

COMPARING TERA-SORB TO UGA FERTILITY PROGRAM IN FIRST-YEAR PLANTED PECAN TREES

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ABSTRACT

Applying 10-10-10 for non-bearing trees remains the standing UGA recommended program for non-bearing trees. There are other products on the market that may provide additional benefit to young trees. Terra-sorb is a superabsorbent, hydrogel material that claims to increase water-holding capacity of the soil 150 times its weight in water. It has never been researched in Georgia pecans. A trial was conducted in Pierce County, Georgia on first-year planted Excel pecan trees to observe the difference between Terra-sorb and the UGA Fertilizer program. The four treatments compared were: Terra-Sorb, UGA Fertilizer Program, Terra-Sorb + UGA Fertilizer Program and a control. These trees were planted in December 2019 with recommended amounts of each product. Tree height and caliper measurements were compared at the end of the season, along with leaf tissue analysis. In the first year, no statistical difference were found in height and caliper measurements, as well as nitrogen, phosphorous, and potassium content in the leaf.

MATERIALS & METHODS

Excel pecan trees were planted in Pierce County on Leefield sand with no irrigation in December 2019. Terra-Sorb, Redox and a combination of both were applied at recommended rates on trees for a single tree study. The treatments included: Terra-Sorb + Redox, Terra-Sorb, Terra-Sorb + UGA Fertility program, UGA Fertility Program and a control. Each treatment had five replications. One lb of 10-10-10 was applied to the UGA Fertilizer Program trees on June 12th. Tree height and caliper were measured in January and again in October. Leaf samples were taken on August 7th and submitted for leaf tissue analysis. Data was analyzed by Sigma Plot software.



Figure 1. Fertilizing trees in June with 10-10-10 for UGA Fertilizer Program.



Figure 2. In Pierce County, white latex paint was used to mark caliper measurements locations.

RESULTS & SUMMARY

There were no significant differences in tree height and caliper growth among trees. Interestingly, the trees in the control numerically grew more than trees in treatment, though difference was not significant (Table 1). Nitrogen (N), phosphorus (P) and potassium (K) was compared in leaf tissue samples and found to be no different among treatments (Table 2). This suggests that there are no horticultural or nutritional benefit for non-bearing trees fertilized with Terra-sorb compared to the UGA fertilizer program. Trees in this study were not irrigated which also provided a path to examine soil moisture holding capacity of these products. This project will continue through 2021 and possibly 2022 in case they provide a benefit later.

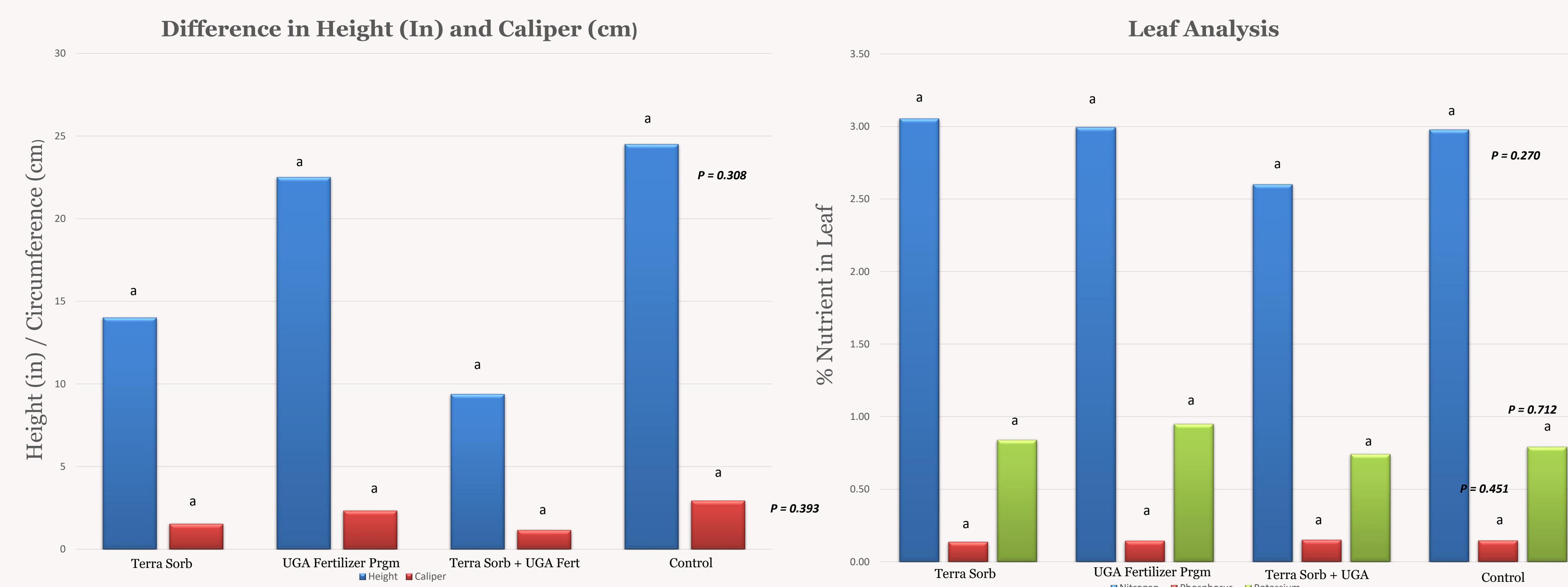


Table 1. Height and caliper difference among treatments.

Table 2. Nitrogen, Phosphorus and Potassium were analyzed within the leaf and found to be no different among treatments.

Treatment	Height Diff (In)	Caliper Diff (cm)	% Nitrogen	% Phosphorus	% Potassium
Terra Sorb	14.0a	1.5a	3.04a	0.84a	0.74a
UGA Fertilizer Program	22.5a	2.3a	3.0a	0.14a	0.95a
Terra Sorb + UGA Fert Prgm	9.3a	1.1a	2.6a	0.15a	0.74a
Control	24.5a	2.92a	2.98a	0.14a	0.79a

Table 3. Horticulture and leaf tissue analysis of treatments.

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