

2016 AOSA Rules Change Proposal 6

Purpose: To add *Elymus macrourus* (ELMA7, Tufted Wheatgrass) and *Elymus wawawaiensis* (ELWA2, Snake River Wheatgrass) germination standards to the AOSA Rules for Testing Seeds. These species will only be added to AOSA Rules for Testing Seed, Volume 1, Table 6A.

Present Rule: *Elymus macrourus* (ELMA7, Tufted Wheatgrass) and *Elymus wawawaiensis* (ELWA2, Snake River Wheatgrass) germination standards are not in the AOSA Rules for Testing Seeds.

Proposed Rule:

Kind of seed	Substrate ^a	Temperature (°C)	Days first count	Days final count	Specific requirements and notes	Fresh and dormant seed
<i>Elymus macrourus</i> Tufted Wheatgrass	P, TB	20	7	21		Ungerminated seeds see sec. 6.2f and 6.9m
<i>Elymus wawawaiensis</i> Snake River Wheatgrass	P, TB	20	7	14		Ungerminated seeds see sec. 6.2f and 6.9m

^a For coated seed, pleated paper (PP) may be used instead of the listed substrata. See sec. 6.8 l (1).

Harmonization Statement: ELMA7 and ELWA2 are not listed in the AOSA Rules of Testing Seeds. ELMA7 and ELWA2 are not listed with the Federal Seed Act Regulations (2001), the Canadian Methods and Procedures for Testing Seeds (2012), or the International Rules for Seed Testing (2015).

There are six other *Elymus* species with a germination standard published in the AOSA Rules for Testing Seeds (Table 6A). *Elymus elymoides* (Bottlebrush Squirreltail) is also under the guidelines of the Federal Seed Act Regulations (2001).

Table 6A. Methods of testing for laboratory germination (2014a)

Kind of seed	Substrate ^a	Temperature (°C)	Days first count	Days final count	Specific requirements and notes	Fresh and dormant seed
<i>Elymus canadensis</i>	P	15-30	7	21	Light	Prechill at 5°C for 2 wk
<i>Elymus cinereus</i> See <i>Leymus cinereus</i>	P	15-25	10	21		Ungerminated seeds see sec. 6.2f and 6.9m
<i>Elymus elymoides</i>	P,B	15; 20	10	14		Ungerminated seeds see sec. 6.2f and 6.9m
<i>Elymus junceus</i> See <i>Psathrostachys juncea</i>	P	20-30	5	14	Light	Prechill at 5 or 10°C for 5 days
<i>Elymus smithii</i> See <i>Pascoyrum smithii</i>	B, P, T	15-30	7	28	Dark	KNO ₃ or soil. Ungerminated seeds: see sec. 6.2f and 6.9m
<i>Elymus trachycaulus</i> <i>subsp. trachycaulus</i>	P, TB	20-30	5	14	Light	Prechill at 5° or 10° C for 5 d. If still dormant on 10th day of germination period, rechill 2 d then place at 20-30 °C for 4 d

^a For coated seed, pleated paper (PP) may be used instead of the listed substrata. See sec. 6.8 I (1).

Impact:

A standardized germination protocol is necessary to provide uniform test methods among laboratories to yield reliable and repeatable results. Establishing new protocols for native species is critical as the seed industry changes rapidly in response to dynamic land management styles. The plant species available for commercial usage or restorative land use projects change. There is a need within the seed production industry to develop germination protocols for native plants (Tekrony, 1986). These *Elymus* species are sold in the native seed industry in the United States by Pure Live Seed (PLS) units. Within the State of Washington the cultivars 'Secar' and 'Discovery' (*Elymus wawawaiensis*) are collectively in 955 acres of production with the Certified Seed Program for seed stock (2014b). The GRIN database describes 99 *Elymus* species with 43 native to North America (2013a). Among these 43 species; *Elymus wawawaiensis* is native to Washington, Idaho and Oregon and *Elymus macrourus* is native to Alaska and Northern Canada. Additional research explored the use of *Elymus* relatives for both cattle forage and conservation prairie planting (Rushing and Baldwin, 2013). These species are close tertiary relatives to wheat (2013a, 2013b, 2013c) and are listed as ecologically important for the Great Basin Restoration Project (2004). The Great Basin Native Plants Selection and Increase Project completed a landscape survey (2004) and three *Elymus* species were listed by National Tree Seed Laboratory Species as a priority for further research (2004). The approval of these species to the AOSA Rules for Testing Seeds will standardize results and add uniformity amongst seed laboratories that work closely with native grasses.

Supporting Evidence: See Appendix 6 for full content.

Conclusion:

The proposed new rules are reasonable and similar in content to other *Elymus* species currently published within AOSA Rules for Testing Seeds, Table 6A (2014a). The addition of *Elymus macrourus* (ELMA7, Tufted Wheatgrass) and *Elymus wawawaiensis* (ELWA2, Snake River Wheatgrass) germination standards to the AOSA Rules for Testing Seeds will establish uniformity among native grass seed laboratories. These elementary standards start to fill in gaps where germination standards were lacking.

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201—FEDERAL SEED ACT REGULATIONS, 201.46 Weight of working sample. <http://www.gpo.gov/fdsys/pkg/CFR-2012-title7-vol3/xml/CFR-2012-title7-vol3-subtitleB-chap1-subchapK.xml#seqnum201.46> (Accessed 25 September 2015).

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