

Tentative Rules for Testing Coated Seed

2.13 Coated seed purity procedures

- a. Definition: Coated seed is a seed unit which is covered with any substance which changes the size, shape, or weight of the original seed, excluding seeds which are treated with pesticides alone. Kinds of coated seed include:

(1) Uniformly coated seed (Pelleted Seed). -

That unit which is covered to a specific size and shape and is free flowing for precision planting. Kinds involved include, but are not limited to, vegetable, flowers, tobacco, and sugar beet seeds.

(2) Non-uniformly coated seed (Coated Seed). -

That unit which is partially or wholly covered to add weight or to serve as a carrier. Kinds involved include, but are not limited to, legumes, grasses, and other field crops.

Both (1) and (2) coatings may contain other ingredients such as, but not limited to, fertilizers, rhizobia, and pesticides.

(3) Plastic coated seed. -

That unit which is covered with a thin film of plastic, which may or may not obscure the unit, to delay germination.

b. Sampling:

- (1) Size of submitted sample: The minimum weight for samples of coated units to be submitted for purity analysis or test shall be that of 2500 units. The minimum weight for samples of coated units to be submitted for noxious weed seed examination shall be that of 25,000 units.
- (2) Forwarding and receipt of official samples: Samples of coated seed shall be forwarded in firmly packed crush proof containers.

c. The following methods shall be used for coated seed:

(1) Weight of working sample:

- (a) Due to variation in weight of types of coating materials, the size or weight of the working sample shall be determined separately for each lot. The weight of the working sample shall be determined by weighing 100 coated units and calculating the weight of 2500 coated units.
- (b) Mixtures - The working weight shall be determined in the following manner:

- i. Calculate the weight of working sample to be used for mixture under consideration as though sample were not coated following sections 2.3d (1) or (2) of the AOSA Rules.
 - ii. Determine the amount of coating material on 100 coated units by weighing the coated units and then using methods described in section (5) (c), (d), and (e). Calculate the percentage of coating material by dividing weight of coating material by weight of coated units.
 - iii. The weight of the working sample shall be the weight calculated in i. plus this determined weight multiplied by the percentage calculated in ii.
- (2) Obtaining the working sample: Coated seed shall be divided by placing the sample in a pile and thoroughly mixing. Divide the pile into halves until a sample of the desired weight remains. See section 2.2 of the AOSA Rules. The distance of fall should not exceed 25cm. to avoid damage to the coated units; therefore, a mechanical divider should not be used.
- (3) The purity analysis of Uniformly Coated Seed (Pelleted Seed):

Separation of component parts: The working sample of coated seed shall be weighed in grams to four significant figures and shall be separated into four parts, or five parts if determination of percentage of coating material is required: (1) pure coated units; (2) uncoated crop seed (including the kind under consideration); (3) inert; (4) uncoated weed seed; (5) coating material inert (CMI).

(a) Pure coated units shall include: (1) entire coated units regardless of whether or not they contain a seed; (2) broken and damaged coated units in which more than half the surface of the seed is covered by coating material, except when it can be seen that, either the seed is not of the species stated by the sender, or there is no seed present.

(b) Uncoated crop seed shall include: (1) free seeds of any crop species (see section 2.7 of the AOSA Rules); (2) broken coated units containing a crop seed that is recognizably not of the species stated by the sender; (3) broken coated units of the species stated when the coating material covers half or less of the surface of the seed.

(c) Inert matter shall include: (1) loose coating material; (2) broken coated units in which it is obvious there is no seed; (3) any other material defined as inert matter in section 2.10 of the AOSA Rules.

(d) Uncoated weed seed shall include: (1) free seeds of any weed species (see section 2.9 of the AOSA Rules); (2) broken coated units containing a weed seed.

(e) Coating material inert (CMI) shall be the weight of the coating material washed off when de-coating the sample. (See section (5) (e). Loose coating material shall not be included in this weight (see section (3) (c)).

(4) The purity analysis on non-uniformly coated seed (Coated Seed):

(a) Separation of component parts. - The working sample shall be weighed in grams to four significant figures and shall be separated into four parts: (1) kind or cultivar to be considered pure seed; (2) other crop seed; (3) inert matter; (4) weed seed, and, if required, (5) coating material.

(b) The method to be used in performing the purity analysis on non-uniformly coated seed shall be:

- i. Separate coated units from any non-adhering coating material in the working sample and weigh each component.
- ii. Remove the coating material from the coated units (see section (5) (c)), dry the seed (see section (5) (d)), and calculate the amount of coating material (see section (5) (e)).
- iii. Separate the de-coated seed into component parts following sections 2.7a, through g, (1) and 2.7g.(4) through i., 2.8, 2.9, and 2.10 of the AOSA Rules. Sections 2.11 and 2.12 of the AOSA Rules shall not be followed. Weigh each component and add the weight of the non-adhering coating material (determined in section i.) to the inert component.
- iv. In calculating the percentages of the components, the coating material may be reported as required.

(5) The following procedure shall be used when the weight of the coating material or a purity test on de-coated seed is required:

- (a) Obtain the working sample as in sections (1) and (2) and weigh.
- (b) Any loose coating material is to be removed, weighed, and added to the inert determined later in (f).
- (c) Remove the coating material from the sample by shaking in a fine sieve under running water or immersing in a solvent and then sieving. A sieve of 1.00 mm above a sieve of 0.5 mm is recommended (ISTA Rules).
- (d) Dry overnight on blotters or filter paper, then place in an air oven at the temperature indicated in Rule 9.5.6 (ISTA Rules) for the species under test. Weigh the dried seed.
- (e) Calculate the amount of coating material by subtracting the weight of the dried seed from the weight of the unwashed coated seed units.
- (f) For a purity analysis on the de-coated seed follow sections 2.7 - 2.10 of the AOSA Rules.
- (g) In calculating the percentages of the components, coating material may be reported as required.

- (6) Noxious-weed seeds. - A noxious weed seed examination shall be made by de-coating approximately 25,000 units.
- (7) Identification and Cultivar Determination. - To determine the kind of seed under consideration, wash 100 coated units from the pure coated seed portion of the purity test. For cultivar determination a minimum of 400 coated units should be washed.

4 Germination Tests

4.8 Special procedures and alternate methods for germination.

k. Coated Seed -

- (1) Germination tests on uniformly coated seed units shall be conducted in the following manner:
 - (a) The coated seed units shall be tested in accordance with section 4.10 of the AOSA Rules.
 - (b) The coated seed units shall be placed on the substratum in the condition in which they are received without rinsing, soaking, or any other pre-treatment.
 - (c) The moisture level is critical. A retest may be necessary to determine the optimum moisture level for the kind of coated seed units in test.
- (2) Germination tests on non-uniformly coated seed units shall be conducted as follows:
 - (a) Non-uniformly coated seed units from a single component sample shall be tested as described in sections 4.8k (1) (a) and (b).
 - (b) Non-uniformly coated seed units in mixtures which have been color coded shall be tested as described in sections 4.8k (1) (a) and (b).
 - (c) Non-uniformly coated seed units in mixtures which have not been color coded shall have the coating material removed in such a manner as to not affect the germination capacity of the seeds. The de-coated seed shall be tested in accordance with section 4.10 of the AOSA Rules.

In addition, the Rules Committee is working on the wording of an amendment to section 4.7a (page 31) to state that percent germination shall be calculated to the nearest whole number.