

CHAPTER 74-03-14.1
SPECIFIC CROP REQUIREMENTS - CYTOPLASMIC MALE STERILE HYBRID WHEAT

Section

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74-03-14.1-01. General requirements.

The following genetic standards are applicable for the production of parental lines and hybrids of wheat produced in alternating strips of cytoplasmic male-sterile seed parent and a fertility restorer line.

1. **Eligibility requirements for varieties.** Standards applicable to wheat varieties apply to the production of pollinator lines.
2. **Definition of parental types.**
 - a. **Maintainer (B-line).** A line with normal fertile cytoplasm which is used as a pollinator to increase the seed parent.
 - b. **Seed parent (A-line).** A cytoplasmic male-sterile line (CMS), which is genetically identical to the maintainer line that when pollinated by a restorer, produces hybrid seed.
 - c. **Restorer (R-line).** Any male fertile line possessing nuclear restoration genes used as a pollinator in the production of commercial hybrid seed.
3. **Eligible seed classes.**
 - a. Only the certified class is recognized in the production of commercial hybrid seed. A commercial hybrid is planted for any use except for seed production. To be certified, a commercial hybrid must be produced from foundation class seed stocks. These seed stocks must consist of male steriles, inbred lines, and/or hybrids.
 - b. Only the foundation class is recognized for parental lines.

History: Effective July 1, 2022.

General Authority: NDCC 4.1-52-10

Law Implemented: NDCC 4.1-52-10, 4.1-53-42

74-03-14.1-02. Land requirements.

1. Maintainer and restorer lines are not eligible for foundation class if planted on land on which the same kind was grown the previous two years unless the previous crop was the same variety and was inspected for certification.
2. Seed parents are not eligible for certification if planted on land on which the same kind was grown the previous two years.
3. Commercial hybrids are not eligible for certification if planted on land on which the same kind was grown the previous year.

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General Authority: NDCC 4.1-52-10

Law Implemented: NDCC 4.1-52-10, 4.1-53-42

74-03-14.1-03. Field inspection.

Fields for the production of parental lines utilized in hybrid wheat production must be inspected as follows. Roguing to remove undesirable plants must be done before field inspection. Rogued plants must be removed from the field.

1. AxB production. Seed parents must be inspected at least once during anthesis 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 varietal purity.
2. Maintainers and restorers. Male lines must be inspected at least once for purity after the crop is fully headed.
3. Commercial hybrid production fields must be inspected at least once.

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General Authority: NDCC 4.1-52-10

Law Implemented: NDCC 4.1-52-10, 4.1-53-42

74-03-14.1-04. Field standards.

1. Isolation.

- a. Seed parent increases (AxB). Fields or parts of fields acceptable for production of seed parents to be used for the production of commercial hybrid seed must be so located that the seed parent is not less than two thousand six hundred forty feet [804.67 meters] from fields of other kinds or varieties that could provide a source of contamination, or from fields of the same variety that do not meet varietal purity requirements for certification. The A-line and B-line must be separated by an unplanted strip of ground adequate to prevent mechanical mixture.
- b. Maintainer and restorer increases. Fields or parts of fields acceptable for production of pollinator lines must be so located that the line is not less than thirty feet [9 meters] 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. Before inspection, the field must be isolated from inseparable crops by a strip at least five feet [1.52 meters] wide to prevent mechanical contamination.
- c. Commercial hybrids. Fields or parts of fields acceptable for production of commercial hybrid seed must be no less than three hundred thirty feet [100.58 meters] from fields of other kinds or varieties that 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 must be separated from each other by an unplanted strip of ground adequate to prevent mechanical mixture.

2. Specific field standards.

Factor	A-Line Foundation	B- and R-Lines Foundation	Commercial Hybrid Certified
Pollen shedders	1:3,000	N/A	N/A
Other varieties *	1:3,000	1:3,000	1:3,000
Inseparable other crops	1:30,000	1:30,000	1:5,000
Prohibited noxious weed seeds **	none	none	none

*Other varieties include plants that can be differentiated from the variety being inspected,

but may not include variants that are characteristic of the variety.

**The tolerance for prohibited or objectionable weeds, or both, in the field will be determined by the inspector.

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74-03-14.1-05. Seed standards.

A variety identification test is required for A-, B-, and R-lines of wheat. A seed count is required on all hybrids.

Factor	Standards for Each Class	
	A-, B-, and R-Lines	Commercial Hybrid
Pure seed (minimum)	Foundation 99.0 percent	Certified 99.0 percent
Total weed seeds (maximum)	0.10 percent	0.10 percent
Other varieties *	0.005 percent	0.05 percent
Other crop seeds (maximum)	0.01 percent	0.08 percent
Inert matter (maximum) **	1.0 percent	1.0 percent
Prohibited noxious weed seeds	none	none
Germination	85.0 percent	85.0 percent

*Other varieties include plants that can be differentiated from the variety being inspected, but may not include variants that are characteristic of the variety.

**Inert matter may not include more than 0.5 percent of material other than seed fragments of the variety under consideration.

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