

Rule Change Proposal 7

Purpose of Proposal: Add a sentence to Section 6.5 b. (1) of the *AOSA Rules for Testing Seeds* to add clarity in the proper evaluation of unemerged soybean seedlings in sand, soil and /or organic media tests.

Present Rule:

Section 6.5 Evaluation of seedlings

b. Guides for evaluation of seedlings

(1) Sand, soil and/or organic growing media tests. – Such tests shall be considered the guide in determining the classification of questionable seedling grown on approved artificial media when there is doubt as to the proper evaluation of the seedlings.

Proposed Rule:

Section 6.5 Evaluation of seedlings

b. Guides for evaluation of seedlings

(1) Sand, soil and/or organic growing media tests. – Such tests shall be considered the guide in determining the classification of questionable seedling grown on approved artificial media when there is doubt as to the proper evaluation of the seedlings. ***Unemerged soybean (*Glycine max* (L) Merr.) seedlings (found under the sand, soil and/or organic media) should be classified as normal, if they would meet the normal seedling classification when grown on approved artificial media.***

Harmonization and Impact Statement:

This proposal would improve consistency among AOSA/SCST laboratories and harmonizes with the ISTA Rules in the classification of unemerged soybean seedlings which appear to have all the essential structures to be classified as normal on approved artificial media.

Supporting Evidence:

Adding this sentence clarifies that unemerged seedlings maybe normal seedlings if they meet the AOSA definition of a normal seeding for the specific species. Current wording in 6.5 b. (1) and Volume 4 do not specifically address the unemerged seedling classification. Additionally, harmonization with ISTA Rules is achieved since “every seedlings status as a normal or abnormal could now be evaluated in situations when removal of the sand aids in the evaluation of the respective seed lot”.

ISTA Rules “5.65 Evaluation” states “every seedling must be evaluated in accordance with the general principles laid down in 5.2.5-5.2.8 (5.2.5 Essential seedling structures) (5.2.6 The 50% rule) (5.2.7 Normal seedlings) and 5.2.8 (Abnormal seedlings).

The proposal clarifies classification across sand, soil and organic growing media instead of modifying each respective Seed Evaluation section/species when soil, sand and/or organic media are options for the respective species.

An Example for Soybean and Lupines below.

Volume 4. Seedling Evaluation (Soybean and Lupine) alludes to a similar situation in Note 5. "Hypocotyl development is slow until the roots start functioning and reach sufficient size; caution should be exercised to ensure slow seedlings are not classified as abnormal. This is especially evident for soybeans grown on top of crepe cellulose paper or in sand (S) if seeds aren't sufficiently pressed in or covered (respectively), likely resulting in a very short non-thickened hypocotyl with a long primary root. Similarly, epicotyls may remain undeveloped if the roots and hypocotyls are late in their development. A retest, preferably in soil or sand, will aid in interpretation of such seedlings."

A PDF of mechanically damaged soybeans and resulting growth is attached as supporting evidence to help visualize the changes that can occur to an mechanically damaged abnormal soybean seedling with additional testing time.

Submitted by Laura Carlson, SoDak Labs, Inc. and Mike Stahr, Iowa State Seed Science Center.

Date Submitted: October 14, 2019

Rule Change Proposal

Purpose of Proposal: Add note number 11 to the Notes section of Fabaceae, Legume Family II – Soybean and lupine in Volume 4 of the *AOSA Rules for Testing Seeds* to add clarity evaluation of unemerged normal seedlings.

Present Rule:

New Line item in the Notes section.

Proposed Rule:

11. Unemerged soybean (*Glycine max(L.) Merr.*) seedlings (found under the sand, soil and/or organic media) should be classified as normal, if they would meet the normal seedling classification when grown on approved artificial media.

Harmonization and Impact Statement:

This proposal would improve consistency among AOSA/SCST laboratories and harmonizes with the ISTA Rules in the classification of unemerged soybean seedlings which appear to have all the essential structures to be classified as normal on approved artificial media.

Supporting Evidence:

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