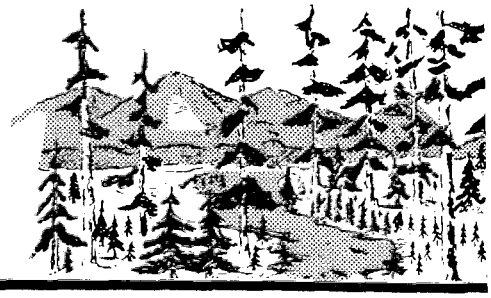
DEPARTMENT OF FORESTRY · CANADA ·

Timber Talks



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LATERAL ROOT PRUNING OF SEEDLINGS

No. 32

Reforestation can be achieved with planting seedlings whether transplanted or not, but the increasing demand for planting stock and the high cost of labour have not favoured the transplants. Seedlings that have not been transplanted are generally larger than transplants of the same age, and when out-planted attain a better early height growth. Transplants have a more compact root system which facilitates planting and usually have better survival.

Roots of seedlings growing in nurseries are pruned to acquire the advantages of both types of stock, and efficient mechanical devices have been developed to sever the roots. The usual practice is to bottom prune the tap roots and only limited consideration has been given to the results that might be obtained from lateral root pruning. An investigation was undertaken to determine when and how side pruning might best be accomplished and the effect of the treatment on seedling growth.

Douglas-fir 1-0 seedlings, in rows 7" apart were bottom pruned at a depth of six inches, the last week in April. At the same date and weekly thereafter until September 8, the roots of 50 seedlings were lateral pruned on two sides and roots of 150 seedlings pruned on one side. The latter were pruned on the untreated side, in groups of 50, at 2, 4 and 6-week intervals. All seedlings were lifted during October and measured.

Roots of seedlings grow most rapidly in the Spring, become relatively inactive during June and July, and elongate again in August. Pruning in the Spring did not result in the formation of new roots but the growth of roots already initiated was stimulated; lateral root pruning in the Spring was ineffective. Roots pruned on two sides during June and July developed new roots at the place of severance; formation of new roots from pruning on one side was much less. Seedlings with initial poor root systems responded best to treatment. Pruning on one side and on another side at 2-week intervals produced a better root system than when the interval between prunings was longer.

The height growth of pruned seedlings was equal to that of untreated seedlings. Lateral pruning produced desirable compact root systems that would reduce the likelihood of damage when lifted, and the possibility of roots of adjacent seedlings becoming tangled is greatly reduced. Pruning should be done with a sharp knife when the soil is dry.

REPORT: Lateral Root Pruning — A Promising Nursery Practice. S. Eis, Forest Research Laboratory, Victoria, B. C.