

SEEDLING QUALITY CONTROL

by

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Introduction

We are all creatures of habit. We tend to perform operations in a certain manner because that is the way we have done them for a long time. But sometimes we should stop and consider--is this necessarily the only way or the best way?

We all know that if a plantation fails, the district blames the nursery and says the stock was no good. The nursery replies that there was nothing wrong with the stock and that the district "goofed up" somewhere. Who is right? Can the nurseryman be sure that all the time, all the stock that goes out of the nursery gate is in tip-top shape?

This study was an attempt to answer this question in one particular year at the L. T. "Mike" Webster Nursery.

Objective

The objective was to investigate all phases of handling 2-0 nursery stock to find out if stock leaving the nursery is vigorous and healthy. Results are expressed in terms of first year seedling survival.

Method

1. Seed Source. The three largest lots of 2-0 westside Douglas-fir were selected. These were designated M6, M7 and M17.
2. Rabbit Repellent Spray. All trees were sprayed with 10% TMTD (by weight) rabbit repellent in the beds.
3. Date of sampling. Beginning, middle and end of the planting season. The fall of 1962 was very mild and open and lifting did not start until well into December. Sampling was made in late December, the third week of February 1963 and the second week of April 1963. Because this was a test of operational procedures, sampling was necessarily tied in with operational lifting.
4. Sampling Points. These were selected to represent four stages along the usual production line.
 - 1) Carefully lifted from the beds with a shovel, Represented no handling by the nursery crew and referred to as "before lifting."
 - 2) Samples were taken from the boxes in the receiving room. Represented trees that had been lifted in the usual manner by the nursery crew and hauled on the trailer to the receiving room. Referred to as "receiving room."

- 3) Samples were taken` from the end of the table in the tying room. Represented trees lifted by the nursery crew, hauled to the receiving room, graded, culled, counted and tied by the women on the table.
 - 4) The fourth sampling point included all stages up to sampling point three, plus trimming of the roots. This represents all standard nursery procedures up to the time the trees are bagged or baled. Referred to as "roots trimmed."
5. Sample Size,
- 1) Fifty trees per sampling point per seed source per date were outplanted in the outplanting area,
 - 2) One hundred trees per sampling point per seed source per date were outplanted in the field.
6. Planting Area. Field planting was carried out at Porter Creek, Grays Harbor County, Section 11, Township 17 North, Range 5 West. The area had been scarified the previous spring.

Results

Planting was carried out by Milton Wolfe, J. M. Finnis, and boys from the Youth Camp, One hundred trees were planted per seed source per sampling point per lifting date. Planters were switched every twenty-five trees to eliminate any "planter effect,"

Survival counts and height measurements were made in December 1963 after one growing season, and survival is shown in the following table.

Summary of First Year Survival

<u>Date of Planting</u>	<u>Average Survival Percent</u>
Early	92.6
Mid	96.2
Late	97.8
<u>Seed Source</u>	
M6	96.0
M7	95.9
M17	94.1
<u>Sampling Point</u>	
Before lifting	96.0
Receiving room	94.6
Tying room	96.2
Roots trimmed	95.3

Overall Survival 95.5%

Conclusions

1. Results, experienced in terms of first year seedling survival are excellent and uniform.
2. There is no difference in survival from samples taken anywhere along the production line.
3. There is no difference in survival between different dates of sampling.
4. There is no difference in survival between samples taken from the three different seed sources.
5. For these particular seed sources in this particular year, the L. T. "Mike" Webster Nursery was producing high quality seedlings.

Comments

Since this date, the Nursery has been producing an increasingly large proportion of transplant trees. Production of these large trees poses a whole new set of problems. We should seriously consider a new study to check the quality of these big trees.