

## Rule Change Proposal 20

**Purpose of Proposal:** To correct the examples given in Volume 1, Sec. 14.3, of the AOSA Rules.

### Present Rule and Proposed Rule:

#### 14.3 Tolerances for noxious weed seeds examinations and bulk seed examinations

Noxious weed seed tolerances in Table 14G are based on the Poisson distribution. Tolerance values in Table 14G are based on a one-way test at five percent probability level and are for tests made on two different samples drawn from the same seed lot tested in the same or in different laboratories. Table 14G is adapted from Elias *et al.* (2000).

Table 14G is used primarily for regulatory purposes to determine if a second test contains significantly more noxious weed seeds than stated on the label or found in a first test. If the number of noxious weed seeds found is less than stated on the label or found in a first test, then no tolerance evaluation is necessary.

It is important to note that each noxious weed seed species found in a sample must be evaluated independently. Also, the labeled value (or first test finding) and a second test must be made on or adjusted to equal quantities of seed (refer to Appendix 1 in the AOSA Rules for Testing Seeds ~~Volume 1~~: ~~F~~or conversion of sample quantities). For example, if the label (first test) states 18 seeds per pound and the second test is conducted on 50.35 grams; then the labeled value must be converted to number of seeds in 50.35 grams (i.e., 2 seeds in 50.35 grams). **The direction of conversion should always be from number of noxious seeds per pound (as labeled or found in first test) to number of noxious seed per grams tested. The nominal weight of tested sample should be as stated in Table 2A of the AOSA Rules, and the actual weight of the tested sample is used in calculations.**

A tolerance value from Table 14G is determined by entering the table at the number of noxious weed seeds listed on the label in Column A; and the maximum number of noxious weed seeds considered within tolerance is found on the same line in Column B. If the number of the noxious weed seeds found in the second test is equal to or less than the number in Column B, the labeled value (first test) and the second test result are within tolerance. If the number of noxious weed seeds found exceeds the number in Column B, the labeled value (first test) and the second test are out of tolerance.

**Example 1.** A lot of red clover is labeled to contain 18 dodder seeds per pound. In a second teste, 4 dodder seeds were found in 50 grams. Is the number of noxious weed seeds found in the second test within tolerance of the label claim?

- 1) **Convert test results to number of seeds found per same sample size:** The label states 18 seeds per pound, while the second test found 4 dodder seeds per 50.05 grams. The number of seeds

per pound should be converted to seeds per 50.05 g (1 pound = 453.6 g) before tolerances can be tested. ~~Note that it is equally correct to convert the second test results from 4 seeds per 50 g to number of seeds per pound.~~

$$\frac{18 \text{ seeds}}{1 \text{ pound}} = \frac{18 \text{ seeds}}{453.6 \text{ grams}}$$

**Use of Table 14G:** A lot of red clover is labeled to contain 18 dodder seeds.

$$\frac{18 \text{ seeds}}{453.6 \text{ grams}} \times 50.05 \text{ grams} = 1.98, \text{ rounded to 2 dodder seeds per } 50.05 \text{ g}$$

- 2) **Application of Tolerances:** Enter Table 14G under Column A on the line that shows 2 (number labeled or represented). The same row under Column B shows 4 as the maximum tolerated number within tolerance. The label is satisfactory as far as dodder seed is concerned because the number found (4) does not exceed the maximum tolerated value (4).

**Example 2.** Suppose 7 dodder seeds were found in the 50.05-gram sample shown in example 1. This exceeds the tolerance (maximum number within tolerance equals 4). The analyst decides to examine an additional 50.05 grams. Only 2 dodder seeds were found in the second 50.05 grams. The results of the two sequential tests are combined together, and the total found is now 9 dodder seeds in 100.1 grams. Is the combined number of noxious weed seeds found (9 per 100.1 g) within tolerance of the label claim of 4 per 100.1 g?

- 1) **Convert test results to number of seeds found per same sample weight:** The label states 18 seeds per pound, which is equivalent to 4 dodder seeds per 100.1 grams:

$$\frac{18 \text{ seeds}}{453.6 \text{ grams}} \times 100.1 \text{ grams} = 3.97, \text{ rounded to 4 dodder seeds per } 100.1 \text{ g}$$

The label claim of 4 dodder seeds per 100.1 grams must be compared to the combined (second) test results ~~found of~~ 9 dodder seeds ~~found~~ per 100.1 grams.

- 2) **Application of tolerances:** Enter Table 14G under Column A on the line that shows 4 (number labeled or represented). The same row under Column B shows 7 as the maximum number within tolerance. The label is not satisfactory as far as dodder seed is concerned because the number found (9) exceeds the maximum tolerated value (7).

### Harmonization and Impact Statement:

The proposed change corrects the example in sec. 14.3 of the Rules, and has no impact on harmonization.

### Supporting Evidence:

1. This correction amends the example's text to reflect the instructions for conversion in the Rules (section 14.3) that state "...if the label (first test) states 18 seeds per pound and the second test is conducted on 50.35 grams; then the labeled value must be converted to number of seeds in 50.35 grams (i.e., 2 seeds in 50.35 grams). Conversion of the second test results is not listed as an option in the Rules because the values in Table

14G are based on expected results of the second sample, i.e., the smaller sample size. Therefore, the conversion should be made to produce an equivalent number of seeds that would be found in the required test weight for noxious weed examination, as stated in Table 2A of the AOSA Rules.

**Submitted by:**

Deborah Meyer, Purity Subcommittee AOSA Co-chair, [deborah.meyer@cdfa.ca.gov](mailto:deborah.meyer@cdfa.ca.gov); Sabry Elias, Statistics Committee AOSA Co-Chair, [sabryelias@oregonstate.edu](mailto:sabryelias@oregonstate.edu); Riad Baalbaki, Statistics Committee, [riad.baalbaki@cdfa.ca.gov](mailto:riad.baalbaki@cdfa.ca.gov).

**Date Submitted:** October 15, 2019