

## Rule Change Proposal No. 5

### PURPOSE

To clarify the pure seed unit definitions for species currently listed in the Rules; Tables 1 and 3. Portions of seed unit descriptions currently found in sections 2.6, 2.7 and 2.10a are combined into one section, 2.7, for simplicity. Species currently listed only in Table 3 are listed in Table 1 and are assigned a pure seed unit definition. Species for which working weights have not been established will have a dash in the column indicating the weight of the working sample should be determined using the methods described in Section 2.3 b.

**Please note:**     *This proposal will eliminate subsections 2.6 a through g.  
This proposal will eliminate subsections 2.7 a. through 2.7 k.  
This proposal will eliminate subsections 2.10 a(1) through (11).  
There will be no change to section 2.9 and subsections 2.10 b and c.*

### PRESENT RULE

Due to the length of the sections listed below please refer to AOSA Rules for Testing Seeds 2001 updated version for the present rule.

2.6 Seed unit.  
2.7 Kind of cultivar considered pure seed.  
2.8 Other crop seed.  
2.10 a Inert matter.  
Section 2.4, Table 1. Weights for working samples.

### PROPOSED RULE

**2.6 Seed unit.** - The seed unit is the structure usually regarded as a seed in planting practices and in commercial channels. Refer to section 2.7 for pure seed unit descriptions.

**2.7 Kind or cultivar considered pure seed.** - The pure seed shall include all seed units of each kind and/or cultivar under consideration, which are present in excess of 5% of the whole. Under certain circumstances kinds and/or cultivars present to the extent of 5% or less of the whole may be considered pure seed; for example, kinds or cultivars shown on a label as components of a mixture in amounts of 5% or less.

Pure seed units for the species in Table 1 are defined in section 2.7e. The descriptions given in sections 2.7 a, b, c and d apply to all seed units of the kind or cultivar under consideration, unless otherwise stated in sec. 2.7e, and shall be included with the pure seed.

- a. Immature or shriveled seed units, and seed units that are cracked or otherwise damaged.
- b. Insect-damaged seeds, provided that the damage is entirely internal, or that the opening in the seed coat is not sufficiently large to allow the size of the remaining mass of tissue to be readily determined.
- c. Seeds that have started to germinate.
- d. Seed units with nematode galls, fungus bodies (i.e., ergot, smut, etc.) and spongy or corky caryopses, which are entirely enclosed within the seed unit. Refer to sections 2.10 a (1) and c (1).
- e. **Pure seed unit (PSU) definitions** - the seed units described in the following definitions shall be considered pure seed. Structures not specifically described as part of the PSU shall be removed and classified as inert matter (refer to section 2.10). The PSU numbers given for species in Table 1 correspond to the following PSU numbers. For species not listed in Table 1, use the PSU definition that best describes the species concerned.

PSU Number	Description of Pure Seed Unit
1	<p>Seed, with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.            Special considerations:                Seeds of Cucurbitaceae and Solanaceae whether or not they are filled.</p>
2	<p>Seed with at least a portion of the seed coat attached.            Broken seed larger than one-half the original size with at least a portion of the seed coat attached.            Special considerations:                Separated cotyledons in Fabaceae, irrespective of whether or not the radicle-plumule axis or more than half the seed coat may be attached, or both, are considered inert matter.                Wing, when present, is removed and considered inert matter.                Pericarp (fruit wall), when present on seeds of <i>Desmodium tortuosum</i>, <i>Hedysarum boreale</i>, and <i>Purshia tridentata</i> is removed and considered inert matter.                Weevil-infested vetch seeds, irrespective of the amount of insect damage, are to be considered pure seed, unless they are broken pieces one-half the original size or less.                Chalcid-damaged seeds in Fabaceae, which are puffy, soft, or dry and crumbly are considered inert matter.</p>
3	<p>Seed, with or without seed coat, with or without wing(s).            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
4	<p>Seed with at least a portion of the seed coat attached, with or without wing(s).            Piece of broken seed larger than one-half the original size with at least a portion of the seed coat attached.</p>
5	<p>Seed, with at least a portion of the seed coat attached, without wing except for the part that encloses the seed.            Piece of broken seed larger than one-half the original size with at least a portion of the seed coat attached.            Special consideration:                Pieces of wing not enclosing the seed are removed and considered inert matter.</p>
6	<p>Seed, with or without seed coat, with or without aril, caruncle, elaiosome, or funicular remnant.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>

