



Evaluation of Worm Castings on the Growth of Ornamentals

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Nature of Work: For the past 15 years, higher analysis slow-release fertilizers have become the mainstay of the nursery industry. With the advent of slow-release fertilizers and their increased use in soil mixes, there has been an interest in the use of organic or "natural" fertilizers since most of their nutrients are already in a slow-release form. Reducing cost, while not affecting quality, is a prime objective for the nursery industry. With the increasing cost of chemical fertilizers and possible water contamination from these products, organics may be an alternative fertilizer source. Also, growing in an organic medium with organic fertilizer might give a marketing advantage.

Treatments

- 1 - Standard McCorkle's Mix
- 2 - Standard McCorkle's Mix Plus 10 % Worm Castings
- 3 - Standard McCorkle's Mix Plus 20 % Worm Castings

3 Plant types:

- Hemerocallis* 'Stella d'Oro' Daylilly
- Ilex cornuta* 'Burfordii' Holly
- Lorapetalum chinense* var. *rubrum* 'Sizzlin' Pink'

Table 1. The Effect of Worm Castings on Growth of *Hemerocallis* 'Stella d'Oro' Daylilly

Treatment	Plant Dry Weight	Grouping ¹
McCorkle's Standard mix plus 20% Worm Castings	11.6	a
McCorkle's Standard mix plus 10% Worm Castings	9.5	b
McCorkle's Standard mix	8.6	b

¹ Numbers followed by the same letter within a column are not significantly different from each other based upon Tukey's HSD pairwise comparison of means at P=0.05.

Table 1 shows that the mix with 20% Worm Castings produced significantly more dry weight per plant of 'Stella d'Oro' Daylilly than did the other two mixes. There was no significant difference in the dry

weight of daylilly production between the 10% Worm Casting mix and the standard mix.

Table 2. The Effect of Worm Castings on Growth of *Ilex cornuta* 'Burfordii' Holly

Treatment	Plant Dry Weight	Grouping ¹
McCorkle's Standard mix plus 20% Worm Castings	21.7	a
McCorkle's Standard mix plus 10% Worm Castings	17.6	ab
McCorkle's Standard mix	15.7	b

¹ Numbers followed by the same letter within a column are not significantly different from each other based upon Tukey's HSD pairwise comparison of means at P=0.05.

Table 2 shows that the soil mix with 20% Worm Castings produced significantly more dry weight per plant of 'Burfordii' Holly than did the other two soil mixes. There was no significant difference in the dry weight of holly production between the 20 and 10% Worm Casting mix. Also, there was no significant difference in the dry weight production between the 10% Worm Casting and standard soil mix.

Table 3. The Effect of Worm Castings on Growth of *Lorapetalum chinense* var. *rubrum* 'Sizzlin' Pink'

Treatment	Plant Dry Weight	Grouping ¹
McCorkle's Standard mix plus 20% Worm Castings	48.4	a
McCorkle's Standard mix	38	ab
McCorkle's Standard mix plus 10% Worm Castings	31	b

¹ Numbers followed by the same letter within a column are not significantly different from each other based upon Tukey's HSD pairwise comparison of means at P=0.05.

Table 3 shows that the mix with 20% Worm Castings did not differ significantly in dry weight production, though it did produce more grams dry weight, from the other standard and 10% Worm Casting mixes.

Conclusion: According to the results of this study the McCorkle standard mix with 20% Worm Castings produced more growth in *Hemerocallis* 'Stella d'Oro' Daylilly , *Ilex cornuta* 'Burfordii' Holly,

and *Lorapetalum chinense* var. *rubrum* 'Sizzlin' Pink'.

Significance to the Industry: The Worm Castings act like a slow release fertilizer in the pot culture and my also hold nutrients with their cation exchange capacity characteristics. Also, with the ever increasing environmental concerns the use of natural fertilizers will be more important in marketing plants in the future.