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Abstract

Field performance of pine stock types: Two-year results of a trial on interior lodgepole pine seedlings grown in Styroblocs, Copperblocks, or AirBlocks

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Copper-treated Styrofoam containers and containers with side slits have been designed to modify the root systems of seedlings grown in hardwall containers. By chemical- or air-pruning major lateral roots, they encourage a more fibrous, branched root system, which is more evenly distributed throughout the root plug.

In the study presented here, lodgepole pine (*Pinus contorta* var. *latifolia*) seedlings were grown in Copperblocks™, AirBlocks™, or conventional Styroblocs™ and planted into different rooting environments. Various laboratory tests were performed on the seedlings before planting, but these failed to predict responses to the treatments in the field. Container type influenced root development and potential root viability in the nursery; however, these differences had disappeared in the field after two growing seasons. Only in summer-planted seedlings was root egress near the top of the plug greater for copper-treated than for conventional seedlings in the field. Seedlings grown in Copperblocks with exclusively secondary needles were evaluated separately from those with only primary needles. The secondary-needle seedlings had greater height increments in both growing seasons, although no differences in root collar diameter were apparent. However, both types of seedlings were selected from a population grown under cultural conditions to induce secondary needles, and thus some of the differences may have a genetic basis. Spring-planted seedlings, grown on burnt slopes, grew 5–18% taller than those on screefed plots and 43–67% taller than seedlings on ripped landings. Our major conclusion is that, provided the seedlings are healthy, planting location is more important than stock type.

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