Evaluation of Engineered Wood Products as a Mulch on Potted Ornamentals

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Nature of Work: Engineered wood products (EWP) may hold potential utility as part of a mulch for nursery crops as well as mulch for new landscape plantings.

The ground EWP to be used as a mulch is a mixture of engineered wood products typically found in residential construction in proportion projected to be representative by the APA (The Engineered Wood Products Association). The mixture used for this study consists of 60% oriented strand board, 20% plywood, 5% laminated veneer, 5% southern yellow pine gluelam, and 10% laminated I-joist. The EWP ranged from 1 to 4% by weight of glues and water repellants. The dominant adhesives are phenol formaldehyde, isocyanurate, and resourcinol.

Dimensional lumber (DL) consists of 25% southern yellow pine and 75% white wood (spruce/pine/fir) by volume.

Study Design: This research study proposed to study the total growth of three woody ornamentals as affected by the potential leachates from the EWP and DL used as a mulch.

Growth was evaluated by measuring the dry weight of the tops of the plants above the soil line.

Four treatments were used:

1 - Standard McCorkle's mix plus a mulch of 3" pine straw
2 - Standard McCorkle's mix plus a mulch of 3" engineered wood products (EWP)
3 - Standard McCorkle's mix plus a mulch of 3" 50% EWP plus 50% DL
4 - Standard McCorkle's mix plus a mulch of 2" (EWP) plus 1" pinestraw

Three woody species were used:

Ilex cornuta 'Burfordii' Holly
Lorapetalum chinense var. rubrum 'Sizzlin' Pink'
Rhododendron obtusum Kurume azalea

Liners were planted on May 9, 2002 and harvested on November 4, 2003 for a growing period of 544 days. This extended time period provided for maximum growth to develop and leaching to occur within the pot.

Evaluation: In this study there was no significant difference in top dry weight (TDW) among any of the four treatments imposed on the *Ilex cornuta* 'Burfordii' Holly, *Lorapetalum chinense* var. rubrum 'Sizzlin' Pink', or *Rhododendron obtusum* Kurume azalea.

There was very little weed growth found in any of the pots over this time period.

In addition, the mulch materials darkened over the time period turning from light colored to a medium to dark gray or brown material.

Significance to the Industry: This study suggest the growth of certain woody plants is not adversely affected when EWP and DL are used as mulch. The ready availability of these waste products for mulch enables potentially both diversion of these materials from landfills and a cost savings for nursery and landscape use.

Table 1. Top Dry Weights (TDW) of Three Gallon *Ilex cornuta* 'Burfordii' Holly

Treatments	Mean Dry Weight (grams)	Non-significant Ranges
1. Standard McCorkle's(SMc) mix plus a mulch of 3" pine straw	168.1	a
2. SMc mix plus a mulch of 3" engineered wood products (EWP)	176.2	a
3. SMc mix plus a mulch of 3" 50% EWP plus 50% dimensional lumber	180.5	a
4. SMc mix plus a mulch of 2" (EWP) plus 1" pinestraw	184.3	a

Table 2. Top Dry Weights (TDW) of Three Gallon *Lorapetalum chinense* var. rubrum 'Sizzlin' Pink'

Treatments	Mean Dry Weight (grams)	Non-significant Ranges
1. Standard McCorkle's(SMc) mix plus a mulch of 3" pine straw	184.1	a
2. SMc mix plus a mulch of 3" engineered wood products (EWP)	254.6	a
3. SMc mix plus a mulch of 3" 50% EWP plus 50% dimensional lumber	229.6	a
4. SMc mix plus a mulch of 2" (EWP) plus 1" pinestraw	208.6	a

Table 2. Top Dry Weights (TDW) of Three Gallon *Rhododendron obtusum* Kurume azalea		
Treatments	Mean Dry Weight (grams)	Non-significant Ranges
1. Standard McCorkle's(SMc) mix plus a mulch of 3" pine straw	173.4	a
2. SMc mix plus a mulch of 3" engineered wood products (EWP)	147.0	a
3. SMc mix plus a mulch of 3" 50% EWP plus 50% dimensional lumber	151.2	a
4. SMc mix plus a mulch of 2" (EWP) plus 1" pinestraw	159.9	a