

STANDARD SEED TESTING PROCEDURES
OREGON STATE UNIVERSITY SEED TESTING LABORATORY

by
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Through the use of slides, Mr. Hardin explained the operation of the Oregon State Seed Testing Laboratory.

Procedures explained included the calculation of purity, germination testing, and moisture testing. For purity, 2500 to 3000 seeds are examined from each sample. The inert matter is separated and amount calculated by weight. The pure seeds are counted by an electronic counter for 1000 seed weight and the cutting test. The pure seed is germinated on sponge rock - the germination standards as prescribed by the Western Forest Tree Seed Council being followed. Moisture tests are also performed at the Laboratory. Mr. Hardin emphasized the importance of placing the seed in a moisture tight container when the seed is taken from storage for testing. An accurate test can only be made through care in preventing the seed from gaining or losing moisture during packaging and shipping.

The question was asked if a fungicide is used to prevent disease damage when the seed is germinating. Mr. Hardin stated that only water is used in the germination dishes and that they do not treat seeds prior to planting. They are tested as received.

Other tests available at the Oregon State Seed Testing Laboratory include hydrogen peroxide, tetrazolium chloride, excised embryo, and X-ray tests. The hydrogen peroxide and tetrazolium tests are quick tests to indicate if the seed is capable of growth. The excised embryo tests will show the condition of the embryo. X-ray test will show if the seed are filled, the presence of insects, and damage to seed coats. The X-ray should probably be used in place of a cutting test since it provides the same information as well as additional information.

A comparison of the results of the different methods of germination determination was presented:

	<u>Ponderosa pine</u>	<u>Noble fir</u>	<u>Sugar pine</u>
No chill	63%	27%	0%
Pre-chill	65	28	46
Tetrazolium Chloride	71	53	67
Hydrogen peroxide	73	54	55
Excised embryo	76	54	56
X-ray	76	67	96

The question was asked about how long after the peak of germination the seed are held. Mr. Hardin replied that the seed are held for the amount of time specified in the rules. The remaining seed are cut for recording the condition of the seed that did not germinate.

A question was asked if germination tests can be related to nursery germination. Mr. Hardin stated that the Laboratory can give only maximum germination results. The conditions for germination in the Laboratory are optimum and field conditions cannot be simulated.