

COMPARISON OF GROWTH RESPONSE OF TWO HIGHBUSH BLUEBERRY CULTIVARS TO TWO MULCHING MATERIALS

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Abstract. A new planting of Sharp and Misty cultivars of highbush (*Vaccinium corymbosum* L) blueberry plants were set out on Sparr fine sand in Citrus County, Florida. The grower chose to mulch with a pine bark potting soil grind of ¼ inch or smaller particle size. Because of the unusual success in establishment of this planting, other local growers considered changing from the standard pine bark run to the more expensive fine grind. An expansion planting by this grower contained a study of the two grinds of pine bark mulch. After two years, no difference in growth of either cultivar could be measured indicating that the very good establishment obtained by this grower was due to factors other than the mulch. The significance here is in the danger of making decisions based on observations and not sound research, a practice too often found in the agricultural industry.

As the blueberry production area in Florida has moved south, it is not uncommon to find plantings on marginal soils. Often the organic matter is low and pH levels push the upper limits of that acceptable for blueberries. Under these circumstances traditional production practices do not serve the grower very well. While mulching has been shown to improve growth (Haman et al., 1988; Norden, 1989) and is widely practiced, it is also considered to be a technique which enables the blueberry cultivars to adapt to this new environment. Plants are mulched heavily to promote a rooting area higher in organic matter and moisture retention. This is normally done in three to four foot wide strips down each row. A wide variety of organic materials are used, however, pine bark is the most common. In many plantings, where organic matter is low, the mulched area will be maintained for the life of the planting. Local grower interest in the success of a planting where a pine bark potting blend was used instead of the standard run bark prompted this investigation.

Materials and Methods

In December, 1994, two mulching trials were set out on a farm near Floral City in Citrus County, Florida. One compared the two mulches using the cultivar Sharpblue, the other using Misty. Both experiments were located on Sparr fine sand. Soils in both the Sharp and Misty sites were high to very high in phosphorous, potassium and magnesium and had soil

Table 1. Effect of two pine bark mulches on growth of Sharp blueberry plants.

	12/15/94*	06/06/95	11/17/95	10/23/96
Fine	114.2 ns	766.2 ns	3087.5 ns	8843.5 ns
Course	101.7	1069.5	2755.8	10429.6

*Date planted.

ns = Not significant at the .05 level of significance.

Size measurement = width n-s × width e-w × height 3 in inches.

pHs of 6.0 and 5.8 respectively. The percent organic matter was 3.1 for the Sharp area and 2.5 in the Misty area. Five hundred pounds of granular sulfur was applied per acre six months prior to planting. This reduced pH to 5.2 and 5.0 respectively at planting. Plants of both cultivars were purchased as year-old plants in one gallon containers from a commercial blueberry nursery. Plants were set three feet apart in the row. Rows were twelve feet apart. Both experiments contained ten replications. Each plot contained three plants with data collected from the center plant. A randomized complete block experimental design was used. Plants were to be measured for height, N-S width, and E-W width at planting, six, twelve, twenty-four, and thirty-six months. The product of these measurements was divided by three. The thirty-six month measurement was not made because plants were pruned at a standard height to reduce fruit set. Plants were mulched with both materials to a depth of four inches. The width of the mulched area was four feet and it extended the entire length of the row. Plants were fertilized with a 12-4-8 blueberry special seven times a year at rates increasing from 45 to 60 pounds of nitrogen per acre per year. Plants were irrigated as needed with micro sprinklers.

Results and Discussion

Mulch treatments did not significantly influence the size of the blueberry plants in either experiment (Table 1 and 2). In both cases root growth as well did not appear to differ although replicated measurements were not made. Mulch depth was reduced to three inches in both materials during the trial. Temperatures one inch into the soil under both mulches were identical and ranged from 85 to 87°F falling to 77 to 78°F after irrigation.

The significant point to be made here, and the reason for this experiment in the first place, was to demonstrate the danger of basing production decisions on single observations or

Table 2. Effect of two pine bark mulches on growth of Misty blueberry plants.

	12/15/94*	06/06/95	11/17/95	10/23/96
Fine	128.2 ns	554.5 ns	927.7 ns	6576.6 ns
Course	111.5	619.5	773.8	3653.2

*Date planted.

ns = Not significant at the .05 level of significance.

Size measurement = width n-s × width e-w × height 3 in inches

on demonstration plots. There is little that can substitute for sound, well designed and conducted experimentation. When good data are not available, which is often the case, and when much is at stake, a trial can be established to determine the advisability for at least the first year. This can often provide valuable information which can eliminate or reduce costly mistakes. Comparison of one farm with another, or even two

fields of the same farm, usually proves to be misleading and potentially expensive.

Literature Cited

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