

AOSA RULES COMMITTEE

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Twelve proposals were adopted and two proposals were rejected by the AOSA membership at the 1989 annual business meeting in Peoria, Illinois. Original proposals (1-13) with supporting evidence for changes in or additions to the Rules appear in the SCST Seed Technologist News 63(2): 68-91. The original proposal on the Seedling Evaluation Handbook (14) appears in a special issue of the AOSA Newsletter, Volume 63(2). Several of the adopted proposals have been amended from the original version. Please note that eleven of the adopted proposals become official rules on October 1, 1989. Proposal 14 was adopted but with the stipulation that both the revision to section 4.5b(3) of the Rules and the Seedling Evaluation Handbook will not become effective until this handbook is printed in final form along with illustrations and distributed by the AOSA. Until this happens, APPENDIX 1. Seedling Descriptions and the current section 4.5b(3) of the Rules remain in effect.

1. Addition of peroxidase test for soybean (Glycine max) to section 3.2 Identification and Cultivar Determination.

ADOPTED PROPOSAL as amended from original--

3.2.b

(2) Peroxidase Test for Soybean (Glycine max): Remove and place the dry seed coat from soybean seeds into individual test tubes or suitable containers. Add 10 drops (0.5-1.0 ml) of 0.5 percent guaiacol to each test tube. After waiting 10 minutes add one drop (about 0.1 ml) of 0.1 percent hydrogen peroxide. One minute after adding the hydrogen peroxide, record the seed coat as peroxidase positive (high peroxidase activity) indicated by a reddish-brown solution or peroxidase negative (low peroxidase activity) indicated by a colorless solution in the test tube. Various sample sizes may be used for this test. Test results must include the sample size tested. For tolerances - see section 5.6, Table 12. Note: Smell of guaiacol is offensive. Perform test under a fume hood.

2. Addition of fluorescence test for oats (Avena sativa) to section 3.2 Identification and Cultivar Determination.

ADOPTED PROPOSAL--

3.2.c

Fluorescence Test for Oats (Avena sativa): Place at least 400 seeds on a black background under a F15T8-BLB or comparable ultraviolet tube(s) in an area where light from other sources is excluded. Seeds are considered fluorescent if the lemma or palea fluoresce or appear light in color. "Partially fluorescent" seeds shall be considered fluorescent. Seeds are considered nonfluorescent if the lemma and palea do not fluoresce and appear dark in color under the ultraviolet light.

3. Revised format for section 3.2.b in the Rules.

ADOPTED PROPOSAL--

3.2.b. Chemical tests.

(1) Phenol Test for Wheat: The phenol method for testing wheat (Triticum aestivum and other Triticum spp.) seed for cultivar purity is outlined in AOSA Handbook No. 28, "A Standardized Phenol Method for Testing wheat Seed for Varietal Purity."

(As an editorial change, the procedure for doing the phenol test as described in Handbook 28 will appear in section 3.2b(1) when the Rules are revised.)

4. Revision of APPENDIX 2 in the Rules, and the calculation of number of contaminant seeds in a sample.

ADOPTED PROPOSAL--

Change APPENDIX 2. CONVERSION OF SAMPLE WEIGHTS to read:

(A) When converting numbers of seeds found in the working sample to the number of seeds per pound, the following formula shall be used:

$$\frac{453.6 \text{ grams} \times \text{number of seeds found}}{\text{weight of working sample (grams)}} = \text{number of seeds per pound}$$

(B) When converting numbers of seeds found in the working sample to the number of seeds per ounce, the following formula shall be used:

$$\frac{28.35 \text{ grams} \times \text{number of seeds found}}{\text{weight of working sample (grams)}} = \text{number of seeds per ounce}$$

When using the above formulas, use the actual weight of the working sample (four significant figures). The final result shall be rounded to a whole number when reporting seeds per pound and to the first decimal place when reporting seeds per ounce. When rounding off the final result to a whole number, round down if the first decimal place is 4 or less and round up if the first decimal place is 5 or more. When rounding off the final result to the first decimal place, round down if the second decimal place is 4 or less and round up if the second decimal place is 5 or more.

