


Irrigation and container type impact red maple five years after landscape planting

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Abstract: The objective of this research was to compare red maple (*Acer rubrum* L.) root and canopy growth five years after landscape planting from seven different container designs maintained with two irrigation regimes. Trees planted from low profile air root pruning containers had larger trunks five years after landscape installation than those planted from regular air root pruning containers, wood boxes with cupric hydroxide coating, or standard black plastic containers with cupric hydroxide coating. Despite significant differences in root weight and amount of deflected roots among container types when trees were planted in the landscape, root number, root depth, and radial root distribution around the trunk were identical five years after planting from all container types. However, frequency of irrigation in the first 24 weeks following planting had a significant effect on root system structure even five years later. Frequent irrigation resulted in larger trunks, more roots, greater root cross sectional area, and a more uniform radial root distribution. The increase in root growth on frequently irrigated trees occurred exclusively in the top 30.5 cm (12 in) of soil. Codominant stems four years after planting were equally common regardless of production method and irrigation treatment. With the exception of the low profile air root pruned container, the reduction in root defects on the outer surface of root balls grown in containers designed to reduce defects appeared to provide no measurable benefit to trees five months or five years after planting into the landscape. Irrigation management after planting had a more positive impact on landscape root growth and distribution than container type. 



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