

CSGA GUIDELINE: Isolation Requirements and Maximum Impurity Standards for Other Crop Kinds in Forage and Turf Grasses and Forage Legumes

GUIDELINE INTRODUCTION

The certification requirements and standards for pedigreed seed crop production of forage and turf grasses and forage legumes can be found in Sections 6 and 7 of the [Canadian Regulations and Procedures for Pedigreed Seed Crop Production](#) (Circular 6).

This guideline was developed by the Canadian Seed Growers' Association (CSGA) to be used in conjunction with the revised version of Circular 6 published on February 1, 2024, to provide additional guidance on pedigreed seed crop production of those species.

This document provides guidance regarding isolation requirements and maximum impurity standards for other crop kinds related to species that may readily cross-pollinate with one another and species with seeds that are considered difficult to distinguish from one another in a lab test.

DEFINITIONS

- **Contaminant:** Unintended/undesirable plant or seed of another crop kind where the other kind will readily cross-pollinate with the inspected crop (i.e., plants in the field) or seeds of the other kind are considered difficult to distinguish in a lab test or difficult to separate during seed cleaning from seeds of the inspected crop.

CONTAMINANT TABLES

Contaminant tables have been added to the certification requirements for Bentgrass, Bluegrass, Bromegrass, Fescue, Ryegrass, and Wheatgrass (see Appendix A for a summary of contaminant tables). Each crop kind with a separate column in the table is considered a different crop kind; for example, Creeping Red Fescue and Tall Fescue are two different crop kinds.

In the contaminant tables, other crop kinds are categorized as contaminant species where:

- a. The other kind (contaminant) will readily cross-pollinate (CP) with the inspected crop;
- b. Seeds of the other kind (contaminant) are considered difficult to distinguish (DTD) in a lab test from seeds of the inspected crop; and,
- c. Seeds of the other kind (contaminant) are considered difficult to separate (DTS) from seeds of the inspected crop.

In all cases where the contaminant will readily cross-pollinate with the inspected crop, the contaminant also has seeds that are considered difficult to distinguish from seeds of the inspected crop (i.e., CP/DTD, no cases where it is CP only), e.g., Crested and Siberian Wheatgrass.

However, there are some cases where the contaminant will not cross-pollinate with the inspected crop, but the seeds of the contaminant and the inspected crop are considered difficult to distinguish from one another in a lab test (i.e., DTD only), e.g., Hard Fescue and Sheep Fescue.

And there are many cases where the contaminant will not readily cross-pollinate, and the seeds of the contaminant and inspected crop are not considered difficult to distinguish from one another but the seeds are considered difficult to separate from one another (i.e., DTS only), e.g., Crested Wheatgrass and Slender Wheatgrass.

ISOLATION REQUIREMENTS

The isolation requirements to fields of the other kind (contaminant) varies depending on the category of the contaminant.

- a. Where the contaminant will readily **CP** (CP/DTD because there are no cases where it is CP only), a greater isolation distance (e.g., 50 m) is required to the other kind to maintain varietal purity (i.e., equivalent to the isolation required to other varieties of the same crop kind).
 - For example, a Creeping Red Fescue seed crop for Certified production requires 50 meters to a crop of Chewings Fescue.
- b. Where the contaminant is **DTD only** (the contaminant will not readily CP), a smaller isolation distance of 2 meters is required to maintain mechanical purity (previously, 3 meters was required for mechanical purity).
 - For example, a Creeping Red Fescue seed crop for Certified production requires 2 meters to a crop of Sheep Fescue.
- c. Where the contaminant is **DTS only** (the contaminant will not readily CP, and the seeds of the contaminant and inspected crop are not DTD), isolation is not required to the other kind.
 - For example, a Creeping Red Fescue seed crop for Certified production does not require isolation to a crop of Tall Fescue.

NOTE: There are some cases where an entirely different crop kind has seeds which are difficult to distinguish from seeds of the inspected crop. In these cases, the mechanical isolation of 2 meters is also required. They include the following:

- a. Bentgrass (Colonial, Creeping and Velvet) and Redtop. For example, from the Bentgrass isolation requirements:

2. Mechanical Purity	Distance
a. Bentgrass species with seed difficult to distinguish in a lab test from seed of the inspected crop, but do not cross pollinate (DTD only in contaminant table below)	2 meters (6 feet)
b. Redtop	2 meters (6 feet)

- b. Wheatgrass (*Elymus* spp. only, i.e., Broadglumed, Slender, Northern, Streambank and RS Hybrid) and Dahurian wildrye (only). For example, from the Wildrye isolation requirements:

2. Mechanical Purity	Distance
a. <i>Elymus</i> * spp. of Wheatgrass (in the case of Dahurian only)	2 meters (6 feet)

**Elymus* spp. include Broadglumed, Slender, Northern, Streambank and RS Hybrid

MAXIMUM IMPURITY STANDARDS

The maximum impurity standards (MIS) for other kinds have not changed in terms of the number of plants permitted (e.g., 1 plant/10m²), but now only other kinds that will cross-pollinate with the inspected crop or have seeds difficult to distinguish from seed of the inspected crop will be counted and contribute towards the MIS i.e., it is the combined total number of plants that either CP, are DTD or both, that must not exceed the standard.

Plants of other kinds that are only considered DTS will no longer be counted or contribute towards the MIS. Instead, they will be reported by frequency in the field for the information of the grader and will not be a factor in the seed crop certification decision.

The only exception to that would be if the other kind is so numerous as to prevent inspection of the seed crop for varietal purity. For example, if the inspected seed crop is Creeping Red Fescue and Tall Fescue covered the Creeping Red Fescue to the point where the inspector could not complete the required 6 counts for varietal purity (i.e., reported the field as 'very weedy'), the field would be declined pedigreed status. If Tall Fescue was reported as 'numerous,' no corrective action would be required.

