

PRE-VARIETY GERMPLASM CERTIFICATION STANDARDS

I. APPLICATION OF GENETIC CERTIFICATION STANDARDS (including changes effective Jul, 2011)

- A. The Genetic Certification Standards are basic.
- B. The Genetic Standards are modified as follows:
1. Section II. Eligibility Requirements for Varieties.
 - a. Eligible species include indigenous or non-indigenous trees, shrubs (including vines), or herbaceous plants (forbs and grasses).
 - b. These standards address seeds and seedlings, and other propagating materials of native and naturalized species that have not been released as a variety. Germplasm types are recognized as follows:
 - (1) Source Identified Germplasm
Source Identified propagating materials are seed, seedlings, or other propagating materials that are an unrestricted representation of a plant population on a given site, and for which no selection or testing of the parent population or its progeny has been made, produced so as to ensure genetic purity and identity from either:
 - (a) Rigidly defined natural stands or seed , production areas or
 - (b) Seed fields or orchards.
 - (2) Selected Germplasm
Selected propagating materials shall be the progeny of phenotypically selected plants of untested parentage that have promise but not proof of genetic superiority or distinctive traits, produced so as to ensure genetic purity and identity from either:
 - (a) Rigidly defined natural stands or seed production areas, or
 - (b) Seed fields or orchards. This definition is equivalent to the OECD "Untested Seed Orchard" category and may be labeled as such by special tag if required (see item 6.b)
 - (3) Tested Germplasm
Tested propagating materials shall be the progeny of plants whose parentage has been tested and has proven genetic superiority or possesses distinctive traits for which the heritability is stable, as defined by the certifying agency, but for which a variety has not been named or released. These materials must be produced so as to ensure genetic purity and identity from either:
 - (a) Rigidly controlled and isolated natural stands or individual plants, or
 - (b) Seed fields or orchards.

Methods used and monitoring of selection and testing of parent material to qualify for different germplasm types shall be determined by the certifying agency for each species or group of species.

2. Section III. Designation of Germplasms of Seed; Appendix I (2).

The terms Breeder, Foundation, Registered, and Certified designate and define classes of named and released varieties and are not applicable to pre-variety germplasms. Source Identified, Selected, and Tested germplasm types use numbers to designate generations.

The generation is not defined for indigenous or naturalized parent plants in an unrestricted wildland plant population. Seeds harvested from such populations in a non-selective manner are designated Generation Zero (abbreviated G0) since they are a natural, unrestricted representation of the parent plants. The germinant plants from this seed are also designated G0, from which G1 seeds are harvested. G1 seeds produce G1 plants from which G2 seeds are harvested, and so on.

The generation is defined as Generation 0 for parent plants preferentially selected from a cultivated or wildland population; this definition follows the convention for cultivated crop development. The seeds harvested from such G0 parent plants are designated G1. The germinant plants from this seed are also designated G1, from which G2 seeds are harvested. G2 seeds produce G2 plants from which G3 seeds are harvested, and so on.
3. Section IV. Limitations of Generations
 - a. Limitation of generations for pre-variety germplasm is not required, but may be specified by the original applicant/developer of a designated germplasm. This limitation may be amended by the originator/developer.
 - b. The appropriate seed generation number for a designated germplasm must be tracked by the certifying agency. Tracking of asexual generations is optional; otherwise the asexual material retains the generation of the parent plants.

4. Section V. Production of Seed (B)
An individual plant, clone, or stand of plants (or field or orchard) may be certified in producing Source Identified, Selected, or Tested seed. Seed production zones and/or breeding zones may be defined as a unit of certification for Source Identified and Selected seed.
5. Section VI. Production of Seed (C)
 - a. For Source Identified seed collected from natural stands, verification of the collection site is required. Compliance with regard to correct identification of species, location of natural stand, and seed yield must be verified by whatever means is deemed efficient and enforceable by the certifying agency.
 - b. For Tested seed collected from natural stands, at least one field inspection shall be made prior to pollination. At this time, compliance with regard to roguing and isolation as covered by the applicable agency standards will be checked. For Selected and Tested seed, an inspection will be made just prior to seed maturity or during harvest.
 - c. All germplasm types grown in seed fields or orchards shall follow established certification requirements and standards for similar crop varieties if applicable, or those developed by a certifying agency for a specific species.
 - d. Producers of seedling or otherwise propagated nursery or container stock shall be supervised sufficiently so that the certifying agency knows that the stock was produced from the germplasm type claimed.
6. Section VII. Labeling
 - a. The following tag or label colors shall apply:
Source Identified Germplasm - Yellow
Selected Germplasm- Green (Note exception in 6b. below)
Tested Germplasm- Blue
 - b. Format of face side of label: The respective seed germplasm type (TESTED, SELECTED, OR SOURCE IDENTIFIED) must be printed on the top line across the tag or label.

Exception: To satisfy requirements of the OECD Scheme, seed from Selected Germplasm seed orchards may be tagged with a pink tag having UNTESTED SEED ORCHARD, printed on the top line across the tag or label.
 - c. Content
The generation of the seed may be indicated in the center of the tag along with such information as species, selection number, lot number, location, elevation, site index, seed zone and/or breeding zone, etc. If a limitation of generations has been specified for a designated germplasm, then the generation of the tagged material and the number of increase generations permitted shall be stated on the certification tag, e.g. G1/G3 (read "generation one of three generations permitted). Accelerated downgrading of generation(s) can be specified on the tag to indicate the material is not eligible for further increase, e.g. G3/G3.

