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SURVIVAL AND GROWTH OF FRESH AND STORED PLANTING STOCK

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Does planting stock that has been kept in storage survive and grow as well as freshly dug stock? This question is important because the ground at a forest nursery may still be frozen when spring planting time arrives in the warmer parts of the region. This means that seedlings for spring planting need to be dug in the fall, kept in cold storage over winter, and shipped to planting sites in the spring. If this procedure is not satisfactory, it will be necessary to ship seedlings in the fall and heel them in at the planting site, or build new nurseries in the warmer areas.

The Study

A total of 2,387 Douglas-fir and Port-Orford-cedar seedlings were planted on a typical coastal clear-cut tract near Waldport, Oregon, in the spring of 1943. Approximately half of these were freshly dug seedlings from the Oregon Forest Nursery. The others had been stored in a cold room at the nursery for two months prior to planting. The trees were planted in long rows beginning in a creek bottom and extending up and over a high ridge to provide a variety of growing conditions. Planting was done by three men who changed species and rows every hundred trees to minimize any variation due to planting techniques. Spacing averaged six feet in the rows by eight feet between rows. Each tree was staked and numbered.

Survival counts were made following the first, second, third, and fifth growing seasons. During the third and fifth year height measurements were also taken. A final examination of the plantation was made in June 1952.

Results

The planting stock that was stored for two months prior to planting has survived and grown as well as the freshly dug stock (table 1).

Early survival and height measurements slightly favored the stored stock. However, none of these early differences were significant, and no significant differences in survival or height had become apparent by the tenth growing season.

The differences between species were more pronounced. On this study site Douglas-fir survived better than Port-Orford-cedar and was almost 4 times as tall by the tenth growing season.

Table 1.--Survival and height of freshly dug and stored planting stock

Item	Douglas-fir		Port-Orford-Cedar	
	Freshly Dug	Stored	Freshly Dug	Stored
Number of trees planted, Spring, 1943	600	589	599	599
Survival in Percent:				
Fall 1943	92	94	86	92
Fall 1944	88	88	81	85
Fall 1945	84	83	76	77
Fall 1947	79	76	72	68
Summer 1952	73	72	60	59
Average height in feet:				
Fall 1945	1.6	1.9	0.9	0.9
Fall 1947	3.4	3.7	1.0	1.1
Summer 1952	9.8	9.8	2.3	2.7