PSU Number	Description of Pure Seed Unit
7	<p>Seed, with at least a portion of the seed coat attached, with or without aril, caruncle, elaiosome, or funicular remnant.</p> <p>Piece of broken seed larger than one-half the original size with at least a portion of the seed coat attached.</p> <p>Special consideration:</p> <p style="padding-left: 40px;">Separated cotyledons in Fabaceae, irrespective of whether or not the radicle-plumule axis or more than half the seed coat may be attached, or both, are considered inert.</p> <p style="padding-left: 40px;">Weevil-infested vetch seeds, irrespective of the amount of insect damage, are to be considered pure seed, unless they are broken pieces one-half the original size or less.</p> <p style="padding-left: 40px;">Chalcid-damaged seeds in Fabaceae, which are puffy, soft, or dry and crumbly are considered inert matter.</p>
8	<p>Seed, with or without seed coat, seed coat with or without hairs.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
9	<p>Intact pod, with or without calyx or bracts, whether or not a seed is present.</p> <p>Piece of broken pod larger than one-half of the original size, unless no seed is present.</p> <p>Seed, with at least a portion of seed coat attached, with or without aril.</p> <p>Piece of broken seed larger than one-half the original size, with at least a portion of seed coat attached, with or without aril.</p> <p>Special consideration:</p> <p style="padding-left: 40px;">Separated cotyledons in Fabaceae, irrespective of whether or not the radicle-plumule axis or more than half the seed coat may be attached, or both, are considered inert.</p> <p style="padding-left: 40px;">Chalcid-damaged seeds in Fabaceae, which are puffy, soft, or dry and crumbly are considered inert matter.</p>
10	<p>Intact nutlet, whether or not a seed is present.</p> <p>Piece of broken nutlet larger than one-half of the original size, unless no seed is present.</p> <p>Seed, with or without seed coat.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
11	<p>Intact schizocarp or mericarp, whether or not a seed is present.</p> <p>Piece of broken schizocarp or mericarp larger than one-half of the original size, unless no seed is present.</p> <p>Seed or piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
12	<p>Single floret, with or without awn, provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light).</p> <p>Caryopsis or piece of broken caryopsis larger than one-half of the original size.</p> <p>Special consideration:</p> <p style="padding-left: 40px;">A fertile floret attached to another fertile floret shall be separated.</p> <p style="padding-left: 40px;">Attached glumes and empty florets shall be removed and classified as inert matter.</p>
13	<p>Single floret spikelet, or floret, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light).</p> <p>Caryopsis or piece of broken caryopsis larger than one-half of the original size.</p>

PSU Number	Description of Pure Seed Unit
14	Multiple floret spikelet, multiple floret, or floret, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size.
15	Spikelet with or without attached rachis segment, pedicel and sterile spikelet, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size.
16	Spikelet group that disarticulates as a unit with attached rachis and internode, or spikelet with or without attached rachis segment, pedicel and sterile spikelet, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size.
17	Spikelet group that disarticulates as a unit, spikelet, multiple floret, or floret, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size. Special consideration: For <i>Elymus elymoides</i> and <i>Triticum spelta</i> , in addition to the units described above, spikelet group with attached rachis and internode.
18	Fascicle, consisting of bristles and spikelets, provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size.
19	Intact bur, whether or not a caryopsis is present. Piece of bur larger than one-half the original size unless no caryopsis is present. Caryopsis or piece of broken caryopsis larger than one-half of the original size.
20	Intact hardened involucre, whether or not a caryopsis is present. Piece of hardened involucre larger than one-half the original size unless no caryopsis is present. Caryopsis or piece of broken caryopsis larger than one-half of the original size.
21	Floret with attached empty floret(s) not extending to the tip of the fertile floret (excluding the awn), or single floret, provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). Caryopsis or piece of broken caryopsis larger than one-half of the original size. Special consideration: A fertile floret attached to another fertile floret shall be separated. Attached glumes and empty florets extending to or beyond the tip of the fertile floret shall be removed and classified as inert matter.

