

Southern Region Small Fruit Consortium

Title: Blueberry Soil Amendments (Comprised of Woodland Waste Products) – A Comparison to the Industry Standard Pine Bark

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Public Abstract

In commercial blueberry production (where Southern highbush blueberries are chosen), adequate levels of organic matter are necessary for establishment and development of the crop. On sites with less than adequate levels present high mortality, poor root and shoot development can occur. Soils with elevated levels of naturally occurring organic matter are often difficult to cultivate, due to a periodic high water table and environmental sensitivity of the site (typically deemed as wetlands). The alternative to production in these areas is the modification of upland sites, by adding some source of organic matter to the soil, thorough incorporation of amendments (into the soil), creating raised beds, and topdressing (the beds) with the same product. The product of choice is traditionally pine bark. Pine bark is an item of high demand, for landscape mulch, heating sources, charcoal, nursery potting media or soil amendments. Yet, it is an item of finite supply. Pine bark availability is directly correlated to the lumber industry. Times of low timber prices and limited lumber demand can directly affect the volume of available raw pine bark, thereby limiting the availability and driving the price of suitable materials up. In times like these, amending the soil with the proper amount of pine bark for blueberry production can become a limiting factor for some growers. But, are there alternatives?

The primary goal of this project was to evaluate several different materials that might provide an adequate source of organic matter. By using (the industry standard) pine bark as the control, other materials were used as a comparison. These materials included: partially decomposed pine straw, partially decomposed pine wood (whole tree grind), and chipped (multi-species) hardwood. The four treatments were: pine straw (only), pine wood (only), a 2-way combination comprised of 75% pine straw and 25% pine wood, and a 3-way combination of 50% pine straw, 25% pine wood and 25% hardwood. The application rate of the amendment was 6 yd³ over the 135 ft (41 meter) row (equivalent to 200 yd³ per acre). Half of the material was rototilled into the soil, then bedded. The other half of the material was applied as a top dress (mulch) over the top of the row. Three sites were chosen: (1) the Musser Fruit Research Farm in Seneca, SC, (2) the Pee Dee Research and Education Center in Florence, SC, and (3) the Sandhill Research and Education Center in Columbia, SC. The Musser Fruit Research Farm has clay

to clay/loam soils; the Pee Dee REC has loamy/sand soil, and the Sandhill REC has deep sandy soils – covering all of the major upland soil types found throughout the Southeastern US.

Three cultivars were selected for each site. The Musser Fruit Research Farm's selections were one Southern highbush (Legacy) and two Northern highbush (Bluegold and Duke). At both the Pee Dee REC and the Sandhill REC, Southern highbush comprised all three selections – Camellia, Farthing, and Legacy. Each trial consisted of five plants of each cultivar. Each trial was replicated and randomized three times per amendment for each of the five amendments. Plant spacing was 3 feet (0.9144 meters) apart. Row spacing was 10 feet (3.048 meters). Quantitative data collected includes: survival/loss of plants, plant height, plant width (taken as an average), pH, percentage of organic matter, and number of new canes. Qualitative data collected includes: vigor, health, appearance, and bed condition. Initial data suggests that there are statistical differences between the treatments and control, with some of those differences being an improvement over the control. Multiple years of data will be necessary to allow for conclusions. Data from this study could have dramatic impacts on establishment practices for the blueberry industry.