

# Container Type and Volume Influences Adventitious Rooting and Subsequent Field Growth of Stem Cuttings of Loblolly Pine

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**ABSTRACT:** Container type and size can influence rooting success, development, and subsequent field growth of loblolly pine rooted cuttings. To evaluate differences between containers, a series of two experiments were conducted comparing rooting in commercially available Jiffy forestry peat pellets of various sizes to a rigid plastic container system considered to represent a commercially obtainable optimum. Third experiment was conducted to compare the effect of three volumes of Ray Leach Containers on rooting percentage and root system quality. The same three families were used in experiments 1 and 2 where dormant and succulent cuttings were rooted, respectively Succulent cuttings from a different set of three families were used in experiment 3. Rooted cuttings from experiments 2 and 3 also were field planted and evaluated for the effect of container type and size on 1st-year growth. In the first two experiments, rooting percentages of the best treatments (Jiffy pellets. 25-65, 30--65, 36-65. 36-75, and 42-65 mm) were equal to the controls, indicating that the peat pellets offer (1 practical alternative 10 rooting in rigid containers. Rooting percentages. however. declined in larger Jiffy pellets (42-80 min and 50-95 mm pellets), but root masses of rooted cuttings were quite large. In the smaller Jiffy pellets, roots tended to grow into adjacent pellets resulting in lower root mass after the pellets were harvested for planting. Loiter root //lass at preplanting equated to less root mass after 1 year in the field, despite the fact that the root systems were more horizontally developed than those produced in rigid containers. Rooting percentages and morphology were wider genetic control and there were statistically significant container interactions. Because these interactions were caused primarily changes in magnitude rather than changes in ranks, a few of the containers could be used to optimize production for the limited number of genotypes tested here. Alternative methods of producing rooted cuttings in Jiffy pellets are compared briefly with production systems ill rigid containers and some important considerations are discussed. South.

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**L**oblolly pine (*Pinus taeda* L.) is the most important timber species in the southeast United States. Tree improvement efforts within the last 50 years have increased growth rate, fiber volume, and disease resistance in seedlings of

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