TECHNICAL SESSION V

Seed Testing

J. Hill, E. Belcher, C. Heit

Comments: E. Belcher -- Sampling out of every container in a given lot of seed is important due to the variation possible within separate containers.

Comments: J. Hill -- From past experience a 5-6% sampling error from year to year is possible even within the same container.

Comments:

1. C. Heit -- Adequate sampling is of extreme importance and that the "differences" in germination are often due to a sampling error.

2. C. Heit -- Research findings at seed labs can result in practical, cultural recommendations for nurserymen. In 1964, over 300 species of trees and shrubs were tested at Geneva including 149 pine, 18 spruce, and 39 Eucalypts. The New York seed lab made over 30,000 seed tests last year (all kinds of seed). Adequate information concerning methods of seed handling for many tree species is still not available.

3. C. Heit -- Importing seed from foreign countries raises several problems. Mislabeled and dead seed is being shipped into this country. We need control on imports. Documented evidence is available from our laboratory for those who request this information. Fumigation with methyl bromide of seeds of certain imported pine and spruce species by U. S. Bureau of Plant Quarantine has resulted in serious injury to seed germination and vitality.

Question: Terrell -- Are there additional advantages in sowing white pine in early fall over late fall?

Answer: Heit -- Yes, white pine, being one of the most dormant species sown in this region, should be sown in late September or early October for best results. Early fall-sown species should include all the white pine group, all true firs, American arborvitae and hemlock. Red pine, pitch pine, and white , red, black, and Serbian spruce are recommended for sowing later in the fall for best results. Good results are also possible for late November sowings of species such as Scotch and Austrian pine.

Question: What is the best procedure for germinating black cherry?

Answer: Belcher—Soak in 0.1% citric acid for 48 hours then stratify for 120 days, Fruit should be depulped as soon as possible after collection.

Comments: Belcher—Noted that for southern sources of white pine 60 day stratification is recommended while for northern sources, 40 days may prove adequate. Stratification under uniform conditions may be advantageous (if practical) to obtain a more uniform crop.

Question: Any recommendations on Japanese black pine?

Answer: Heit--japanese black pine has a slight dormancy and fall sowing is suggested. Japanese red pine is not as dormant, but could be sown in late fall with success.

Question: How can you get basswood to germinate?

Answer: Heit—Three problems must be overcome to secure optimum germination of basswood seed: (1) a tough leathery outer coat, (2)a hard-seeded inner coat, and (3) a dormant embryo. Prof essor Spaeth of Cornell wrote a thesis on this species many years ago, It might still be available. Early seed collection when the fruit is still greenish in color in September and sowing the fruit at once (by September 15) have given fair germination the following spring,

Question: For direct seeding, how can germination tests be used to estimate seeding rates, etc.?

Answer: Germination and seed per pound figures must both be considered along with known field performance and species peculiarities. Site conditions and time of seeding - spring vs. fall, etc. - must also be considered.

Question: What is the reason why germination does not come up to expected results indicated in germination tests?

Answer: A good laboratory germination test considers both total germination percent and vitality of seed, The percent of strong, germinable seed under ideal field conditions is the figure furnished the nurseryman. He must adjust these figures to his local nursery conditions with other variables learned from years of experience, Each year brings new factors or variables in nursery seeding and cultural production, While many cannot be precisely predicted, a number of variables can be controlled by the expert nurseryman.