

## 2016 AOSA Rules Change Proposal 7

**Purpose of Proposal:** To harmonize the list of sensitive species used for phytotoxicity testing in the AOSA Rules, Volumes 1 and 4.

**Present Rule:**

*AOSA Rules for Testing Seeds* Volume 1. Principles and Procedures:

### 6.9 Explanation of Table 6A

#### a. Substrata.

If there is a question as to whether a paper substratum is toxic to developing seedlings, check tests should be made on Whatman's No. 2 filter paper or its equivalent. Seeds of celery, celeriac, chicory, dandelion, timothy, and bermudagrass are particularly sensitive to toxic substrata. If root injury is evident on substratum moistened with potassium nitrate (KNO<sub>3</sub>), retests should be made on substratum moistened with water.

*AOSA Rules for Testing Seeds* Volume 4. Seedling Evaluation:

### 3.4.9 Toxicity in the laboratory.

Germination substrata or water from new or unknown sources should be tested for phytotoxicity prior to routine use. Plant seeds of sensitive species (e.g. timothy, lettuce, celery or sorghum) on the substrate to be tested as well as on a similar substrate known to be non-phytotoxic. Stunted roots or hypocotyls, or roots that arch away from the substrate are signs of phytotoxicity. A comparison of the test and control samples should be made daily, because the symptoms may be more difficult to see once the roots become entangled. (See third paragraph of section 6.9 a of the *AOSA Rules for Testing Seeds* Vol. 1.)

**Proposed Rule:**

### 6.9 Explanation of Table 6A

#### a. Substrata.

If there is a question as to whether a paper substratum is toxic to developing seedlings, check tests should be made on Whatman's No. 2 filter paper or its equivalent. Seeds of celery, celeriac, chicory, dandelion, timothy, lettuce, sorghum, red top, weeping lovegrass, red fescue, barley, garden cress, petunia, onion, and bermudagrass are particularly sensitive to toxic substrata. **At least two species should be included in the test.** If root injury is evident on substratum moistened with potassium nitrate (KNO<sub>3</sub>), retests should be made on substratum moistened with water.

## AOSA Rules for Testing Seeds Volume 4. Seedling Evaluation:

### 3.4.9 Toxicity in the laboratory.

Germination substrata or water from new or unknown sources should be tested for phytotoxicity prior to routine use. Plant seeds of sensitive species (e.g. **celery, celeriac, chicory, dandelion, timothy, lettuce, sorghum, red top, weeping lovegrass, red fescue, barley, garden cress, petunia, onion, or bermudagrass** ~~timothy, lettuce, celery or sorghum~~) on the substrate to be tested as well as on a similar substrate known to be non-phytotoxic. **At least two species should be included in the test.** Stunted roots or hypocotyls, or roots that arch away from the substrate are signs of phytotoxicity. A comparison of the test and control samples should be made daily, because the symptoms may be more difficult to see once the roots become entangled. (See third paragraph of section 6.9 a of the AOSA Rules for Testing Seeds Vol. 1.)

#### **Harmonization and Impact Statement:**

Species listed in the ISTA Rules for phytotoxicity testing include *Agrostis gigantea* (redtop), *Eragrostis curvula* (weeping lovegrass), *Festuca rubra* (red fescue), *Hordeum vulgare* (barley), *Lepidium sativum* (garden cress), *Petunia* sp., and *Phleum pratense* (timothy) (ISTA *Seedling Evaluation Handbook* Section A.5.6.3).

Species listed in the Canadian M & P (Section 4.5.6) include *Agrostis gigantea*, *Allium cepa* (onion), *Apium graveolens* (celery), *Cichorium intybus* (chicory), *Hordeum vulgare*, *Festuca rubra*, *Lepidium sativum*, and *Phleum pratense*. Both ISTA and Canada require that at least two sensitive species are to be used in phytotoxicity tests.

**Supporting Evidence:** An inquiry was made to the Rules Committee by an analyst studying for the Germination portion of the RST/CSA exam. A discrepancy between the species listed in AOSA Rules Volume 1 and those listed in Volume 4 for phytotoxicity testing was pointed out. This Rules proposal is an attempt to remove the discrepancy and to harmonize more closely with both the Canadian M & P and the ISTA Rules.

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