PSU Number	Description of Pure Seed Unit
22	<p>Multiple floret spikelet, multiple floret, or floret, with or without pedicel, with or without awn(s), provided a caryopsis with some degree of endosperm development can be detected (either by slight pressure or by examination over light). The amount of inert matter attached to the multiple units shall be determined by the method described in section 2.12. Caryopsis or piece of broken caryopsis larger than one-half of the original size.</p>
23	<p>Multiple floret spikelet, multiple floret, or floret, with or without pedicel, with or without awn(s), caryopsis, or piece of broken caryopsis larger than one-half of the original size remaining in the heavy portion following the Uniform Blowing Point Procedure in section 2.11. Special consideration: For <i>Bouteloua curtipendula</i>, in addition to the units described above, spikelet group that disarticulates as a unit with attached rachis and internode.</p>
24	<p>Multiple floret spikelet, multiple floret, or floret, with or without pedicel, with or without awn(s), caryopsis, or piece of broken caryopsis larger than one-half of the original size remaining in the heavy portion following the Uniform Blowing Point Procedure in section 2.11. After the Uniform Blowing Point Procedure is completed, the amount of inert matter attached to the multiple units shall be determined by the method described in section 2.12.</p>
25	<p>Caryopsis or piece of broken caryopsis larger than one-half of the original size.</p>
26	<p>Intact samara with or without wing(s), with or without attached styles, whether or not a seed is present. Piece of broken samara larger than one-half of the original size, unless no seed is present. Seed with or without pericarp/seed coat. Piece of broken seed, with or without pericarp/seed coat, larger than one-half the original size.</p>
27	<p>Intact achene whether or not a seed is present. Piece of broken achene larger than one-half of the original size, unless no seed is present. Seed, with or without pericarp/seed coat. Piece of broken seed, with or without pericarp/seed coat, larger than one-half the original size.</p>
28	<p>Intact achene, whether or not a seed is present, with or without one or more of the following structures: beak, bristle, hairs, pappus, or wing. Piece of broken achene larger than one-half of the original size, unless no seed is present. Seed, with or without pericarp/seed coat. Piece of broken seed, with or without pericarp/seed coat, larger than one-half the original size.</p>
29	<p>Intact achene with or without perianth, whether or not a seed is present. Piece of broken achene larger than one-half of the original size, unless no seed is present. Seed, with or without pericarp/seed coat. Piece of broken seed, with or without pericarp/seed coat, larger than one-half the original size.</p>

PSU Number	Description of Pure Seed Unit
30	<p>Intact fruit segment, whether or not a seed is present.</p> <p>Piece of broken fruit segment larger than one-half of the original size, unless no seed is present.</p> <p>Seed, with or without seed coat.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
31	<p>Intact one-seeded fruit segment, whether or not a seed is present.</p> <p>Piece of broken fruit segment larger than one-half of the original size, unless no seed is present.</p> <p>Seed, with at least a portion of seed coat attached.</p> <p>Piece of broken seed, larger than one-half the original size, with at least a portion of seed coat attached.</p> <p>Special consideration:</p> <p style="padding-left: 40px;">Separated cotyledons in Fabaceae, irrespective of whether or not the radicle-plumule axis or more than half the seed coat may be attached, or both, are considered inert.</p> <p style="padding-left: 40px;">Chalcid-damaged seeds in Fabaceae, which are puffy, soft, or dry and crumbly are considered inert matter.</p>
32	<p>Intact dry indehiscent fruit, whether or not a seed is present.</p> <p>Piece of broken dry indehiscent fruit larger than one-half of the original size, unless no seed is present.</p> <p>Seed with or without seed coat (see special consideration below).</p> <p>Piece of broken seed larger than one-half the original size.</p> <p>Special consideration:</p> <p style="padding-left: 40px;">Seeds of <i>Crambe abyssinica</i> with the seed coat entirely removed are considered inert matter.</p>
33	<p>Intact dry indehiscent fruit with or without involucre, whether or not a seed is present.</p> <p>Piece of broken dry indehiscent fruit larger than one-half of the original size, unless no seed is present.</p> <p>Seed with or without seed coat.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
34	<p>Intact pyrene (stone), whether or not a seed is present.</p> <p>Piece of broken pyrene larger than one-half of the original size, unless no seed is present.</p> <p>Seed with or without seed coat.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
35	<p>Drupe containing a pyrene(s) (stone).</p> <p>Intact pyrene, whether or not a seed is present.</p> <p>Piece of broken pyrene larger than one-half of the original size, unless no seed is present.</p> <p>Seed with or without seed coat.</p> <p>Piece of broken seed larger than one-half the original size.</p>
36	<p>Intact nut, whether or not a seed is present.</p> <p>Piece of broken nut larger than one-half of the original size, unless no seed is present.</p> <p>Seed with or without seed coat.</p> <p>Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>

