

## 2022 Rule Change Proposal #4 - Amended

**Purpose of Proposal:** To add *Bromus riparius* × *B. inermis*, hybrid brome grass, to Volume 1, Table 2A of the AOSA Rules for Testing Seeds.

**Present Rule:** None

**Proposed Rule:** Volume 1. Principles and Procedures

Table 2A. Weights for working samples.

Pure Seed Unit #	Chaffy (C) or Super Chaffy (SC) <sup>a</sup>	Kind of Seed	Minimum weight for purity analysis <sup>b</sup>	Minimum weight for noxious weed seed or bulk examination	Approximate number of seeds per ablgram <sup>c</sup>	Approximate number of seeds per ounce <sup>d</sup>
			Grams	Grams	Number	Number
22		<i>Bromus riparius</i> Rehmman × <i>B. inermis</i> Leyss. hybrid brome grass	12.5	125	239	6789

**Table 3A. Pure seed unit definitions**

PSU Number	Description of Pure Seed Unit
22	<p>Multiple floret spikelet, multiple floret, or floret, with or without pedicel, with or without awn(s), provided there is a caryopsis at least one-third the length of the palea measured from the base of the rachilla.</p> <p>Caryopsis or piece of broken caryopsis larger than one-half of the original size.</p> <p>The amount of inert matter attached to the multiple units shall be determined by the method described in section 3.7.</p> <p>Special consideration:</p> <p>* When coated seed units are de-coated for purity analysis the method in section 3.7 shall not be used. Separation of multiple units shall be as follows:</p> <ul style="list-style-type: none"> <li>- A fertile floret attached to another fertile floret shall be separated.</li> <li>- Attached glumes and empty florets extending to or beyond the tip of the fertile floret shall be removed and classified as inert matter.</li> </ul> <p>* In case of <i>Elymus virginicus</i> (Virginia wildrye):</p> <ul style="list-style-type: none"> <li>- The method described in section 3.7 shall not be applied.</li> <li>- Upon request, the percentage by weight of multiple seed units found in a sample can be reported under other determinations on the report of analysis.</li> </ul> <p>* In case of <i>Festuca ovina</i>, <i>F. rubra</i> subsp. <i>fallax</i>, <i>F. rubra</i> subsp. <i>rubra</i>, and <i>F. trachyphylla</i> and <i>Bromus riparius</i> × <i>B. inermis</i>:</p> <ul style="list-style-type: none"> <li>- The multiple unit procedure shall not be applied. The method described in section 3.7 shall not be applied.</li> <li>- Upon request, the percentage by weight of multiple seed units found in a sample can be reported under other determinations on the report of analysis.</li> </ul>

**Harmonization statement:**

*Bromus riparius* × *B. inermis*, hybrid brome grass, is not currently listed in the Federal Seed Act Regulations, the Canadian Methods and Procedures for Testing Seeds, or the International Rules for Seed Testing. This species is sold as a new forage crops in Canada and the United States. Adding a pure seed unit definition and working weights to the AOSA Rules will ensure standard testing procedures for its fair seed trade and testing uniformity among laboratories.

**Supporting Evidence:** Hybrid brome grass is generated by crossing meadow brome grass (*Bromus riparius*) and smooth brome grass (*B. inermis*), which is a slightly creeping, winter hardy, long-lived perennial, dual purpose forage grass for both hay and pasture systems. Two varieties, Knowles and Success, were released in 2000 (Coulman, 2004) and 2003 (Coulman, 2006), and one variety ‘BigFoot’ was released from USDA as a new forage crop. Since the superior quality of hybrid brome grass in fast growth and high yield than their parental species (Coulman, 2004 and 2006), it was widely used as forage in Canada and the USA.

Pure Seed Unit: 22 (seed morphological feature was provided in Figure 1)



Figure 1: Florets of Hybrid Bromegrass *Bromus riparius* × *B. inermis*

The procedures outlined in Section 13 of Volume 1 of the AOSA Rules for Testing Seeds were followed to determine the minimum weight for purity analysis and the approximate number of seeds per gram. Seed counts were conducted on seed lots specified in the Table 1 and the method and calculation was presented in the support Excel document. The coefficient of variation for non-chaffy seeds (~~6.0%~~ (4.0)) was not exceeded.



**References:**

1. Coulman, B. 2004. Le brome hybride Knowles. *Can. J. Plant Sci.* 84: 815–817
2. Coulman, B. 2006. Success hybrid bromegrass. *Can. J. Plant Sci.* 86: 745–747
3. Association of Official Seed Analysts (AOSA), 2019. AOSA Rules for Testing Seeds.
4. International Seed Testing Association (ISTA), 2021, International Rules for Testing Seeds.

**Submitted by:** Ruoqing Wang, Seed Science and Technology Section, Saskatoon Laboratory, Canadian Food Inspection Agency, 421 Downey Road, Saskatoon, SK, Canada. [Ruoqing.wang@inspection.gc.ca](mailto:Ruoqing.wang@inspection.gc.ca)

**Date Submitted:** October 15, 2021