# OBLIQUE ROOT PRINING BLADE

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More than ninety percent of the planting stock shipped by the Col. W. B. Greeley Forest Nursery is 2-0 which is commonly root pruned in the early spring of its second season in the seedbeds. Heretofore, root pruning has been accomplished with a blade oriented perpendicularly to the direction of travel. In 1954, on a visit to the Green Timbers Nursery of the British Columbia Forest Service at New Westminster, B. C., we observed a sledmounted root-pruning blade mounted obliquely to the direction of travel.

The bunching up or folding over of rootlets on the perpendicular root-pruning blade previously caused a thickening of the blade so that instead of shearing off the roots it has more of a lifting effect. This also necessitated time consuming cleaning of the blade after passing through each seedbed. The oblique blade mounted on a frame with a three-point hook-up has a general tendency to cut the roots with a more slicing effect and to clean itself as it passes under the seedbed.

For greater convenience, an oblique blade and carrier was designed for attachment to a standard hydraulic three-point hook-up (fig. 1).

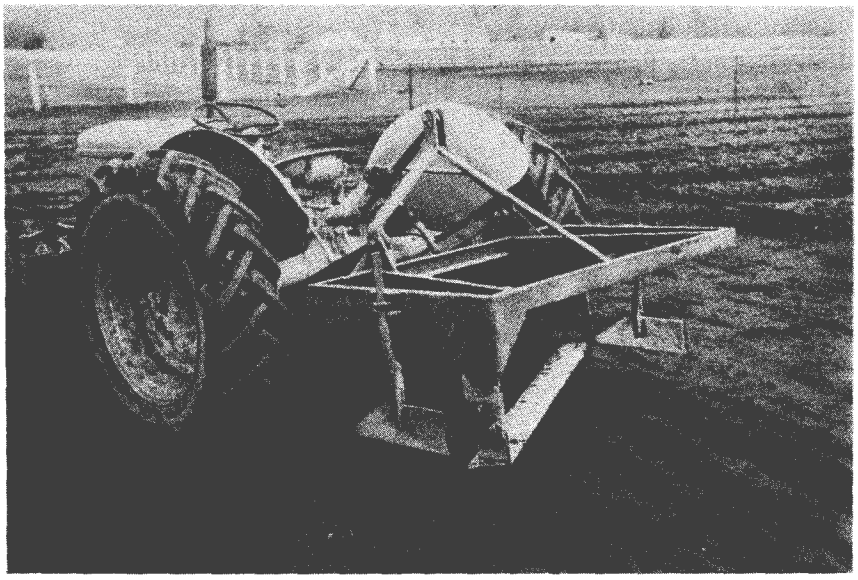

Figure 1. The oblique root pruning blade ready for work at the Col. W. B. Greeley Nursery.

In designing such a blade and carrier, it must be borne in mind that pivoting the front of the carrier about its horizontal axis moves the leading end of the blade less than the trailing end. This is considerably minimized by the type of lifting action produced by a three point hook-up. Nevertheless, it is well to design the blade and carrier so that the blade is truly horizontal in two dimensions when it is held at normal root-pruning depth. Since side pressure on the blade is sometimes developed from the blade being drawn through the ground diagonally it is necessary to fasten stabilizing fins to each side of the blade carrier (fig. 1).

The use of a stabilizing bar that is standard equipment with most tractors with a three-point hook up will also help to control the side-slipping or swaying of the blade carrier. If the seedbeds are raised to any height the stabilizing tins will also help to hold the shoulders of the bed intact as the blade passes through the ground. After an operator becomes experienced with this blade he can easily root prune twenty-five to thirty 250-foot seed beds per hour with a tractor speed of two to three miles per hour.

In the past five years many different experiments in root pruning have been tried at the Greeley Nursery with the result that it is now common practice to root prune in the early spring the 1-0 seedlings being held for 2-0. This is usually done in March while the ground is still firm enough to hold the seedlings but dry enough so the blade will pass through the ground easily without gumming up. It is desirable to root prune just before a rain so that the beds will settle back into place and any cracks in the beds caused by the pruning will be sealed so as to minimize loss of seedlings. The over-head sprinklers can always be used to moisten the pruned beds if rain doesn't materialize.

Over twenty-eight million seedlings, eight million in the spring of 1955, four million in the spring of 1956, and sixteen million in the spring of 1957 have been root pruned with this blade with a loss of very few seedlings.