FURROWING IMPROVES FIRST-YEAR SURVIVAL OF PLANTED SPRUCE AND PINE IN MANITOBA

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Ground preparation is often carried out before planting to increase survival of planted stock. Its success has been demonstrated, particularly on dry sites and in dry seasons (Shoulders 1957, Ferguson 1959, Scheer and Woods 1959). On the other hand, survival in Texas in a wet year was not increased by furrowing, disking, or flatbreaking[2] (Stransky 1959), and on an old field in Ohio survival was similar for white pine on both prepared and unprepared sites (Merz and Funk 1959).

First-year survival of small 1959 test plantations in the Interlake Area of Manitoba was greatly improved by preplanting ground preparation. Three species, 2-3 white spruce, 2-3 black spruce, and 2-2 jack pine, were planted (1) on unprepared ground, and (2) in furrows prepared with a middlebuster plow. Furrows were approximately 1[1] to 2 feet wide and 2 to 4 inches deep; the sod layer was overturned on both sides of the furrow. Two sites were planted, a gravel ridge and a sand flat. The former was characterized by a grass and herb cover, the latter by a shrub and herb cover. Growing-season precipitation (April to September inclusive) in 1959 was 18.0 inches; the long-term average for the area is 13.4 inches.

The effects of furrowing on first-year survival are shown in figure 1. It was more beneficial to spruce than pine and was of more value on the ridge than on the flat. These

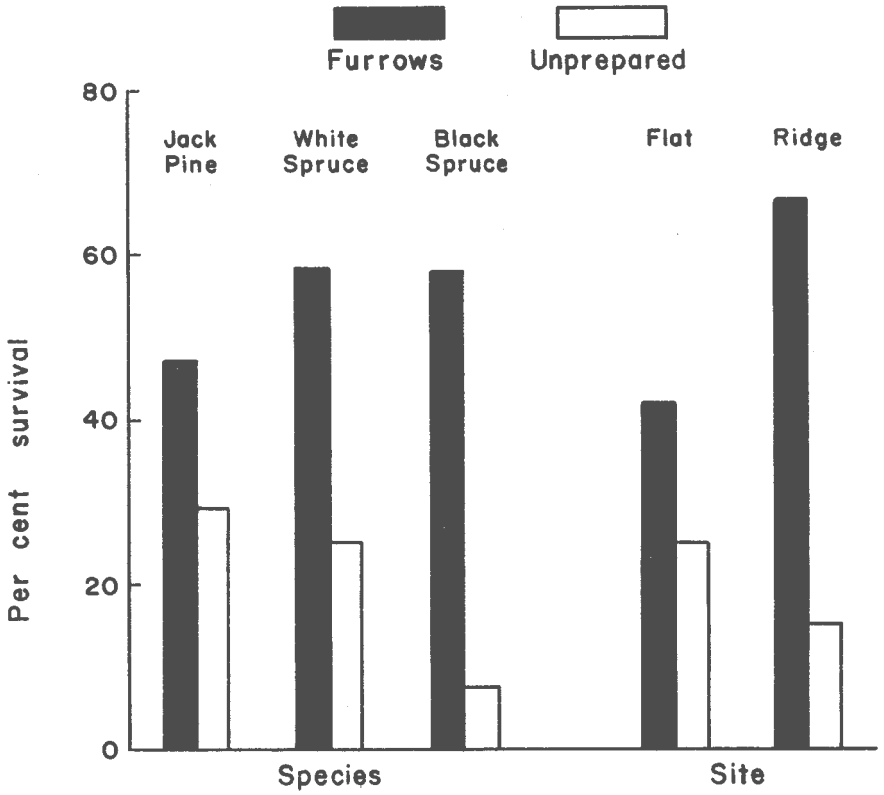

Figure 1.--Effect of furrowing on first-year survival of 1959 plantations, by species and by site.

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2 Disk plow followed by tandem disks.

results suggest that furrowing increased the amount of soil moisture available to trans - plants, as it was more beneficial to the species with higher water requirements and on the drier site.

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