TREE IMPROVEMENT AT KIMBERLY-CLARK

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Kimberly-Clark has a good supply of timber of all species and ages on its own lands. Nevertheless, we have long been interested in tree improvement, particularly in pulpwood species, so that trees of better form and resistance to diseases and insects can be grown more rapidly upon our lands. This is a subject of which we are increasingly conscious as we become more involved in nurseries and planting. We are interested in finding trees better in growth and vigor than the woods-run spruces, balsam fir, pines, and aspens.

The magic appeal for some years past has been hybrid poplar because of its extreme rapidity of growth. The first efforts made by this company in tree improvement were test plantings of hybrid poplars obtained from several sources.

Between 1939 and 1943 cuttings of several varieties of poplar were set out near Lake Gogebic at the western end of Upper Michigan. Some cuttings were obtained from St. Williams, Ontario, and others from Chalk River, Ontario, through the courtesy of Dr. Heimburgero Unfortunately, many trees died early because of no special care, while those remaining have cankered and assumed a poor form° Only a few individuals still remain and these offer no hope of being as good as our native aspen.

In 1954 we secured cuttings of the three best clones planted by P. Vogelsang for the Dow Chemical Company at Midland, Michigan, Growth of the first summer was browsed by deer last winter. Exceptional heat has made it difficult for the trees to recover even last year's growth. We do hope to have cuttings of at least one of these three clones, as it survived the winter quite well.

So far we have made only disappointing trials in hybrid poplars. But we feel that there is a practical step we can take in improving our spruce planting stock.

We are starting on a program of taking seed only from white spruce and black spruce trees selected as the best in form, rate of growth, and size in their respective stands. Our district foresters select individual spruce trees on cutting operations. At the proper time of year these trees are felled and the cone pickers are busy even as the bole of the tree is skidded out of the woods.

1/ Forester, Kimberly-Clark Corporation, Neenah, Wisconsin.

Although felling reserved seed trees is the method we now use for acquiring cones, we know we must have a better method, Investigations are being made of equipment so cones may be picked without damage to the seed tree, With this equipment we expect to make regular harvests of cones from spruce trees on existing roads or near enough so short spurs can give access. Trees for cone supply purposes have been selected in some of our districts. As quickly as equipment becomes available we will come to rely on this system for improving our forest tree seed and subsequently our planting stock.

We depend largely on the experience of our district foresters in judging whether an individual tree is fit for use as a seed source tree. The forester looks for rapid growth and good vigor in trees that have developed rapidly to as large as 15 inches in 60 years with a height of 54 to 60 feet on a good site. The crown may be from 1/3 to 1/2 of the height of the tree with relatively long needles, slender branches, and a long bole of little taper. Any sign of disease or insect attack will, of course, eliminate the tree from consideration.

Seed from our selected trees comes from a wide geographical range in the Lake States. Kimberly-Clark operates in Minnesota from Duluth north to the border, throughout northern Wisconsin, and across Michigan from Lake Gogebic to Drummond Island in the east. As we recognize that there may be geographic differences in any species through such a range, seed from each district is segregated in extraction and storage. Following seeding in our nurseries, the stock is earmarked for return to the district that provided the seed. This program has been followed in trial seedbeds at our new Lake Mary Nursery in Michigan and as much as possible at the Knife River Nursery in Minnesota. In an expanding planting program it has not always been possible to distribute stock to the district of seed source.

In summary, Kimberly-Clark's very limited activity in tree improvement has been in two directions: first, trials of several varieties of hybrid poplars starting in 1939 that have not shown any promise of being better than native aspens; and second, current efforts to select distinctively superior native spruce trees for seed source. Selection of these superior spruce trees is being followed by controlling individual seed lots so transplant stock can be returned to the district of seed source,

Our objective in tree improvement still is to find trees developed by cooperative scientific effort that are superior to the native strains with respect to rate of growth, wood quality, form, freedom from disease and insect attack, and ease of propagation. We will continue to cooperate with others to the best of our ability in test plantings and in finding any of our native trees that may be suitable for tree breeding.