

# A BRIEF HISTORY OF THE DEVELOPMENT OF THE ASSOCIATION OF OFFICIAL SEED ANALYSTS' RULES FOR TESTING TREE AND SHRUB SEEDS

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## Introduction

Although methods for germinating tree seeds have been known and used for many years, especially by forestry workers in Europe and North America, official methods for testing seeds were not published until recently.<sup>2</sup> As late as 1938, tree seeds were not mentioned in the International Rules for Seed Testing issued by the International Seed Testing Association (ISTA). By 1953, the names of some commercially important tree seeds had been included, and in 1959 tree seeds were listed under separate sections. The rules of the Association of Official Seed Analysts (AOSA) did not refer to tree seed testing until July 1, 1965, when their latest revision became effective. Until that date very few laboratories in the Association were required to test tree seeds. Laboratories making tests developed methods or followed the ISTA rules.

## Background for AOSA Action

However, notable progress in testing the germination of tree and shrub seeds had been accomplished by the Department of Seed Investigations of the New York State Agriculture Experiment Station, Geneva, N. Y., and the Boyce Thompson Institute for Plant Research, Yonkers, N. Y. Prior to World War II, the Lake States, Southern, and

California Forest Experiment Stations, Forest Service, USDA, had done considerable testing of woodyplant seed, both in research and service tests, and their experience and results contributed much information to the Woody-Plant Seed Manual (1). Valuable contributions in this field were also made during studies conducted at the Eastern Tree Seed Laboratory, Forest Service, USDA, Macon, Ga.; the Seed Laboratory at Oregon State University, Corvallis, Ore.; forestry faculties at many universities; and forestry departments in Canadian and American government institutions.

As trade in tree seed increased after World War I, and especially after World War II, the need grew for commonly accepted and applied standards for testing tree seed in North America. Such standards were needed to obtain (a) uniform results between laboratories, (b) reliable reporting of germination for sale purposes, (c) regulation of seed purchases in States with tree seed labeling laws (e.g., New York, Georgia, etc.), and (d) nursery sowing rates that would give desired seedbed densities for strong, well-spaced seedlings.

## AOSA Progress

The AOSA, therefore, seriously considered establishing rules covering official methods for testing tree and shrub seeds. These rules would have legal applications.

In 1958, the AOSA appointed a chairman of a Tree and Shrub Seed Committee to explore all tree seed testing prior to developing official tree seed testing rules. Various subgroups within the Committee were designated to study subjects such as germination, purity, legislation, and bibliography. However, this arrangement proved too cumbersome.

Therefore, at the 1959 annual meeting of the AOSA, the groups were reduced to two main subcommittees: purity and germination. At the same time, a complete list of tree and shrub seeds was reduced to about 100 species most commonly found

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tario. The other committee members are C. E. Heit, Department of Seed Investigations, New York State Agricultural Experiment Station, Geneva, N.Y.; E. E. Hardin, Seed Laboratory, Oregon State University, Corvallis, Ore.; C. E. Johnson, Seed Section, Michigan Department of Agriculture, East Lansing, Mich.; W. P. Ditmer, Bureau of Plant Indus

try, Pennsylvania Department of Agriculture, Harrisburg, Pa.; and LeRoy Jones, Eastern Tree Seed Laboratory, U.S. Forest Service, Macon, Ga.

2 Most seed laws and seed certification standards in the United States and Canada specify that germination and related seed characteristics be reported on the basis of tests conducted according to AOSA standards. In Europe ISTA standards generally are official.

commerce and for which satisfactory germination methods were known.

At the 1961 AOSA meeting, the two subcommittees submitted tentative rules for purity and germination of these 100 species for study and discussion.

In 1962, the two subcommittees were combined into one committee under one chairman. The duty of this committee was to draft rules for testing tree and shrub seeds to meet the standards required by the Association. The committee attempted to incorporate in the draft the knowledge and work of all institutions and individuals in forestry and agriculture that had made contributions in this field. Liaison was initiated and maintained between the ISTA Forest Tree Seed Committee and the AOSA Tree and Shrub Committee. The Tree Seed Committee of the Society of American Foresters also maintained contact with the ISTA and AOSA Committees and urged uniform test standards. The AOSA Committee expected that a single germination method would finally be recommended for each species, but for some species, an alternate method had to be suggested. For a few dormant species, the embryo excision or the tetrazolium method of germination was included. The proposed rules as drafted by the AOSA Committee were found unsatisfactory for several very important commercial forest tree species grown on the west coast and in part of the South. Presentation of the draft to the AOSA membership was delayed

a year so the foresters concerned could further compare the methods they were using and those being proposed by the Committee.

A revised draft of the rules was presented to the AOSA membership at the 1963 annual meeting. The rules were formally adopted at the 1964 annual meeting. These rules became official for testing tree and shrub seeds on July 1, 1965.

As far as possible, the AOSA rules contain the methods used and the suggestions made by foresters and agriculturalists testing tree and shrub seeds. As improved methods and new techniques develop, they can be incorporated into these rules on an interim basis during any year, and on a regular basis when the rules are revised every 5 years. The AOSA Tree and Shrub Seed Committee hopes that these rules will be satisfactory to everyone requiring the testing or germination of tree and shrub seeds. Suggested improvements and recommendations can be made at any time to the Chairman, Rules Committee, Association of Official Analysts. Prompt attention is assured by the Chairman. Therefore, the rules will contain the best methods currently available for testing tree and shrub seeds.

#### Literature Cited

(1) U.S. Forest Service.

1948. Woody-plant seed manual. USDA Misc. Publ. 654, 416 pp., illus.