or attached to each container before other labels or seals are affixed. The *Certificate of Genetic Identity* shall include the following information:

- (1) For both *Tested* and *Selected reproductive material*, the *lot* number, *breeding zone*, or *code* and information on:
 - (a) The donor or parents which produced the *reproductive material* including their selection generation, type of selection made, *selected character(s)*, *seed zone(s)*, and *elevation* increment(s) in which the selection was made, and selection procedure.
 - (b) For each prior selection generation, the same information.
 - (c) For sexual *reproductive material*, whether pollination was controlled or not controlled. If not controlled, the pollen situation; if controlled, the pollen or pollen mix used, including identification of pollen parent(s), also the number of maternal parents, and if applicable, the crossing design used.
- (2) For *Tested Reproductive Material Only*
 - (a) A progeny, clonal, or other applicable *test* plan shall normally be submitted to the *certifying agency* for review and acceptance before installation. Acceptance of the *test* plan may be made after installation providing requirements in 5a and 6f(2)(b) are met. *Applicant* may request assistance from the *certifying agency* in the development of a plan.
 - (b) The plan shall include in the *test* both randomization and replication for the material to be *tested* and the identity and background of the check material to be used.
 - (c) Complete randomization and balanced, randomized blocks are recommended. The actual design of the established *test* must be recorded in detail.
 - (d) Trees to be planted for *tests* must be grown together in soil as uniform as possible, or, if they are grown in different soils, must be so distributed that like proportions of all clones or progenies are produced in each distinct *class* of soil.
 - (e) *Test* measurements are to be presented in numerical form. Each *character* to be evaluated is to be measured separately. The *genetic superiority* as compared with the check must be clearly demonstrated for at least one of the *characters* being *tested*. *Characters* of economic importance in forestry identified in the *test* must be clearly reported if they are significantly inferior at the 95% confidence level of those of the check material.
 - (f) The results of the *test* measurements and data shall be readily available to the *certifying agency* and the prospective user or purchaser.
- g. A document, acceptable to the *certifying agency* for informing the purchaser of species and certification information of each item, and for auditing purposes, shall be issued by the *producer* for each sale of *Tested*, *Selected*, *Source Identified*, and *Audit Class reproductive material*. Such document may be a *Certificate of Provenance* for *Tested*, *Selected* or *Source Identified reproductive material*, or an invoice, shipping order, or sales slip for *Audit Class reproductive material*.
- h. If a *lot* is composed of *reproductive material* from more than one *seed zone*, *elevation* increment or *code* in excess of seven percent (7%) of contiguous *seed zones*, *elevation* increments, or *codes*, or if in excess of two percent (2%) of other than contiguous *seed zones*, *elevation* increments, or *codes*, then the certification label must show all *seed zones*, *elevation* increments, or *codes* either with or without the percentage of each.

- i. The allowance for accidental mixing of non-certifiable *reproductive material* with *Audit Class*, or non-certifiable or *Audit Class reproductive material* with *Source Identified Classes* is 2%. When in excess of 2% the *lot* must drop to the lowest *class* represented.

No mixing of lower *classes* with *Selected* or *Tested classes* is permissible.

7. MIXING OF LOTS

When *lots* collected in the same or different crop seasons are deliberately mixed, the new *lot* shall be given a new identification number and certification label. The certification *class* shall drop to the lowest certification *class* represented in the new *lot*.

For the *Tested* and *Selected classes*, the certification label must show the components of the new *lot* and the percentage of each in the new *lot* or this information must be contained on a properly executed *Certificate of Genetic Identity* placed in or attached to each container of the *lot* before other labels or seals are affixed.

For the *Source Identified classes* and the *Audit class*, the certification label must show the components of the new *lot* and the percentage of each in the new *lot*.

Lots being mixed shall be uniformly blended into the new *lot* so that they are near equally represented throughout the new *lot*.

8. REJECTION OF CERTIFICATION

Any *lot* may be rejected if *certifying agency* determines that said *lot* fails to meet these standards. The privilege of certification may be withdrawn by *certifying agency* for a definite period of time in case of flagrant violations of these standards. If *applicant* believes an erroneous decision has been rendered, he may make written appeal to *certifying agency* for review by its governing body.

9. AFFIRMATION BY CERTIFYING AGENCY

Affixing of label or label and seal to container of *forest reproductive material* or to a *Certificate of Provenance* or *Certificate of Genetic Identity* by the *certifying agency* affirms that to the best of its knowledge the *reproductive material* meets these *Forest Reproductive Material Certification Standards*.