ROOTSTOCK SCREENING FOR LOBLOLLY PINE SEED ORCHARDS

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In two separate but related experiments, seedlings from 20 families were used as rootstocks for grafting seed orchard clones. The rootstocks were half-sib families from orchard clones chosen to represent a wide range of flowering and survival capabilities, based on their performance in a first-generation seed orchard. Ungrafted seedlings from the rootstock families were also planted.

The objectives of the study were to identify rootstock families which would be useful in tree improvement programs and to determine what characteristics, if any, could be used *a priori* to choose families for potential rootstock use.

Rootstock family significantly affected survival, growth, flowering and foliar nutrients of the grafted ramets. Neither survival nor growth of the grafts was related to survival or growth of the orchard clones from which their rootstocks were derived, however. Foliar nutrients of the grafts were not correlated with foliar nutrients of the related seedlings, and this characteristic did not appear to have any utility in predicting performance.

There was a significant tendency for rootstock families derived from good flowering clones to increase the flowering of scions grafted on these rootstocks. Potential causes for this rather curious outcome are discussed.