

This system is an improvement over other attempts to use computer-aided assessment of digital images because it provides digital images that do not vary due to external lighting; it uses software that can evaluate radicle length in a Petri dish assay that does not require a slant-board for straight radicle growth; it relies on standard germination techniques used by every seed lab; it uses a clear substrate to replace the opaque blotter to allow digital images to be taken within the Petri dish; and accurate measurements of seedling parts is performed in under 2 minutes per Petri dish.

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Use of Compressed Hardwood Sawdust Pellets as a Weed Control Mechanism for Container Plants

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INTRODUCTION

Weed control in container plants can be a daunting task. Nurseries which only grow one type of plant can easily find suitable chemical herbicides for effective weed control. However, smaller more specialized nurseries, such as Lorax Farms, with literally hundreds of different species must carefully consider the choice of herbicides. Alternative methods do exist and the theory is straight forward. Many of our most annoying weeds depend upon light for adequate seed germination — excluding the light automatically stops seed germination. The late Jim Cross of Environmental Nurseries used pine straw as a mulch for container plants, others in my experience have used cocoa shells a costly but effective mulch material. In both cases the mulches were effective at inhibiting light from reaching the weed seeds. Articles in *American Nurseryman* and the *Journal of Environmental Horticulture* suggests that pelletized paper might make for an effective mulch (Smith, 1998 and Smith et al., 1998). While the literature suggests that it is effective, the pelletized paper, like the cocoa shells, is expensive and it shares a lack of availability with pine straw in the Northeastern part of the U.S.A. Pelletized wood is readily available and seemed to be a reasonable alternative to the previously mentioned materials

METHODS

Fifty hybrid *Hemerocallis* plants with clean soil and no weeds were treated with the volume equivalent of 400 cc of hardwood pellets by spreading the pellets evenly over the soil. Alternatively, an equal number of *Hemerocallis* plants with clean soil were selected as a control with no other additives. The pellets were watered soon after they were applied and expanded approximately three-fold. After 3 months of normal growing conditions outdoors the plants were tabulated for weed control. For the plants treated with the pellet mulch there was no indication of reduced growth or

toxicity due to the mulch. All plants bloomed and grew normally. In this particular test, fertilizer was applied as a liquid feed at 400 ppm monthly.

RESULTS

At the conclusion of the test period the following data was recorded:

- 1) Nine plants were selected at random from a block of 50 of nontreated containers. Result: Total weeds = 47.
- 2) Nine plants were selected at random from a block of 50 treated with hardwood pellets as mulch. Result: Total weeds = 7.

DISCUSSION

As the results show weed control with the pelletized woods was quite good. Treated plants had less than one weed per container, whereas, nontreated plants had an average weed population of greater than five weeds per pot. The treated plants show a weed reduction of close to 85%.

Equally surprising was that the pellets did not remain as pellets but instead break down upon the application of water to form a barrier of sawdust that completely covers the soil surface. Once degraded the sawdust barrier remains intact as a mass and almost completely inhibiting light from reaching the soil surface. It is also interesting to note that few new weeds seem to be able to gain a foothold in the sawdust barrier as it turns a deep brown to almost black up oxidation with the air. This color change may account for the lack of wind blown seeds becoming established.

From this test it appears that the wood pellets are safe and effective at reducing weed populations from becoming established in container plants.

LITERATURE CITED

- Smith, D.R., C.H. Gilliam, J.H. Edwards, J.W. Olive, D.J. Eakes, and J.D. Williams.** 1998. Recycled waste as a non-chemical alternative for weed control in container production. *J. Environ. Hort.* 16:69-75.
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