A Selected or Tested Germplasm may not be labeled as Source Identified Germplasm.
7. Section VIII. Sampling and Testing
For seed of species not covered by the rules for testing seeds of the Association of Official Seed Analysts, the analyses and testing shall be in accordance with the rules of the International Seed Testing Association or appropriate state or federal laboratories as determined by the certifying agency.

II. LAND REQUIREMENTS

- A. For natural stands of the Tested germplasm type, the exact geographic source of the parent plants and the stand history must be known. Location (designated by section or comparable land survey unit) and elevation (nearest 500 feet) of the site of seed production must be shown on the tag.
- B. Location where Selected or Source-Identified seed was collected from natural stands shall be defined by means of administrative, geographic, latitudinal, or other appropriate boundaries or descriptions judged to be significant by the certifying agency. State, county (or parish, seed production area, or geographic zone), and elevation (nearest 500 feet) is the minimum required to be shown on the tag.
- C. For all germplasm types where seed or other propagating materials are produced in artificially established fields or orchards, the specific geographic origin of the parent material must be known and may be listed on the tag. The location printed on the tag shall be the location (specific site or county/parish or seed production area/zone) of the field or orchard.

III. FIELD STANDARDS

A. Isolation

1. For rigidly controlled natural stands of Tested, Selected, or Source Identified germplasm types, an adequate isolation zone shall be maintained free of off-type plants and other cross pollinating species. The isolation distance shall be set for each species by the certifying agency.
2. There shall be no isolation requirements for Selected or Source-Identified seed collected from natural seed zones and/or breeding zones.
3. Isolation for all germplasm types when grown in seed fields or orchards shall follow isolation requirements for similar crop varieties if applicable, or those developed by a certifying agency for a specific species.

B. Specific

1. For all germplasm types grown in a seed field or orchard, off-type plants (and plants of inseparable other species or hybridizing species) are to be defined and appropriate tolerance set by the certifying agency.
2. Design and methods for establishing seed fields and orchards and the selecting and testing of plant material shall be in accordance with the requirements of the certifying agency for each species or group of species.

AOSCA PRE-VARIETY GERMPLASM (SOURCE IDENTIFIED, SELECTED, TESTED)

RECOMMENDED MINIMUM GENETIC REQUIREMENTS AND STANDARDS*

Species ¹		G1				G2				G3				G4, etc ²			
Repro.	Habit	L ³	I ⁴	F ⁵	S ⁶	L	I	F	S	L	I	F	S	L	I	F	S
X Poll.	Ann.	3	900-600	1000	0.25	2	450-300	500	0.5	1	330-165	250	0.75	1	165-165	250	0.75
X Poll.	Per. ⁷	3	900-600	1000	0.25	2	450-300	500	0.5	1	330-165	250	0.75	1	165-165	250	0.75
Self Poll.	Ann.	3	0 ⁸	1000	0.25	2	0	500	0.5	1	0	250	0.75	1	0	250	0.75
Self Poll.	Per. ⁷	3	0	1000	0.25	2	0	500	0.5	1	0	250	0.75	1	0	250	0.75

*Where applicable, a pre-variety germplasm entity may be subject to AOSCA genetic requirements and standards for released varieties of comparable individual species or crop groupings (e.g. Alfalfa, Grass or Woody Plants and Forbs). Seeds harvested from wildland plant populations should utilize the G1 seed standards (footnote 6), but other requirements and standards are not applicable. These recommended requirements and standards do not apply to vegetative reproduction.

1. Species mode of sexual reproduction (cross or self pollinated) and habit (annual or perennial).
2. The number of generations may be limited if specified by the applicant/developer (refer to Pre-Variety Germplasm Certification Standards, Sec. I.B.3.a,b.; 6.c.). When over 50% of the seed producing plants in a cultivated stand are volunteers (progeny of plants from the original seeding), then the generation shall be downgraded.
3. Land history: number of crop years that must elapse between removal of a species and replanting a different germplasm entity of the same species on the same land, unless cropping practices serve to diminish the seed reservoir more quickly.
4. Isolation in feet from any contaminating sources of pollen.
 - (a) The first number is for fields less than 5 acres; the second number is for fields of 5 acres or more.
 - (b) Isolation is required between all seed fields of the same species, except all types of Natural Track germplasms when from the same specified source.
 - (c) Isolation is not required between fields of different generations of the same germplasm entity (e.g., same Germplasm ID)
 - (d) Border removal applies to grass seed fields of 5 acres or more (for reference see AOSCA Seed Certification Handbook, Appendix II, footnote 20).

(e) A Source Identified seed field located within the same geographic source area as was identified for the germplasm entity being increased, does not require isolation from naturally occurring plants of the same species adjacent to the seed field.

(f) Isolation is required between different species known to readily cross-pollinate. A species, for which its breeding system is unknown, will be treated as a cross-pollinating species for the purposes of these standards.

5. Field standards: minimum number of plants or heads in which one plant or head of an off-type or other germplasm entities of the same species is permitted.
6. Seed standards: maximum percentage of seed of off-types or other germplasm entities of the same species.
7. The life of a cultivated stand is not limited unless specified by the original applicant/developer of a designated germplasm.
8. Distance adequate to prevent mechanical mixture is necessary.

IV. SEED STANDARDS

Seed standards are optional and may be set by the certifying agency. However, state, and federal laws regarding analysis labeling must be observed.