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Abstract

Two-year field performance of lodgepole pine seedlings: Effects of container type, mycorrhizal fungal inoculants, and site preparation

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Interior lodgepole pine (*Pinus contorta* var. *latifolia*) seedlings were grown in Styroblocks™, Copperblocks™, or AirBlocks™, and inoculated with *Rhizopogon rubescens* or *Hebeloma longicaudum*, or left as noninoculated controls. Seedlings were planted into different rooting environments in two separate locations, encompassing two separate experiments. In experiment 1, seedlings were planted into fully rehabilitated landings (ripped with burn-pile debris and topsoil incorporated), ripped landings, and unprepared cutblocks in the spring. In experiment 2, seedlings were planted in a cutblock in manually screefed (i.e., boot screefed) planting sites or undisturbed forest floor planting sites in the summer. Seedlings in the fully rehabilitated landings were 21% taller, had 45% larger diameters, and were more vigorous than seedlings in landings that were simply ripped; seedlings planted in the unprepared cutblock were taller, but with a smaller diameter, than those on the rehabilitated landings. Seedlings in screefed microsites grew significantly larger (5%) than seedlings planted directly in the forest floor. After 2 years in the field, the sizes of spring-planted, noninoculated seedlings, and seedlings inoculated with ectomycorrhizal fungi were not significantly different. Inoculated summer-planted seedlings were approximately 5% larger than non-inoculated control seedlings. Among the variables we manipulated, planting environment had the greatest influence on seedling growth.

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