FIVE-YEAR HEIGHT GROWTH COMPARISONS
OF GENETICALLY IMPROVED WHITE SPRUCE

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ABSTRACT.—White spruce (Picea glauca (Moench) Voss) is an economically important timber species in the Great Lakes Region. The height growth of trees originating in southeastern Ontario generally perform better than all other provenances. Recent progeny tests showed that selected families from Minnesota performed equally as well as the Ontario material. In 1993 a trial was established to compare growth performance of four types of white spruce genetic material. The material included (1) a rogued seedling seed orchard containing Minnesota sources, (2) an unrogued clonal seed orchard containing southeastern Ontario sources, (3) a traditional collection area for white spruce seed, and (4) a “local” seedlot. Seedlings were planted on three sites in five, 100-tree blocks for each source. Height of the trees was measured after five growing seasons. In all plantings, trees from the rogued seedling seed orchard containing Minnesota sources were the tallest, averaging 4-6 percent more height growth than the unrogued clonal orchard and the unselected “local” source. This seedlot was also 10-20 percent taller than trees from the traditional collection area. All plantings will be measured again after ten growing seasons. Selected trees are being grafted to create new seed orchards that should improve growth rates even further. Organizations interested in fiber production should use seed from these orchards to the extent possible.