



## Rabbit Tracks Occurrence in Crapemyrtle Using Various Substrate Application Rates of Manganese

Matt S. Wilson, Jeff L. Sibley  
Department of Horticulture, Auburn University  
sibleje@auburn.edu

and  
John M. Ruter  
Department of Horticulture, University of Georgia- Tifton

**NATURE OF WORK:** Since the mid-1980's, growers have noticed a perplexing foliar disorder on crapemyrtle cultivars of the *Lagerstroemia indica x fauriei* cross. Major cultivars affected include cvs. Natchez, Miami, Muskogee, and Tuskegee. Characterized by bronze, elliptical spots surrounded by chlorosis along both sides of the mid-vein, this foliar disorder occurs only on the second flush of growth in the spring. As symptoms become more severe, distortion of the leaf margins may occur. Subsequent growth of second flush minimizes symptoms during growing season causing the affected plants to appear to “grow out” of the disorder. Preliminary studies by researchers suggest a nutritional approach to researching the disorder is necessary as expressed by symptoms and foliar nutrient observations. The objective of this study was to study the occurrence of the rabbit tracks foliar disorder using various substrate application rates of supplemental manganese.

In this experiment, trade gallon containers of vegetatively propagated *Lagerstroemia indica x fauriei* ‘Natchez’ were potted up into 3 gallon containers using a 6:1 (volume) pine bark: sand media amended with 16.6 pounds of 18-6-12 Polyon<sup>TM</sup> Fertilizer (Agrium Advanced Technologies), 5 pounds dolomitic lime, 1.5 pounds of Micromax<sup>®</sup> (Scotts Company), and X pounds of MnSO<sub>4</sub> as prescribed by rate per cubic yard. Rates of 0, 1, 2, 3, and 4x manganese were assigned to the five treatments. Prescribed rates of MnSO<sub>4</sub> were based on amount of manganese supplied by 1.5 pounds Micromax<sup>®</sup> per cubic yard and were used as the supplemental manganese source for the 2x, 3x, and 4x rates. Each plant was cut to 18 inches in height and arranged under overhead irrigation on a container pad using complete randomized design. Visual ratings were taken 30 days after second flush emergence using rating scale of 0 to 5 with 0 showing no disorder symptoms and 5 showing the most disorder symptoms.

**RESULTS AND SIGNIFICANCE TO THE INDUSTRY:** Statistical analysis of ratings revealed that plants that receiving 4x the manganese provided by 1.5 pounds Micromax<sup>®</sup> per cubic yard had significantly less occurrence of the foliar disorder than plants of the 0 and 1x rates of manganese (Table 1). Although this does give compelling evidence to affirm manganese's role in the occurrence of this foliar disorder, we cannot conclude that the use of supplemental manganese in the formulation and rates tested were sufficient in preventing or curing rabbit tracks in crapemyrtle, as all treatments exhibited the disorder. Further repetition of this experiment along with further investigations of manganese and other nutrients are necessary to provide a more accurate understanding into the exact cause of the disorder along with providing a viable solution to prevent/ cure this foliar disorder of crapemyrtle. By investigating the cause and providing viable solutions to growers, research of rabbit tracks foliar disorder will

help growers provide merchants and homeowners with quality plants of assured health and appearance, ensuring crapemyrtle's popularity within the landscape for years to come.

**Table 1.** Effects of various substrate applications of manganese on occurrence of rabbit tracks foliar disorder in *Lagerstroemia indica* x *fauriei* 'Natchez'

| <b>Mn Rate</b> | <b>Treatment</b>                                 |  | <b>Mean Rating<sup>z</sup></b> |
|----------------|--|--|--------------------------------|
|                | <b>lbs. Micromax<sup>®</sup> /yd<sup>3</sup></b> | <b>lbs. MnSO<sub>4</sub> /yd<sup>3</sup></b> | <b>Scale 0-5</b>               |
| 0x             | 0  | 0  | 1.8a                           |
| 1x             | 1.5  | 0  | 2.0a                           |
| 2x             | 1.5  | 0.1171                                       | 1.7ab                          |
| 3x             | 1.5  | 0.2342                                       | 1.6ab                          |
| 4x             | 1.5  | 0.3513                                       | 1.0b                           |

<sup>z</sup> Values followed by different letters are significantly different using Least Significant Difference t-Test; P= 0.05