PSU Number	Description of Pure Seed Unit
37	<p>Intact achene with or without tuft of hairs at base, whether or not a seed is present.            Piece of broken achene larger than one-half of the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
38	<p>Intact utricle with or without perianth, whether or not a seed is present.            Piece of broken utricle larger than one-half the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.            Special consideration:                For <i>Bassia prostrata</i>, seed units which are retained on a 1mm opening square-hole sieve, when shaken for 30 seconds shall be considered pure seed units. Seed units that pass through the 1mm sieve shall be classified as inert matter.</p>
39	<p>Intact achene with or without style, hairs, and/or spines, whether or not a seed is present.            Piece of broken achene larger than one-half of the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
40	<p>Intact achene with or without hypanthium, whether or not a seed is present.            Piece of broken achene larger than one-half of the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
41	<p>Intact fruit or cluster of fruits, with accessory structures, whether or not a seed is present.            Broken fruit or cluster of fruits with accessory structures unless it is obvious no seed is present.            Seed with or without pericarp.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
42	<p>Intact dry indehiscent one-seeded fruit with accessory structures, whether or not a seed is present.            Piece of broken dry indehiscent one-seeded fruit larger than one-half the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
43	<p>Intact dry indehiscent fruit with or without plumose calyx, whether or not a seed is present.            Piece of broken dry indehiscent one-seeded fruit larger than one-half the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>
44	<p>Mericaip with or without beak, whether or not a seed is present.            Broken mericaip larger than one-half the original size, unless no seed is present.            Seed with or without seed coat.            Piece of broken seed, with or without seed coat, larger than one-half the original size.</p>

PSU Number	Description of Pure Seed Unit
45	One-flowered capitulum, unless it is obvious that no achene is present. Achene with or without pappus, whether or not a seed is present. Piece of broken achene larger than one-half the original size, unless no seed is present. Seed with or without seed coat. Piece of broken seed, with or without seed coat, larger than one-half the original size.
46	Flower cluster or flower, with or without pedicel, unless it is obvious no achenes are present.
47	Bulblet with or without attached glumes and pedicel.
48	Intact multi-seeded nut-like fruit, with enclosing perianth, whether or not a seed is present Piece of broken nut-like fruit larger than one-half the original size, unless no seed is present. Seed with or without seed coat. Piece of broken seed, with or without seed coat, larger than one-half the original size.

**2.8 Other crop seed.** – Seeds of plants grown as crops (other than the kind(s) and cultivar(s) included in the pure seed) shall be considered other crop seeds, unless recognized as weed seeds by laws, regulations, or by general usage; refer to section 10. All interpretations and definitions for pure seed in section 2.7 shall also apply in determining whether seeds are other crop or inert matter with the following two exceptions which may be applied as acceptable alternatives:

- a. Uniform blowing procedure in section 2.11 for kinds listed in sections 2.7 e (23) and (24) may be disregarded. If disregarded, all seed units for these kinds found in the working sample shall be manually separated into pure seed and inert matter. Only units containing at least one caryopsis with some degree of endosperm development which can be detected either by slight pressure or by examination over light are considered other crop.
- b. Multiple unit procedures in section 2.12 for kinds listed in sections 2.7 e (22) and (24) may be disregarded. If disregarded, all multiple units and single units (as defined in section 2.12) for these kinds found in the working sample shall be manually separated into single florets. Each floret containing a caryopsis with some degree of endosperm development, which can be detected either by slight pressure or examination over light, is considered other crop. Empty florets and glumes, if present, are considered inert matter.

**2.10 Inert matter.** – Inert matter shall include seeds and seed-like structures from both crop and weed plants and other materials not described in section 2.7 or as follows:

- a. Seeds and seed-like structures from crop plants.
  - (1) Seed units with nematode galls or fungus bodies (smut, ergot, and other sclerotia) which are not entirely enclosed within the seed unit.



## **SUPPORTING EVIDENCE**

Since the proposal is simply a reformatting of existing sections in the AOSA Rules, supporting evidence of scientific or technical nature is not necessary. The proposal does not change existing AOSA seed unit definitions. The Purity Subcommittee selected this format for simplicity and clarity. The format is similar to the one used in the ISTA Rules. However, the PSU definitions are not equivalent to those in ISTA because the current seed unit, pure seed and inert definitions in the AOSA Rules are not equivalent to those in ISTA. The new format should make comparison between the two sets of rules easier.

## **SUBMITTED BY**

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