



Evaluation of Wood Waste as a Component of Potting Mix on Root-Rot Sensitive Plants

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The cost of standard growing media is a large component of the total variable cost in nursery production. Because of the ever increasing cost of media, evaluating alternative media sources is very important. Wood waste may hold potential utility as part of a potting mix for nursery crops. If junipers, for example, can be grown to saleable size in wood (sawmill) waste without root problems, it would be a significant cost savings to the industry.

Wood waste is highly variable. In this research study the sample is a conglomerate of undetermined wood chips, bark, and soil particles. Larger particles in the material was separated out by means of a 5/8 inch screen before being incorporated in the soil mix.

The Study

The research study focuses on the growth in various soil mixes of *Juniperus conferta* 'Blue Pacific,' chosen for its ability to tolerate variable soil conditions. Liners were placed in 3 gallon containers on July 14, 1999. Four replications of six plants per treatment were planted in mixes according to the following three treatments:

Treatment	Wood Waste	McCorkle's Potting Mix *
I	0%	100%
II	25%	75%
III	50%	50%

* Bark/sand (9:1) mix with total amendments.

Each plant was assessed and given a visual quality rating at the end of the growing season. Amount of growth was determined by plant dry weight. Each plant's root system was evaluated and rated; any evidence of disease was noted.

The junipers were grown for 1 year and 4 months. Over this period of time they were subjected to stresses from extreme cold to extreme heat. Watering from overhead sprinklers was applied daily to meet plant growth demands.

Root evaluations were done by the authors at the time of harvest. Ratings were given using a 5 point scale: 5 = excellent and 1 = poor. Juniper top growth was evaluated in the same manner.

Table 1. Ratings of Root Development in *Juniperus conferta* 'Blue Pacific'.

Treatment	Mean	Duncan Grouping
I	3.44	a
II	2.84	b
III	1.89	c

Table 1 clearly shows significant effects on root development due to treatments. The 25% and 50% wood waste treatments were both lower in root ratings than the check treatment.

Table 2. Ratings of Top Dry Weight for *Juniperus conferta* 'Blue Pacific'.

Treatment	Mean	Duncan Grouping
I	161.87	a
II	127.28	b
III	124.87	b

Table 2 illustrates significant effects on top dry weight development due to treatments. The 25% and 50% wood waste treatments were both lower in dry weight development than the check treatment. However, there was no significance difference between the 25% and 50% wood waste treatments.

Table 3. Visual Ratings * of Top growth of *Juniperus conferta* 'Blue Pacific'.

Treatment	Mean
I	4.50
II	3.00
III	3.18

Table 3 (not statistically analyzed) illustrates effects on visible top growth development due to treatments. The 25% and 50% wood waste treatments were both lower in visual ratings than the check treatment. However, there was no difference between the 25% and 50% wood waste treatments for visual ratings.

* Ratings of 5 = best, 1 = worst.

Conclusions:

According to this study using wood waste as part of the soil mix reduces growth of *Juniperus conferta* »Blue Pacific,= both root growth and top growth. However, there appears to be little difference between a 50% wood waste mix and a 25% wood waste mix in top growth. The data suggests a potential saving of media cost by using wood waste in the mix without significantly impairing plant growth. Further study is needed to determine the percent wood waste mix that provides both optimum growth and optimum savings in media costs.