

Highlighted areas and brown strike-throughs are the sub-committee proposals

Red track changes are Mike Moore's comments proposed and accepted at the Western Region Meeting.

Deletion of 'glume color' and insertion of 'varietal purity' change in section I.B.3.a. recommended and accepted at Western Region Meeting.

**CYTOPLASMIC MALE STERILE HYBRID WHEAT
CERTIFICATION STANDARDS**

(including changes effective June 2021)

I. APPLICATION OF GENETIC CERTIFICATION STANDARDS

- A. The general requirements for seed certification found in Section I through IV of the Genetic and Crop Standards apply ~~(are basic)~~ to all crops, and together with the following specific standards, constitute the certified Cytoplasmic Male Sterile Hybrid Wheat standards.
- B. The Genetic Standards are modified as follows:
 - 1. Section II. Eligibility Requirements for Varieties. Standards applicable to specific crop varieties shall apply to the production of pollinator lines.
 - 2. Section III. Designation of Classes of Seed.
 - a. A commercial hybrid is one to be planted for any use except seed production.
 - b. Only the ~~class~~ Certified ~~class~~ is recognized in the production of commercial hybrid seed. ~~Only the Foundation class is recognized in production of parental types.~~
 - c. A ~~Certified~~ commercial hybrid must be produced from certified Foundation class seed stocks that have been field inspected. These seed stocks shall consist of ~~male-steriles~~ inbred lines, and/or hybrids.
 - d. Definition of parental types
 - i) Seed Parent (A-line): Cytoplasmic male sterile line (CMS), which when pollinated by a Restorer, produces hybrid seed.
 - ii) Maintainer (B-line): A line with normal fertile cytoplasm used as a pollinator to increase Seed Parent (A-line) seed while maintaining the male sterility of the CMS Seed Parent.
 - iii) Restorer (R-line): Any male fertile line possessing nuclear restoration genes used as a pollinating male parent in the production of commercial hybrid seed.
 - 3. Section VI. Production of Seed – Seed production fields or parts of fields shall be inspected as follows:
 - a. A X B production: Seed parents shall be inspected ~~at least once during anthesis three (3) times.~~ ~~The first inspection shall occur after heading but before anthesis begins to check for off-type plants, shedders and proper isolation. Additional inspections may be required at the discretion of the certifying agency to determine shedder frequency or glume color.~~ ~~varietal purity.~~
 - ii) ~~Two inspections should occur during anthesis to check for shedders in the Seed Parent (A line), the presence of which shall immediately be communicated with the seed producer to allow for roguing.~~
 - b. Male lines (Maintainers and Restorers) shall receive at least one inspection for purity after the crop is fully headed.
 - c. Commercial hybrid production fields (~~AxR~~) shall be inspected at least once.

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II. LAND REQUIREMENTS

- A. Pollinator lines planted for the production of Foundation class seed shall be planted on land on which another kind was grown for the two ~~previous crop~~ years.
- B. Maintenance of sterile lines for the production of Foundation class seed shall be planted on land on which another kind was grown for the two ~~previous crop~~ years.
- C. Certified class commercial hybrid fields shall be planted on fields on which the previous crop was another kind.

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III. FIELD STANDARDS.

- A. General
 - 1. Isolation
 - a. (AXB): ~~Fields or parts of fields producing seed parents to be used for the production of hybrid wheat must be so located that the seed parent is not less than 2,640 ft. from fields of other kinds~~ or varieties which would provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification. Seed Parent and Maintainer lines shall be separated from each other by an unplanted strip of ground adequate to prevent mechanical mixture.
 - b. Maintainer (B-Line) and Restorer (R-Line) increases. Fields or parts of fields ~~producing wheat pollinator lines must be located so that the line is not less than 30 ft. from fields of other kinds or varieties which could provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification.~~
 - c. Commercial Hybrids (~~AxR~~): Fields or parts of fields ~~producing wheat hybrids~~ must be so located that the seed parent is not less than 330 ~~ft.~~ from fields of other kinds or varieties which would provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification. Seed Parent and Restorer lines shall be separated from each other by an unplanted strip of ground adequate to prevent mechanical mixture.

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B. Specific
1. Pollen Shedders in Sterile Seed Parent

Crop	Maximum ratio of heads shedding pollen permitted at any field inspection
Foundation Seed Parent	1:3,000

2. The seed parent, the pollinator, and the commercial hybrid shall meet the following:

Factor	Maximum Permitted - Ratio of Heads	
	Foundation Class A, B, R - Lines	Commercial Hybrid
Other varieties	1:3,000	1:3,000
Inseparable other crops	1:30,000	1:5,000

IV. SEED STANDARDS

Factor	A, B, R - Lines		Commercial Hybrid
	Foundation	Certified	
Pure seed (minimum)	96.00%	96.00%	
Inert matter (maximum)*	4.00%	4.00%	
Total other crop seeds (maximum)**	0.06%	0.25%	
Other varieties (maximum)	0.05%	0.20%	
Other kinds (maximum)	0.01%	0.05%	
Germination (minimum)	85.00%	85.00%	

*Shall not contain more than 2% inert matter other than broken seed.

**For other small grain, the maximum of 1 per pound in Foundation, and 5 per pound in the Certified hybrid must not be exceeded. This does not apply to seeds of winter grains in spring grains and vice versa, except in areas where climate conditions do not take care of the situation.

Deleted: Diseases***

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Deleted: ***If chemically controllable seed-borne diseases are noted upon field inspection or laboratory observation, seed treatment is recommended.¶