

EFFECTS OF PROPAGATION MEDIA ON THE ROOTING OF LOBLOLLY PINE

H. E. Stelzer¹, S. L. Reed²

¹Research Geneticist, USFS Southern Institute of Forest Genetics, Normal, AL 35762, and

²Biological Science Technician, USFS Southern Institute of Forest Genetics, Normal, AL 35762

Abstract. Four types of propagation media were evaluated for their effects on the rooting of loblolly pine cuttings: (1) a 1:2 (v:v) mixture of peat:perlite in 10-in' Ray Leach Super CellsTM (SC), (2) the same peat:perlite mixture in 20x10x2-in (LxWxH) propagation flats (PF), (3) Oasis Rootcubes[®] (RC), and (4) Oasis Wedges[®] (W). Cutting material originated from the three best-rooting clones and three worst-rooting clones in each of two related full-sib families. The cuttings were 28-months-old (from seed) at the time they were set on May 25, 1996. Five cuttings were set for each media type/family/rooting class/clone combination in each of three blocks. All effects were considered fixed and clones were nested within family/rooting class. Intermittent mist (8 sec/15 min) was provided by stationary Ray-Jet[®] nozzles with a delivery rate of 7 gpm. After 90 days, the cuttings were evaluated for presence of roots, and number and average length of those roots longer than 1/2-in. Rooting percentage data revealed significant effects for media type, rooting class, and clone. Mean rooting percentages were 51, 31, 30, and 26% for SC, PF, W, and RC, respectively. Rooted cuttings in the SC medium had significantly more and longer roots compared to rooted cuttings in any of the other three media. In addition, there were fewer cases of "L-shaped" roots with rooted cuttings grown in the SC medium. Lateral root development was greater in the peat:perlite media compared to the Oasis material. All of this probably is a function of better drainage in the peat:perlite and the Super Cell containers training the developing roots in a downward direction. The intermittent mist simply delivered too much water to the Oasis material. This rooting trial is currently being repeated under a traveling mist boom system. Early results indicate that while rooting percentages have increased in the peat:perlite medium, the Oasis medium became too dry during the critical early stages of root initiation. More research apparently is needed if Oasis material is to be used in propagating difficult-to-root species such as loblolly pine.

Keywords: *Pinus taeda* L., vegetative propagation, rooted cuttings.