

PROGENY TESTING IN PRACTICAL TREE IMPROVEMENT

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J. W. Wright

ABSTRACT .--Good quality planting stock and good plantation care during the early years are very important. A well executed progeny test of moderately good design usually gives much more information than a poorly executed experiment of the most refined design. Half-sib progeny tests are less expensive, and give less gain and information than full-sib progeny tests. The cost, gain and information ratios between the two types vary considerably, depending on several factors. Often, with northern conifers, half-sib tests are preferable for first-generation work and full-sib tests in more advanced breeding programs. Progeny tests often need to contain a few hundred families. With tests that large it is desirable to compute optimum family size (often smaller than has been used in the past) and to consider carefully the effects of plot size and number of replications on efficiency; otherwise the tests may become unmanageable. A variation of the randomized complete block design is often regarded as the most practicable for large tests. A few hints are included as to desirable measurement and analysis procedures.

^{1/} Department of Forestry, Michigan State University, East Lansing, Michigan, U.S.A.