

Rule Change Proposal - 13

Purpose: to clarify how to weigh and calculate the results of a purity analysis of a mixture of kinds.

Present and proposed rule:

SECTION 3: THE PURITY ANALYSIS

3.1 The purity analysis

The objective of a purity analysis is to determine the physical composition of the working sample. The analysis shall include the identification of the kind, or kind and cultivar of seed under consideration, and all contaminating species and inert matter.

- a. The purity working sample shall be separated into the following components: (1) kind or cultivar to be considered pure seed; (2) other crop seed; (3) inert matter; and (4) weed seed. The components shall be weighed in grams to the same number of decimal places as the working sample, except as provided for in section 3.1 b (3) where it is not necessary to weigh the pure seed component. In the case of mixtures of kinds, the kinds of seed shall be separated and classified separately under the general category of pure seed.

Aids in separation of the components may include visual examination, magnification, use of transmitted light (diaphanoscope), specific gravity (seed blowers), or sieves. Specific instructions for classification as to pure seed, other crop seed, inert matter, and weed seed are given in sections 3.2 through 3.7. For coated, encrusted, or pelleted seed refer to section 3.8. Insofar as laws, rules, and regulations permit, classification as to weed or other crop seed shall be as specified in section 4. Specific instructions for reporting purity analysis results are given in section 14.

b. Calculation of percent of component parts in the sample.

- ~~(1) The percentage of each of the four components shall be determined to two decimal places.~~
- (1) For samples composed of a single kind or mixtures of kinds with a minimum **Minimum** working sample less than 25 grams: Percentages shall be based on the sum of the weights of the component parts and not on the original weight. However, the sum of the weights of the component parts shall be compared with the original weight of the working sample as a check against loss of material or other error.
- (2) For samples composed of a single kind with a minimum **Minimum** working sample of 25 grams or more: The other crop seed, inert matter, and weed seed shall be weighed and their percentages calculated on the basis of the original weight. The pure seed need not be weighed; its percentage may be determined by subtracting the sum of the percentages of the other three components from 100.

- (3) For samples composed of a mixture of kinds with a minimum working sample of 25 grams or more: Percentages shall be based on the sum of the weights of the component parts and not on the original weight. However, the sum of the weights of the component parts shall be compared with the original weight of the working sample as a check against loss of material or other error.
- (4) The percentage of each of the four components shall be determined to two decimal places. When rounding off the calculated percentages of each component to the second decimal place, round down if the third decimal place is 4 or less and round up if the third decimal place is 5 or more, except that if any component is determined to be present in any amount calculated to be less than 0.015 percent, then that component shall be reported as 0.01 percent. If any component is not found in the purity analysis, then that component shall be reported as 0.00 percent.
- (5) The total percentage of all components shall be 100.00 percent. If the total does not equal 100.00 percent (e.g. 99.99 percent or 100.01 percent) then add to or subtract from the component with the largest value (normally the pure seed component).

Harmonization statement: The Federal Seed Act Regulation (FSA) does not directly address the issue of weighing the components or calculating the results of a purity analysis for a mixture of kinds. The International Seed Testing Association Rules for Seed Testing (ISTA Rules) do not include procedures for testing mixtures. The Canadian Food Inspection Agency Methods and Procedures for Testing Seeds (CFIA M&P) section 3.5b require that all components of a purity analysis to be weighed.

Supporting evidence: For greater accuracy in the purity analyses of mixtures it is recommended that all components of the separation be weighed. The total weight of all the components should be compared with the original working weight and if a significant difference is discovered (5% or more); then, the sample should be retested.

Submitted by: The Rules Committee.

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