



Drench Applications of Humic Acids Do Not Improve Southern Highbush Blueberry Transplant in Soilless Substrates

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MAIN FINDING

Humic acids increase microbial activity but negatively impact blueberry growth.

BACKGROUND

Humic acids (HA) are biostimulants that elicit plant responses that can help prevent of mitigate plant stress. Blueberry growers have increased interest in HA with 100% of surveyed growers in Florida using HA (Phillips personal comm). Many use soilless substrate to grow transplants which are largely carbon and nitrogen limited which HA could potentially be used as a carbon source to help mitigate (Montagne et al. 2017).

There has been some studies conducted that show HA had a positive response in northern highbush blueberries (Bryla and Vargas 2014). However, not much is known about the appropriate rate and specific affects HA have on blueberries.

Further research could explore HA effects on flowering and berry producing plants.

MATERIALS & METHODS

'Sweet Crisp' blueberry plants were transplanted into rhizoboxes and treated with 3 different percentages of HA to DI water.

- Low: 0.70% HA
- Medium: 1.34% HA
- High: 2.40% HA
- Control: Greenhouse water

Measurements were taken over a 10-week period

- Leaf area
- Leachate pH and EC
- Plant height
- Root, stem, leaf, and total dry weights
- Root convex hull, depth, and width
- Substrate respiration

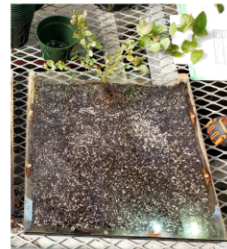


Fig. 1. Rhizobox containing 3:7 perlite to coco coir

Hypothesis: Humic acid application enhances root growth and increases blueberry transplant successes in soilless substrates

RESULTS

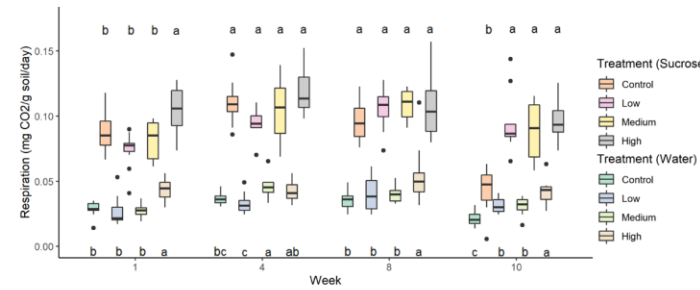


Fig. 2. Substrate respiration using two methods of drenching with water and sucrose. Significant increase in respiration for high treatments.

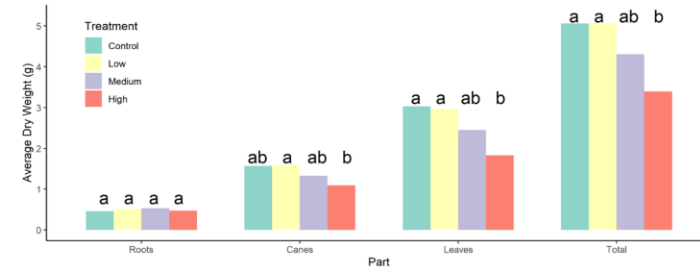


Fig. 3. Effect of humic acid treatments and control on total dry weights. A significant decrease was shown from the high treatment to the control

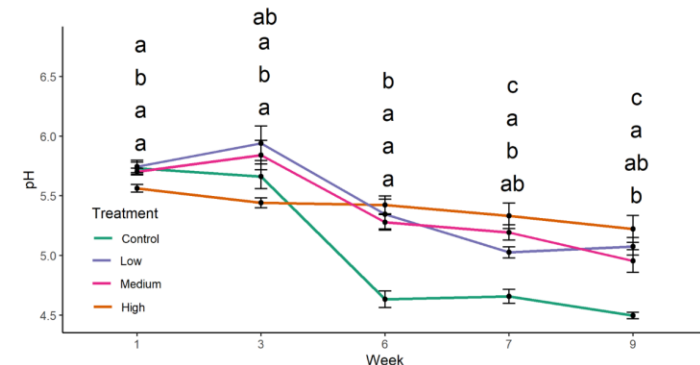


Fig. 4. Effect of humic acid treatments and control on leachate pH. A significant increase was shown from the high treatment to the control