

COMPETITION, AND A SINGLE-TREE, RANDOM, INTERLOCKING DESIGN¹

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ABSTRACT

Forest tree experiments, by their nature, are expensive on a per-organism basis, and require large areas which are generally more variable than similar areas used for agricultural research. A proposal is presented to take advantage of the efficiencies of small-plot designs, while minimizing some of their difficulties. The design basically involves interlocking three blocks, which are independently randomized, with plot members within a block also at random (non-contiguous). This design allows small plots which are relatively safe from disqualification due to local damage or mortality.

Such a small-plot design allows (requires) a high level of inter-genotype competition. It is argued that such competition, while not necessarily desirable in an experiment, is at least more normal in advanced-selection forest plantations than in most plantings of selected agricultural varieties. Competition can be delayed by two systematic thinnings, with both the thinning and residual fully analysable as balanced and unbiased experiments.

¹ Developed during the tenure of a National Science Foundation Post-doctoral Fellowship in the Department of Genetics, North Carolina State College.

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