



The Use of Composted Hen Manure as a Fertilizer Amendment

Wayne J. McLaurin
Horticulture Department
University of Georgia

Animal waste may provide a source of slow-release fertilizer due to its organic matter and nutrient content. Chicken litter has been used in numerous tests for growing woody ornamentals. Results have varied from test to test and from plant species to species. This research used composted hen manure (CHM), which is different from chicken litter. CHM does not have the wood products that would be in regular litter. CHM is a more concentrated material than chicken litter from broiler houses.

The Study This research examines the growth rates of daylily *Hemerocallis* 'Stella D'Oro', Nippon daisy *Chrysanthemum nipponicum*, *Ilex cornuta* 'Burfordii', Burford Holly, and *Loropetalum chinense* 'Sizzling Pink'. Composted hen manure (CHM) was added at the rate of 10% and 20% by volume. Plant growth response was evaluated per the varying amount of CHM. Evaluation was done by measuring the top growth dry weight (TDW) of the plant.

Liners were placed in 1 gallon containers on May 22, 2000. Four replications of four plants per treatment were planted in mixes according to the following three treatments:

Treatment	Composted Hen Manure	McCorkle's Potting Mix*
I	0%	100%
II	10%	90%
III	20%	80%

* Bark/sand (6:1) mix with total amendments.

Table 1. Ratings of Top Dry Weight for *Hemerocallis* 'Stella D'Oro'

Treatment	Mean	Duncan Grouping
I	2.23	a
II	2.13	a
III	2.13	a

Table 1 illustrates that there was not significant difference in top growth (TDW) of *Hemerocallis* 'Stella D'Oro' among treatments of CHM.

Table 2. Ratings of Top Dry Weight for Nippon daisy *Chrysanthemum nipponicum*

Treatment	Mean	Duncan Grouping
I	23.58	a
II	20.76	a
III	10.60	b

Table 2 shows that there were no differences in the standard treatment and the 10% CHM treatment for TDW for *Chrysanthemum nipponicum*. However, there was a significant drop in TDW for the 20% CHM treatment.

There were some deaths of plants in this treatment, which could be attributed to the Nippon daisy's sensitivity to the high salts concentration.

Table 3. Ratings of Top Dry Weight for *Ilex cornuta* 'Burfordii', Burford Holly

Treatment	Mean	Duncan Grouping
I	18.42	a
II	15.29	ab
III	12.69	b

Table 3, like Table 2 shows no differences in the standard treatment and the 10% CHM treatment for TDW of *Ilex cornuta* 'Burfordii', Burford Holly. Both of the above treatments were higher in TDW than the 20% CHM treatment. The data also showed no significant difference in TDW of the 10% and 20% CHM treatments.

Table 4. Ratings of Top Dry Weight for *Loropetalum chinense* 'Sizzling Pink'

Treatment	Mean	Duncan Grouping
I	31.09	ab
II	32.83	a
III	26.11	b

Table 3 illustrates that there was no TDW significant difference between the standard soil mixture and the 10% CHM mix. It further shows that there was no significant difference between the standard mix

and the 20% CHM mixture. This is the only plant that produced lower TDW for the standard mix than for the CHM treatment mixes.

Conclusions:

According to the results of this study the 20% composted hen manure (CHM) treatment reduced top dry weight (TDW) of Nippon daisy *Chrysanthemum nipponicum*, *Ilex cornuta* 'Burfordii', Burford Holly, and *Loropetalum chinense* 'Sizzling Pink'

There was no significant difference between the standard mix and the 10% CHM treatment on TDW of Nippon daisy *Chrysanthemum nipponicum*, *Ilex cornuta* 'Burfordii', Burford Holly, and *Loropetalum chinense* 'Sizzling Pink'.

There was no treatment effect from CHM on daylily *Hemerocallis* Stella D'Oro.=

The low TDW suggests that robust growth did not occur in these plants. Observations of leaf burn in some of the plants may have been caused by the high level of soluble salts in the CHM.

From the study results, there appears to be little advantage to using CHM as an amendment. Further study is needed to determine the percent CHM, if any, that provides both optimum growth and optimum fertility in media without detrimental effects for both perennials and ornamentals.