

# Hydrangea pH and Flower Color Influenced by Lime Sources

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## Nature of Work:

Dolomitic lime sources and application methods were examined on *Hydrangea macrophylla* 'Charm Red'. The flower color changes and potting mix pH were recorded to determine the changes. The pink to red flowering hydrangeas require an elevated pH (above 5.5) to produce their red color.

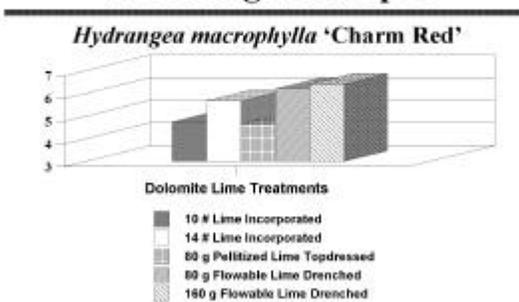
One gallon Charm Red Hydrangeas were potted into three gallons in fall and the pine bark/sand potting mix was amended with 10 # and 14 #/yd<sup>3</sup> of dolomitic lime. Plants overwintered in an unheated poly house were moved to a shade house in spring. The irrigation water has low levels of calcium and the pH is 6.5. All pots were top dressed with 50 grams of Osmocote Pro 23-4-8 (Southern Formula) and one ounce of aluminum sulfate on March 24, 1999. Additional lime treatments were applied on March 26 to the pots amended with 10 # /yd<sup>3</sup> lime. The treatments were (1) 80 grams pelletized dolomitic lime top dressed, (2) 80 grams flowable dolomitic lime drench and (3) 160 grams flowable dolomitic lime drench. The plants were just beginning to show visible flower buds.

On May 14, 1999, all plants were in heavy bloom. The containers were watered and the water draining from the drain holes (leachate) was collected for pH measurement. The leachate pH and the flower colors were recorded and compared.

## Results and Discussion:

The pH's of the 10#/yd<sup>3</sup> and the 80 grams pelletized lime treatments were not statistically different. The 10#/yd<sup>3</sup> treatment had a pH of 4.74 while the 80 grams pelletized lime was 4.66. The flower colors were purple and grape, respectfully. The 14 # /yd<sup>3</sup> fall incorporated treatment had a higher pH (5.7) and pinkish red flowers. The two flowable lime treatments produced even higher pH's (6.2 for the 80 grams and 6.4 for the 160 grams) and strong pinkish red flowers.

### Lime Treatment Effects on Potting Media pH



The 10 # /yd<sup>3</sup> dolomitic lime did not maintain an acceptable high pH from fall until spring to produce the desired red hydrangea flowers. The 14 # /yd<sup>3</sup> treatment, the 80 grams and 160 grams flowable treatments elevated the pH and produced red blooms. The flowable lime treatments worked very quickly to raise the pH and could be used as a spring drench on red flowering cultivars to insure pink to red flowers. These flowable lime rates require a very heavy drench application. It might be more efficient to apply

multiple applications at lower rates.

**Significance to The Industry:**

Flowable lime can rapidly raise the pH of pine bark mixes and produce red flowers on *Hydrangea macrophylla* 'Charm Red'. When used as a spring drench on red hydrangea cultivars, the red flowers in the garden center could improve sales.