

SEEDBED ROOT PRUNER

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It has been the practice at the Chittenden Nursery to root prune any seedlings being carried over for the third year in the seedbeds. This, for the most part, has been red pine stock. The usual practice in root pruning has been to run a pruning blade under the bed at a depth of 5 to 6 inches thus cutting off all of the vertical roots extending to that depth. This has resulted in the development of a fairly well balanced seedling, but it was believed that if some of the side roots could be pruned, a better root system and a better top-root ratio would be obtained. Examination of the seedlings after they had been root pruned on the bottom showed that only about 20% of the roots were vertical roots and had been pruned.

To do this side root pruning a machine was developed, consisting of a series of rolling coulters mounted on an axle and spaced so they would fit between each row of trees. The axle was suspended on a frame to which a 3-point hitch was attached so that the coulters could be raised and lowered by the hydraulic lift on a Ford or similar tractor. The coulters were 18 inches in diameter and permitted the pruning of the roots to a depth of 5 to 6 inches.

Due to delays in getting the root pruner properly adjusted, it was early June before the root pruning of the side roots was completed. Two weeks after the side roots had been pruned the bottom roots were pruned, as in the past. The seedlings started to develop 2 or more roots at the point where they were cut within 2 weeks. The development of rootlets along the pruned roots seemed to be stimulated. Approximately fifty percent of the main horizontal roots were pruned. By fall the pruned roots had developed several roots at the point of pruning, and appeared to have more rootlets than the unpruned trees. The top-root ratio was not determined, as no unpruned stock was available for comparison.

Over five million red pine seedlings were thus root pruned in the spring of 1955 with a resulting loss of only a few seedlings which were injured in the initial trials before the machine was properly adjusted.

To see if root pruning late in the fall of the second season or pruning early in the spring before root growth starts would give a still better root development a few beds were side pruned in the fall of 1955, and most of the remaining beds will be pruned as soon as possible in the spring.

When the root pruned trees were lifted in the fall of 1955 it was found that their roots were not interlaced with those of the trees in the adjacent row and could be separated easier, resulting in less damage to the root system.

Plans for this root pruner are being prepared.