Example 1. In a 50 gram noxious weed seed examination of alfalfa seed with an actual working weight of 50.15 grams, 7 dodder seeds were found. For number of seeds per pound (Formula A):

$$\frac{453.6 \text{ grams} \times 7}{50.15 \text{ grams}} = 63.31 \text{ seeds}$$

then
round to the nearest whole number
= 63 seeds per pound

Example 2. In a 2 gram purity examination of white clover, with an actual working weight of 2.221 grams, 1 chickweed seed was found. For number of seeds per pound (Formula A):

$$\frac{453.6 \text{ grams} \times 1}{2.221 \text{ grams}} = 204.2 \text{ seeds}$$

then
round to the nearest whole number
= 204 seeds per pound

Example 3. In a 10 gram noxious weed seed examination of Kentucky bluegrass, with an actual working weight of 10.13 grams, 4 Canada thistle achenes were found. For number of seeds per ounce (Formula B):

$$\frac{28.35 \text{ grams} \times 4}{10.13 \text{ grams}} = 11.19 \text{ seeds}$$

then
round to one decimal place
= 11.2 seeds per ounce

Example 4. In a .25 gram purity examination of bentgrass, with an actual working weight of .2584 grams, 3 windgrass florets were found. For number of seeds per ounce (Formula B):

$$\frac{28.35 \text{ grams} \times 3}{.2584 \text{ grams}} = 329.14 \text{ seeds}$$

then
round to one decimal place
= 329.1 seeds per ounce

5. Change seed unit in section 2.6b. for Festuca spp. (excluding Festuca rubra) and Lolium spp. from caryopses and single florets to multiple florets (as well as caryopses and single florets).

This PROPOSAL was rejected by the membership.

6. Addition of TB as substratum and 10°C as temperature and a change in Additional Directions for tidy-tips daisy in Table 4.

ADOPTED PROPOSAL--

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp. °C.</u>	<u>First count days</u>	<u>Final count days</u>	<u>Additional Directions</u>
<u>Layia platyglossa</u> tidy-tips daisy	P, TB	10, 15	4	8	Light. New crop seed may require 10°C (dark) for rapid, maximum response.

7. Addition of Rudbeckia hirta - black-eyed Susan to the Rules.

ADOPTED PROPOSAL--

Include in Table 4 (Methods of testing for laboratory germination, FLOWER SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp. °C.</u>	<u>First count days</u>	<u>Final count days</u>	<u>Additional Directions</u>
<u>Rudbeckia hirta</u> black-eyed Susan	L. TB	20-30	7	14	Light.

8. Addition of Ratibida columnifera - Mexican hat, prairie coneflower to the Rules.

ADOPTED PROPOSAL--

Include in Table 4 (Methods of testing for laboratory germination, FLOWER SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp. °C.</u>	<u>First count days</u>	<u>Final count days</u>	<u>Additional Directions</u>
<u>Ratibida</u> <u>columnifera</u> (Nuttall) Wooton & Standley Mexican hat, prairie coneflower	TB	15,20	7	14	Light.

9. Addition of Monarda citriodora - lemon mint to the Rules.

ADOPTED PROPOSAL--

Include in Table 4 (Methods of testing for laboratory germination, FLOWER SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp. °C.</u>	<u>First count days</u>	<u>Final count days</u>	<u>Additional Directions</u>
<u>Monarda</u> <u>citriodora</u> Lagasca lemon mint	TB	15,20, 15-25	7	21	Light.

10. Addition of Cowania mexicana - cliffrose to the Rules.

ADOPTED PROPOSAL--

1) Include in Table 1 (Weights for working samples, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Min. Wt. for Purity Anal.(g)</u>	<u>Approx. No. Seeds/Gram</u>	<u>Approx.No. Seeds/Oz.</u>
<u>Cowania mexicana</u> D. Don cliffrose	19	130	3650

2) Include in Table 5 (Methods of testing for laboratory germination, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp.^oC</u>	<u>Dur.</u>	<u>Add. Dir.</u>
<u>Cowania mexicana</u> cliffrose	B,P	15,10-30	28	Prechill 30 days at 1-2 ^o C.; or use TZ ^b .

11. Addition of Cercocarpus ledifolius - curleaf mountain-mahogany to the Rules.

ADOPTED PROPOSAL--

1) Include in Table 1 (Weights for working samples, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Min. Wt. for Purity Anal.(g)</u>	<u>Approx. No. Seeds/Gram</u>	<u>Approx.No. Seeds/Oz.</u>
<u>Cercocarpus ledifolius</u> Torrey & A. Gray curleaf mountain-mahogany	25	100	3000

2) Include in Table 5 (Methods of testing for laboratory germination, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp.^oC</u>	<u>Dur.</u>	<u>Add. Dir.</u>
<u>Cercocarpus ledifolius</u> curleaf mountain-mahogany	B,P	15,10-30	28	Prechill 70 days at 1-2 ^o C.

