

2015 AOSA/SCST Seedling Evaluation Workshop

Tampa, Florida

Sunday, May 31, 2015

8 am - 5 pm

Instructors

Riad Baalbaki, Chair

AOSA Germination/Dormancy Subcommittee

Sabry Elias, Chair

AOSA Research Committee

Scope and Objectives

Last year's workshop (AOSA/SCST meetings, Fargo, North Dakota) addressed different aspects of germination testing. This year's workshop, in contrast, will focus on issues specifically related to seedling evaluation in order to improve the uniformity of test results among labs. The first part of the workshop will provide a brief overview of seed anatomy and physiology as well as a brief overview of germination testing rules and procedures, while the greater second part will be devoted to examining evaluation criteria and their application to seedling structures of major monocot and dicot species, and ways to decrease subjectivity in evaluating germination tests. The workshop will include many group exercises, where each group will be asked to evaluate seedlings and contrast their results with other groups, followed by a discussion of the groups' results. Virtual seed and seedling images, rather than actual samples, will be used in all evaluation examples and practice exercises. These high quality images of multiple species with all sorts of abnormalities have been developed over the past years for instructional purposes, and many will be used in the new edition of the Seedling Evaluation Handbook. This workshop has several objectives. The first is to improve germination testing uniformity among analysts and labs, and further standardize test procedures. Another objective is to identify key differences in approaches and evaluation criteria between AOSA/SCST and ISTA. A third objective is to serve as an educational and training resource for candidates pursuing professional accreditation in seed testing.

Syllabus

Part I-The Germination Test (2 hours)

1. Seed anatomy, morphology and physiology-a brief overview
2. The germination process-a brief overview
3. The germination test
 - I. Rules
 - II. Sources of variation
 - III. Substrates
4. Germination results: rounding, validity, tolerances and reporting

Part II-Seedling Evaluation (5.5 hours)

1. General principles of seedling evaluation,
2. Common causes of abnormal seedling development
3. First counts and seedling evaluation
4. Classification of primary and secondary infections
5. Necrosis: causes, identification and evaluation
6. Root abnormalities
7. Shoot abnormalities
 - i. Monocots
 - ii. Dicots
8. Differences between AOSA and ISTA rules for specific families