CLEANING REDWOOD SEED

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Introduction

Redwood (Sequoia sempervirens) seed germination is characteristically low due to the high percentage of unsound seed. The Simpson Timber Company provided a 6 pound lot of redwood seed to the Small Lot Seed Processing Workshop to evaluation procedures of improving seed lot viability. Initial germination was about eleven percent.

Procedure

A sample was drawn and x-rayed with polaroid film. Evaluation of the radiograph indicated that approximately fifteen percent of the seed were filled. The seed were run across a gravity table and the heaviest fraction separated from an intermediate and light fraction. Each fraction was then sampled and x-rayed for evaluation.

A sample of the original lot was also cleaned in a vacuum separator. Next, the heaviest fraction from the gravity table was processed in the vacuum separator and all samples x-rayed for evaluation.

Results

The results are summarized in the Table.

Discussion

Air controls on the gravity table could not be refined enough for this light weight seed to obtain a clear separation. In fact, considerable mixing of densities was observed. The gravity table did remove 90% of the empty bulk quickly.

The vacuum separator, although slower, gave more precise separations. With the original material an intermediate fraction was obtained which had to be re-run for complete separation. After removal of the main bulk on the gravity table, the separator provided precise separation with very little intermediate fraction.

The original material requires planting 15 seed per container to insure the minimum of empty containers. However, this does require considerable

ADDENDUM

transplanting of multiple seedlings. Increasing the viability to the 90's by removal of empty and partially filled seed permits planting of .1 or 2 seed per container and reduces further labor costs.

Upgrading of redwood seed in this manner also reduces the volume for storage and permits better knowledge of viability changes through improved sampling.

Sample	Full Seed %	Est. Germination	Approx. Wt. oz.	Actual Germination
Original	15	11	96	±11
Gravity:				
Heavy	60	50	11	24
Medium	60	50	40	30
Light	1	1	45	5
Vacuum separator				
Heavy	99	95	8	40
Medium	30	25	28	15
Light	1	±1	60	2
Gravity heavy followed by vacuum separator:				
Heavy	100	95	7½	--
Light	0	0	3½	--

transplanting of multiple seedlings. Increasing the viability to the 90's by removal of empty and partially filled seed permits planting of 1 or 2 seed per container and reduces further labor costs.

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Sample	Full Seed %	Est. Germination	Approx. wt. oz.	Actual Germination
Original	15	11	96	+11
Gravity:				
Heavy	60	50	11	
Medium	4	+1	40	
Light	1	1	45	
Vacuum separator				
Heavy	99	95	8	
Medium	60	50	28	
Light	1	+1	60	
Gravity heavy followed by vacuum separator:				
Heavy	100	95	7 1/2	
Light	0	0	3 1/2	