12. Addition of Cercocarpus montanus - true mountain-mahogany to the Rules.

ADOPTED PROPOSAL--

1) Include in Table 1 (Weights for working samples, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Min. Wt. for Purity Anal.(g)</u>	<u>Approx. No. Seeds/Gram</u>	<u>Approx.No. Seeds/Oz.</u>
<u>Cercocarpus montanus</u> Rafinesque true mountain-mahogany	28	90	2500

2) Include in Table 5 (Methods of testing for laboratory germination, TREE and SHRUB SEEDS) the following:

<u>Kind of Seed</u>	<u>Substrata</u>	<u>Temp. °C</u>	<u>Dur.</u>	<u>Add. Dir.</u>
<u>Cercocarpus montanus</u> B,P true mountain-mahogany		15,10-30	28	Prechill 60 days at 1-2 ⁰ C; or use TZ ^b .

13. Addition of Chrysothamnus nauseosus - rubber rabbitbrush to the Rules.

This PROPOSAL as amended at the open meeting was rejected by the membership. (The amendments to this PROPOSAL included (1) a sentence at the end of 2.7f: Refer to section 2.7k for Chrysothamnus nauseosus, (2) a new 2.7k: Intact fruits of Chrysothamnus nauseosus which contain an embryo that can be detected either by slight pressure or examination over light, and (3) a new 2.10a(12): Intact fruits of Chrysothamnus nauseosus which do not contain an embryo. Refer to section 2.7k.)

14. Delete APPENDIX 1. Seedling Descriptions from the AOSA Rules for Testing Seeds and adopt the Seedling Evaluation Handbook and reference it in section 4.5b(3) of the Rules.

ADOPTED PROPOSAL as amended from original (but with the stipulation that both the revision to section 4.5b(3) of the Rules and the Seedling Evaluation Handbook will not become effective until this handbook is printed in final form along with illustrations and distributed by the Association)--

1) Change section 4.5b(3) in the Rules to read: Seedling descriptions for specific kinds and groups are set forth in the Seedling Evaluation Handbook. This entire handbook shall be considered part of the Rules.

2) Delete APPENDIX 1. in its entirety from the AOSA Rules and replace it with a separate Seedling Evaluation Handbook. The following changes to the handbook were adopted as amendments to this proposal:

- page 26. Delete all of section c
- page 48. Delete the word "thickened" from the last statement under Hypocotyl
- page 50. Change common name for Desmodium tortuosum from "hairy indigo" to "beggarweed"
- page 50. Change "Kummerovia" to read "Kummerowia"
- page 63. Under a. General description, Root system, delete from end of paragraph: "(Also see Remarks)"
- page 63. Under b. Abnormal seedling description, Root, delete the last line and replace with: "-weak primary root with insufficient seminal or adventitious roots"
- page 64. Delete last paragraph under Remarks: "All rice ... the 7-leaf stage."
- page 77. Top of page under Secondary infection, add to end of definition: "or adhering structures (such as the cluster of Beta)"

- page 16. Last paragraph of 3.5.1.b, add to end of last sentence: "if at the end of the regular germination period swollen seeds are present or there are seeds which have just started to germinate."
- page 39. Under Cotyledons for 4.6.1.b, delete statement under "-all others" and add: "Cotyledons are not assessed. Exception: If both cotyledons are missing and the seedling is generally weak, then it is considered abnormal."
- page 29. Change "Artemesia" to read "Artemisia"
- page 68. Under Remarks for 4.10.4.c, delete first paragraph: "Preliminary counts ... 5th day."
- page 3. First paragraph of 2.1.2, delete last sentence: "In this handbook ... be considered."
- Sections 2,3, and 5. Insert appropriate descriptions of gymnosperm seed and seedling development and structure, as provided by the Tree Seed Committee.
- Section 4 Delete all "Seed unit" descriptions and reinsert "dicotyledonous" or "monocotyledonous" in appropriate locations.

Peoria - Ag Tour

