2018 Rule Proposal 3- Amended

Purpose of Proposal: To determine the working sample weights of coated, encrusted and pelleted unit mixtures that contain both coated and uncoated units within the mixture.

Present Rule:
None

Proposed Rule:

Section 2.3 Size of working samples

(b) Purity analysis, noxious weed seed examination, bulk examination.-

(5) Coated, encrusted, and pelleted seed. For the purpose of determining the working sample weights use the most completely coated, crusted or pelleted units

Volume 1. Principles and Procedures 2 - 9 2017 available in the sample (coated units: refer to 3.8a) regardless of the content of the coated units.

(a) Single kinds: Due to variation in weight of coating materials, the weight of the working sample shall be determined separately for each lot. The weight of the purity working sample shall be determined by weighing 100 coated units and calculating the weight of 2,500 coated units for the purity analysis. The noxious weed seed and bulk examination working weights shall be 10 times the purity working weight (approximately 25,000 coated units) or a maximum of 1,000 grams for kinds in Table 2A for which the working sample weight of raw seed is 500 grams.

(b) Mixtures of kinds: The working weight shall be determined in the following manner:

i) Calculate the weight of the working sample to be used for the mixture under consideration as though the sample were not coated by following sections 2.3 b (4) (a) and (b).

ii) Determine the amount of coating material on 100 coated units by weighing the coated units. Then use methods described in section 3.8 e to remove coating material. Calculate the percentage of coating material using the following formulas:

Weight of coating material = Weight of 100 coated units – Weight of 100 de-coated units
% of coating material = Weight of coating material ÷ Weight of 100 coated units x 100%

iii) The weight of the working sample shall be the product of the weight calculated in (i) multiplied by 100 percent, divided by 100 percent minus the percent of coating material calculated in (ii). The noxious weed seed bulk examination working weights shall be 10 times the purity working weight (approximately 25,000 coated units) or a maximum of 1000 grams for kinds in Table 2A for which the working sample weight of raw seed is 500 grams.
(c) **Mixtures of coated and uncoated kinds:** The working weight shall be determined in the following manner:

i) Determine the amount of coating material of each coated kind by weighing 100 coated units of each kind separately in the mixture. Then use methods described in section 3.8 e to remove coating material. Calculate the percentage of coating material for each coated kind by using the following formulas:

**Weight of coating material=**

\[
\text{Weight of coating material} = \text{Weight of 100 coated units} - \text{Weight of 100 de-coated units}
\]

**% of coating material=**

\[
\% \text{ of coating material} = \frac{\text{Weight of coating material}}{\text{Weight of 100 coated units}} \times 100\%
\]

**Working weight of coated kind=**

\[
\text{Working weight of coated kind} = \frac{\text{Weight from Table 2A} \times 100\%}{(100\% - \% \text{ of coating material})}
\]

ii) Calculate the weight of the working sample to be used for the mixture under consideration, using the weights calculated above for the coated kinds instead of the amounts from Table 2A. Follow sections 2.3 b (4) (a) and (b).

**Example:**

Using the same example from 4b, but with *Poa pratensis* being coated.

**Step 1:** Calculate the percent coating material for the coated kinds in the mixture. In this example, 100 coated *Poa pratensis* weigh 0.0800g, and after washing weigh 0.0400g.

Weight of coating material = 0.0800g (weight of 100 coated units) – 0.0400g (weight of 100 de-coated units)

\[
= 0.0400g
\]

% coating material = \[
\frac{0.0400g (\text{weight of coating material})}{0.0800g (\text{weight of 100 coated units})} \times 100\%
\]

\[
= 50\%
\]

**Step 2:** Recalculate the purity working weight for *Poa pratensis* by dividing the normal working weight by 100 minus the percent coating material calculated in step 1

Working weight of *Poa pratensis* = \[
1g \div (100\% - 50\%) = 1g \div 0.5 = 2g
\]

**Step 3:** Calculate the weight of the working sample for the mixture as in 4b, but substitute the calculated purity working weight for the coated kind. In this example *Poa pratensis* is coated, so we substitute 2g (as calculated above) for the normal 1 g.

**Example 2 of computation of weights of working sample.**

<p>| Kind | Percent in sample | Percent rounded to nearest whole percent | Weight of purity working sample (Table 2A) | Results of percentage x weight of purity |</p>
<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Weight Average</th>
<th># Seeds</th>
<th>Seed Weight</th>
<th>Total Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrostis gigantea</td>
<td>13.54</td>
<td>14</td>
<td>0.25</td>
<td>3.5</td>
</tr>
<tr>
<td>Poa trivialis</td>
<td>18.25</td>
<td>18</td>
<td>0.50</td>
<td>9.0</td>
</tr>
<tr>
<td>Poa pratensis</td>
<td>17.06</td>
<td>17</td>
<td>2.0</td>
<td>34</td>
</tr>
<tr>
<td>Festuca rubra</td>
<td>24.47</td>
<td>24</td>
<td>3.0</td>
<td>72.0</td>
</tr>
<tr>
<td>Trifolium repens</td>
<td>4.72</td>
<td>5</td>
<td>2.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Lolium perenne</td>
<td>14.83</td>
<td>15</td>
<td>5.0</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>= 93</strong></td>
<td></td>
<td></td>
<td><strong>=203.50</strong></td>
</tr>
</tbody>
</table>

Weighted average = 203.5 ÷ 93 = 2.18g Working sample for mixture = 2.2g

**Harmonization and Impact Statement:** This rule proposal contains an added guideline for clarification purposes and does not affect the current FSA or AOSA rules.

**Submitted by:**
Ernest Allen, Director, USDA, AMS, SRTD, Gastonia, NC; Ernest.Allen@ams.usda.gov
Todd Erickson, Laboratory Supervisor ,USDA ,AMS, SRTD, Gastonia, NC; Todd.Erickson@ams.usda.gov
Elizabeth Tatum, Botanist, USDA, AMS, SRTD, Gastonia, NC; Elizabeth.Tatum@ams.usda.gov
Anitra Walker, Botanist, USDA, AMS, SRTD, Gastonia, NC; Anitra.Walker@ams.usda.gov
Date Submitted: Oct. 13, 2017 Revised: Jan. 23, 2018  **Amended** June 5, 2018