



## Evaluation of Coir as a Production and Propagation Substrate Amendment

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### Nature of Work:

There is always a need to evaluate substrates for the production of nursery crops. Coir, the coconut husk fiber, could prove useful at low rates to improve water holding capacity of bark mixes without causing water logging of the mixes. The objective is to evaluate low rates of coir in bark mixes on crops that suffer with substrate moisture extremes. These same rates would be evaluated under intermittent mist propagation to determine any effects on propagation.

Coir was incorporated into a bark potting substrate at 0, 5, 10, 15, and 20%. Hydrangea, azalea and loropetalum liners were stepped up into #1 containers. The substrate was amended with Nutricote 18-6-8 at 15#/yd<sup>3</sup> and dolomitic lime at 4#/yd<sup>3</sup>. The #1 container crops were grown an entire season and will be evaluated for top growth, and plant quality. Twenty replicates were used for each treatment with a randomized design within each crop.

Softwood cutting of each crop were stuck into each substrate treatment and placed under intermittent mist. Two flats of 32 cells were stuck with the azalea and loropetalum cuttings. Three flats of 16 cells were stuck with the hydrangea cuttings. After four weeks the hydrangea root systems were evaluated. After eight weeks the azalea and loropetalum roots were evaluated.

### Results and Discussion:

The addition of coir to the hydrangea substrate significantly increased the dry weight over the 0%, 5%, and 15% coir treatments but was not different from the 20% coir treatment. The dry weight more than doubled when comparing the 0% coir at 24.7 grams and the 10% coir at 56.1 grams dry weight. The addition of coir to the loropetalum and azalea substrate did not improve crop dry weight over the 0% coir treatment. There was no improvement when using coir.

The hydrangea cutting root systems showed improvement with the addition of coir to the rooting substrate. The 15% coir produced the largest root systems in four weeks. The 5%, 10% and 20% were not much different from each other but were greater than the 0% coir. The azalea cutting root systems were slightly greater at 15% coir than the 0% coir treatment. The other treatments were not greater than the 0% treatment. The loropetalums had not rooted very well after eight weeks and were discarded.

### Significance to the Industry:

The 10% coir greatly increased the growth of hydrangeas but not the loropetalums or azaleas. Coir appeared to improve the rooting of hydrangeas with the incorporation of 15% into a bark

substrate. Further work is necessary to see if it is effective on other crops and if coir additions are cost effective.