

2016 AOSA Rules Change Proposal 2

Purpose: To eliminate rounding the estimated working weight of a seed mixture to the nearest one-fourth gram and to standardize how to round the minimum working sample weight for a seed mixture and for kinds not listed in Table 2A. This proposal applies to section 2.3.b(4)(b) and section 13.4.b(1) of Volume 1.

Present Rule and Proposed Rule:

2.3 Size of working samples.

b. Purity analysis, noxious weed seed examination, bulk examination. –

(4) Mixtures of kinds.

(a) Mixtures consisting of seeds of one predominant kind or group of kinds of similar size: The weight of the purity, noxious-weed seed and bulk working sample may be determined by the kind or group of kinds that comprise more than 50 percent of the sample, or it may be a weighted average calculated as outlined in section 2.3 b (4) (b).

(b) Mixtures consisting of two or more kinds or groups of kinds of different sizes, none of which comprise over 50 percent of the sample: The estimated weight of the purity working sample shall be the weighted average (to the nearest one-fourth gram) of the weights listed in Table 2A for each of the kinds that comprise the sample. The weighted average is rounded to the nearest one-tenth gram for working samples of less than five grams or is rounded to the nearest whole number for working samples of five gram or more. The working samples for the noxious weed seed and bulk examinations are calculated the same way. See example below.

Example of computation of weights of working sample.

Kind	Percentage in sample as determined by label, test report, or estimate ^a	Percentage of kinds of different size (rounded to nearest whole percent)	Weight of purity working sample (Table 2A)	Results of percentage × weight of purity sample
<i>Agrostis gigantea</i>	13.54	14	× 0.25	= 3.5
<i>Poa trivialis</i>	18.25	18	× 0.50	= 9.0
<i>Poa pratensis</i>	17.06	17	× 1.00	= 17.0
<i>Festuca rubra</i>	24.47	24	× 3.00	= 72.0
<i>Trifolium repens</i>	4.72	5	× 2.00	= 10.0
<i>Lolium perenne</i>	14.83	15	× 5.00	= 75.0
	93			186.5

Weighted average = $186.5 \div 93 = 2.01$. Working sample for mixture = ~~2.01~~ 2 grams.

Determination of the weight of the noxious-weed seed working sample is made in the same manner, using weights from Table 2A for noxious-weed seed examinations instead of weights for purity analysis as shown in column 4 in above example.

a Estimate may be determined by sieving or blowing a reduced sample.

SECTION 13: Non-Mechanical Seed Count and Working Weight Determinations

Procedures outlined in this section may be used to determine the number of seeds per gram and the appropriate weights for purity analysis and noxious weed seed exam working samples for submitted samples of kinds with unusually small or large seeds or for kinds not listed in Table 2A.

13.4 Calculation of results.

a. To calculate the numbers of seeds per gram use the following formula and round results to the nearest whole number:

$$\text{Number of seeds per gram} = \frac{100}{\text{Mean weight (g) of 100 seed units}}$$

b. To determine the weight of the purity working sample and its corresponding noxious-weed seed working sample for kinds not listed in Table 2A [refer to section 2.3b(2)], or for kinds listed in Table 2A with unusually smaller or larger seed units [refer to section 2.3b(3)] the following calculations shall apply.

(1) To calculate the minimum weight for a purity analysis, multiply the mean weight of 100 seed units (grams) by 25 to determine the estimated weight of 2,500 seed. The product is rounded to the nearest one-tenth gram for working samples of less than five grams and is rounded to the nearest whole number for working samples of five gram or more.

(2) To calculate the minimum weight for noxious weed seed or bulk examinations, multiply the minimum weight for the purity analysis (grams) by 10 to determine the estimated weight of 25,000 seeds.

Harmonization and Impact Statement: The 2015 ISTA Rules, sec. 1.3.b prohibit the issuing of analysis certificates for species not listed in Table 2A of the ISTA Rules; therefore, no method is provided to determine working sample weights for species not listed in the table. Although the ISTA Rules use the same general method for non-mechanical seed counts, the purpose of the ISTA seed count test is to determine the weight of 1,000 seeds (not to determine the working weight for a purity analysis or noxious weed seed exam); so, the difference in the rounding and reporting requirements employed are of no significance since the purpose of the test is different. The ISTA Rules use a different method for determining the working weight of a seed mixture. The Canadian Methods and Procedures (M&P) provide a different procedure for determining the number of seeds per grams and the weight of the working sample for kinds not listed in the M&P (and by reference, AOSA or ISTA Rules), as well as a different method for determining the working weight for a seed mixture. Federal Seed Act sec. 201.46(c) uses a similar method to the AOSA Rules for calculating the working sample weight of a seed mixture based on the weighted average of the components rounded to the nearest one-half gram.

Supporting Evidence: With few exceptions, the minimum working sample weights provided in AOSA Rules Table 2A are rounded to one decimal place for kinds that are small-seeded (some exceptionally small) with working sample weights of less than five grams. Sample sizes greater than five grams are usually rounded to a whole number (on very rare occasions some kinds with working weights greater than five grams are listed to one decimal place). When estimating the working sample weights of seed mixtures, it seems reasonable to follow this same general rounding rather than requiring the working sample weight to be rounded to the nearest one-fourth gram. Under Section 13.4.b there are no instructions for rounding following the calculation of the estimated weight of 2,500 seeds based on seed count and mean weight of 100 seeds. This lack of instruction could lead to confusion and non-uniformity in testing.

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