In many cases, completely different crop kinds will also be reported by frequency, but they are not included in the contaminant table as they do not CP and are not considered DTD and are a completely different crop kind. For example, Wheatgrass is still considered DTS from Bromegrass, Fescue, Ryegrass, Altai and Russian Wildrye.

Excerpt from the maximum impurity standards section for Wheatgrass:

2. Mechanical Purity (on average 10 or 100 m ²)
b. Plants with seed difficult to separate (DTS) from seed of the inspected crop will be reported by frequency in the field and will not be a factor in the seed crop certification decision. For Wheatgrass, that also includes Bromegrass, Fescue, Ryegrass and Altai and Russian Wildrye.

Forage legumes do not have contaminant tables, as there are no other crop kinds which will cross-pollinate or are considered difficult to distinguish from one another. However, there are still other kinds which are considered difficult to separate which will also be reported by frequency. For example, Red Clover and Sweet Clover are still considered difficult to separate from Alfalfa.

Excerpt from the maximum impurity standards section for Alfalfa:

2. **Mechanical Purity**
- a. Plants with seed difficult to separate (DTS) from seed of the inspected crop will be reported by frequency in the field and will not be a factor in the seed crop certification decision. For Alfalfa, that includes Red Clover and Sweet Clover.

The other crop kinds, which will be reported in counts and the other crop kinds, which will be reported by frequency, are summarized in [Appendix VI: Other crop kinds to report](#) of CFIA's Specific Work Instructions (SWI 142.1.1).

Be sure to review the isolation and maximum impurity sections for the inspected crop kind entirely as well as the contaminants table (where applicable).

APPENDIX A

Summary of Contaminant Tables, Circular 6, February 1, 2024

Bentgrass – some CP/DTD, some DTD only:

Inspected Crop	Contaminant		
	Colonial	Creeping	Velvet
Colonial (Browntop)	n/a	CP/DTD	DTD
Creeping	CP/DTD	n/a	DTD
Velvet	DTD	DTD	n/a

Bluegrass – all just DTS:

Inspected Crop	Contaminant					
	Alpine	Big	Canada	Fowl	Kentucky	Rough
Alpine	n/a	DTS	DTS	DTS	DTS	DTS
Big	DTS	n/a	DTS	DTS	DTS	DTS
Canada	DTS	DTS	n/a	DTS	DTS	DTS
Fowl	DTS	DTS	DTS	n/a	DTS	DTS
Kentucky	DTS	DTS	DTS	DTS	n/a	DTS
Rough	DTS	DTS	DTS	DTS	DTS	n/a

Bromegrass – all CP/DTD

Inspected Crop	Contaminant		
	Meadow	Smooth	Hybrid
Meadow	n/a	CP/DTD	CP/DTD
Smooth	CP/DTD	n/a	CP/DTD
Hybrid	CP/DTD	CP/DTD	n/a

Fescue – some CP/DTD, some DTD only, some DTS only

Inspected Crop	Contaminant					
	Chewings	Creeping Red	Hard	Meadow	Sheep	Tall
Chewings	n/a	CP/DTD	DTD	DTS	DTD	DTS
Creeping Red	CP/DTD	n/a	DTD	DTS	DTD	DTS
Hard	DTD	DTD	n/a	DTS	DTD	DTS
Meadow	DTS	DTS	DTS	n/a	DTS	DTS
Sheep	DTD	DTD	DTD	DTS	n/a	DTS
Tall	DTS	DTS	DTS	DTS	DTS	n/a

Ryegrass – all CP/DTD

Inspected Crop	Contaminant				
	Annual	Italian	Intermediate	Perennial	Westerwold
Annual	n/a	CP/DTD	CP/DTD	CP/DTD	CP/DTD
Italian	CP/DTD	n/a	CP/DTD	CP/DTD	CP/DTD
Intermediate	CP/DTD	CP/DTD	n/a	CP/DTD	CP/DTD
Perennial	CP/DTD	CP/DTD	CP/DTD	n/a	CP/DTD
Westerwold	CP/DTD	CP/DTD	CP/DTD	CP/DTD	n/a

Wheatgrass – some CP/DTD, some DTD only, some DTS only

Contaminant (Right) Inspected Crop (Below)	Agropyron		Elymus					Thinopyrum			Pascopyrum
	Crested	Siberian	Broadglumed	Slender	Northern	Streambank	RS Hybrid	Intermediate	Pubescent	Tall	Western
Crested	n/a	CP/DTD	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS
Siberian	CP/DTD	n/a	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS
Broadglumed**	DTS	DTS	n/a	DTD	DTS	DTS	DTS	DTS	DTS	DTS	DTS
Slender**	DTS	DTS	DTD	n/a	DTS	DTS	DTS	DTS	DTS	DTS	DTS
Northern	DTS	DTS	DTS	DTS	n/a	CP/DTD	DTS	DTS	DTS	DTS	DTS
Streambank	DTS	DTS	DTS	DTS	CP/DTD	n/a	DTS	DTS	DTS	DTS	DTS
RS Hybrid	DTS	DTS	DTS	DTS	DTS	DTS	n/a	DTS	DTS	DTS	DTD
Intermediate	DTS	DTS	DTS	DTS	DTS	DTS	DTS	n/a	CP/DTD	DTS	DTS
Pubescent	DTS	DTS	DTS	DTS	DTS	DTS	DTS	CP/DTD	n/a	DTS	DTS
Tall	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS	DTS	n/a	DTS
Western	DTS	DTS	DTS	DTS	DTS	DTS	DTD	DTS	DTS	DTS	n/a