



Certification Standards: The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the standards for certified sunflower.

Definitions:

- a. A line: line or population which is male sterile.
- b. B line: male fertile line or population capable of maintaining male sterility.
- c. Restorer line: line or population used as male parent that has the capability of restoring fertility to male sterile lines/populations when crossed to them.
- d. Self-incompatible line: male fertile line or population incapable of self-pollination due to self-incompatibility.
- e. Self-compatible line: male fertile line or population that is capable of self-pollination.

Seed Requirements: Breeder or Foundation seed must be used to establish all fields of hybrid sunflower for certification. The direction of the cross must remain unchanged throughout the certification program unless adequate data is provided to the certification agency to show that no change in variety performance results from the reversal of parentage.

Varieties Certified: Varieties and classes eligible for planting may be found in the OSCS Handbook.

Field History: Land must not have grown or been seeded to sunflowers during the previous year. Hybrid sunflowers must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

Field Inspections: Includes all parent lines. At least two field inspections shall be made, one during the very early bloom stage and the second during full bloom. At least 50% of the male parent plants must be flowering and producing pollen when the female parent is in full bloom. All off-type plants should be removed before any pollination has taken place. Volunteer contaminating plants may be cause for rejection of the seed field. The field application must be submitted by June 15th, or within 30 days of planting if planted on or after June 1st.

Isolation¹: Fields must be isolated from other sunflower fields by a minimum of 1.25 miles. Isolation between fields of different classes but of the same variety must be adequate to prevent mixtures. Flowering plants of other varieties, hybrids, strains, volunteer sunflowers, non-certified crops of the same variety, hybrid or wild annual *Helianthus* species within that isolation distance must not exceed 1:5000 plants based on the size of the production field.

Weeds: Fields for certification should be free of Prohibited noxious weeds and Restricted noxious weeds that are not easily separated during conditioning.

Field Standards: Varieties cannot always be differentiated at field inspection. When differences can be distinguished, the maximum mixture of other varieties permitted in the crop inspected is shown in the table below.

Category of Impurity	Maximum Plants Permitted in Female Seed Parent		Maximum Plants Permitted in Pollinating Parent
	Foundation	Certified	
Off-types ²	1:2000	1:2000	1:2000
Pollen shedding female plants	1:1000	4:1000	-----
Total (including above)	1:1000	4:1000	1:2000

Hybridity:

- a. Percent hybrid seed shall not be less than 75%.
- b. Percent hybrid seed shall be determined by a method of acceptable accuracy that can be reproduced by OSCS.
- c. A declaration stating the minimum percent hybrid seed and the method of determining the hybridity must be submitted by the applicant to OSCS prior to final certification.

(continued)

¹ A normal plant population in a production field is 20,000 plants per acre. A 1:5000 tolerance would be 4 plants per acre. Therefore a 50 acre field would have a maximum tolerance of 200 flowering other sunflower plants within the isolation distance of 1.25 miles.

² Includes all off-types other than A-line pollen shedders.

If the field inspection shows one or more of the following, the applicant may request that seed certification be based on results of a pre-certification grow-out test approved by Oregon Seed Certification Services.

- a. Inadequate isolation.
- b. Too few male parent plants shedding pollen when female parent plants are receptive.
- c. Excess off-types not to include wild-types.

In such cases at least 2,000 plants must be observed and meet the following standards before hybrid and inbred seed can be certified from fields with problems listed above.

Factor	Maximum Permitted	
	Hybrid	Inbred
Sterile Plant	5.00%	-----
Sterile or Fertile Plants	-----	5.00%
Morphological Off-Type	0.50%	0.50%
Wild Types	0.20%	0.20%
Total (including above types)	5.00%	5.00%

For non-oil types, seed that contains not more than 15% sterile plants may be certified. If the seed contains 85%-95% hybrid plants, the percentage of hybrid shall be shown on the certification label.

Seed Standards: (Minimum Sample Size – 1 pound)

Factor	Foundation (White Tag)	Certified (Blue Tag)
Pure seed, minimum	98.00%	98.00%
Other crops, maximum	0.02%	0.20%
Other varieties ³ , maximum	0.02%	0.10%
Inert matter, maximum	2.00%	2.00%
Weed seed ⁴ , maximum	None	0.10%
Germination, minimum	85%	85%

³ Not more than one purple or white seed per pound.

⁴ None of the prohibited weeds listed in Section V in the OSCS Handbook, nor any St. Johnswort allowed in any class of seed.