

ROOT-ROLLED SEEDLINGS

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The present trend toward increased efficiency in work of all kinds has brought about widespread efforts to improve both machine and hand planting methods. However, an analysis of field planting operations still shows this weak link: the loose roots of the planting stock--particularly coniferous stock--reduce the efficiency of both machine and hand planting. This loss is especially significant in machine planting where the loose roots prohibit automatic feed.

To strengthen this "weak link" why not roll the roots like a cigarette? The writer tried this method in March 1953 near Lafayette, Indiana.

One hundred Scotch pine seedlings (2-0) with 4- to 5-inch tops were "root rolled." The roots were pruned to about 4 inches and rolled with a small amount of moist vermiculite in 5- by 5-inch squares of waxed freezer paper (heavy kraft paper should do as well), much as one would roll a cigarette to form a roll of 1- to 1-1/4-inch diameter. The paper was crimped with the fingers at the top of the roll and folded and stapled at the bottom. After the seedlings were rolled, they were packed erect in a shallow cardboard box in which they were left in a shaded spot for 2 days. During this time no watering was necessary.

Hand planting the rolled stock was simple and fast. A 1-inch pipe with a stop to gage the depth of the hole was forced vertically into the ground, and the rolled seedling dropped into the hole and firmed in place with the heel. As this operation is performed, the imagination is stirred with the possibilities of machine planting the stock with an automatic feed!

As a check 100 unrolled Scotch pine seedlings were planted with a planting bar. These seedlings came from the same lot as the rolled ones.

After one growing season the following were the results: 71 of the 100 rolled seedlings survived; 73 of the 100 unrolled seedlings survived. Statistically the difference probably is not significant.

About ten rolled seedlings that survived the growing season were dug up and examined. In all the paper had rotted away; the vermiculite had somewhat diffused into the soil, and the roots showed normal development.

Although this idea is merely an extension of pot transplanting, the writer believes it has far more possibilities. To fully realize the possibilities this procedure should be followed: 1. Devise an automatic rolling machine to root-roll planting stock. 2. Make a "magazine" that will automatically feed the rolled seedlings (or transplants) on conventional planting machines. (Of course, there are possibilities for developing different, and perhaps better planting machines for handling rolled stock.) 3. Make a semi-automatic hand planting contrivance to plant rolled stock. 4. Investigate the use of nutrient solutions to moisten vermiculite.