

Effects of Antitranspirants and a Water Absorbing Polymer on the Establishment of Transplanted Live Oaks¹

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The cost and return of every operation in a nursery is examined by the prudent manager. Use of antitranspirants and other commercially available products to aid in survival and establishment of transplanted trees is no exception. For this reason, an experiment was conducted at the tree nursery of Burbage Tree Movers in Oak Hill, Florida. Two antitranspirants and a water-absorbing polymer were evaluated as aids to survival and establishment of live oaks under 2 water regimes.

Sixty-four 4-inch caliper live oaks, *Quercus virginiana*, were selected from a block of 800 trees that had been grown in the field for 4.5 years. On the morning of August 8, 1984, 16 trees were sprayed with a 1 to 10 dilution of Wilt-Pruf (Wilt-Pruf Products, Inc., Greenwich, CT), 16 trees were sprayed with a 1 to 2 dilution of Cloud Cover (Adkar, Inc., McAllen, TX) and 16 trees were sprayed with water. All leaves were thoroughly covered using a back-pack, air-blast sprayer. Six oz. of TerraSorb, a starch polymer by Industrial Services International,

Bradenton, FL, were distributed on the sides of each of 16 planting holes for trees not sprayed. Trees were dug with a 44-inch tree spade on August 22 and 23 and moved 100 to 200 yards to another site in the nursery where holes were prepared using the same tree spade. The air temperature was 88 to 90° F and the sky was partly cloudy. All trees were watered thoroughly after transplanting and a berm of soil was constructed around each tree to facilitate water retention. Ten branch tips on each tree were marked with paint for measuring the amount of new growth in the spring of 1985.

Treatments were replicated 8 times in a split block design with water regime constituting the sub-blocks. Each tree received 18 gallons of water applied through two Robert's spot spitters per tree either daily or 7 days after the last irrigation or rainfall of at least 1 inch. Trees were spaced 8 feet on center and 12 feet were allowed between blocks. Leaf drop was rated 6, 15 and 21 days after transplanting using a scale of 1 to 6 with 1 denoting no leaf drop

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and 6 indicating severe leaf drop. Visual quality ratings were made on days 21, 36, 57 and 250 using a scale of 1 to 3 with 3 denoting the highest quality. The length of new growth on the 10 marked branches and the number of surviving trees was determined May 8, 1985.

There were no interactive effects on survival between water rate and the other treatments. Fifty-five percent of trees watered weekly and 65 percent of trees watered daily survived. Visual ratings after 21 and 37 days were greater if trees were watered daily (2.4, 2.4) than those watered weekly (2.1, 2.1). Sixty-seven, 80, 38 and 54 percent of trees survived when treated with water, Wilt-Pruf, Cloud Cover or TerraSorb, respectively.

Cloud Cover resulted in less leaf drop (2.4) than Wilt-Pruf (3.7) on day 6 and the effects of the control (3.2) and TerraSorb (2.7) were intermediate. There were no differences in leaf drop due to treatments on days 15 or 21.

There was no significant visual quality rating difference due to the antitranspirants or the TerraSorb on days 36, 57 and 250. If only surviving trees were used in the analysis, Cloud Cover resulted in the highest quality rating on days 36 and 57. However, only 6 of 16 trees treated with Cloud Cover survived. Mean branch tip growth was increased by the daily water (6.8 cm) compared to weekly watering (5.7 cm) only if TerraSorb had been added at planting. Otherwise, branch growth was not affected.

Transplanting 4-inch caliper live oaks in August in central Florida is risky under conditions described in this paper. Cloud Cover was of little benefit in terms of survival, but improved slightly the visual appearance of surviving trees approximately 1 and 2 months after transplanting. TerraSorb increased spring growth when the trees were watered weekly, while Wilt-Pruf appeared to aid in terms of survival. This study provided extreme conditions for tree survival, and different results may be obtained with other conditions.