

**Public Abstract**  
**2022 R-13**

**Title: Interaction between pH and form of Nitrogen (N) on blueberry growth and N uptake**

**Name, Mailing and Email Address of Principal Investigator(s):**

**Principal Investigator:**

Anish Malladi  
1121 Miller Plant Sciences,  
Department of Horticulture,  
University of Georgia, Athens, GA 30602  
Email: [malladi@uga.edu](mailto:malladi@uga.edu); Phone: 706-542-0783

**Co-Principal Investigator:**

Miguel Cabrera  
Department of Crop and Soil Sciences,  
University of Georgia, Athens, GA 30602  
Email: [mcabrera@uga.edu](mailto:mcabrera@uga.edu); Phone: 706-542-1242

Blueberry is a major fruit crop grown extensively in the southeastern US, including Georgia. Blueberry plants display a preference for ammonium as a nitrogen source (N-source) over nitrate. Further, blueberry is known to prefer acidic conditions for optimum growth. However, the interaction between the N-source and pH on blueberry growth and N-uptake have not been extensively characterized. In this study, a hydroponics-based experiment was performed in ‘Suziblue’ southern highbush blueberry using three N-sources (ammonium, ammonium+nitrate, and nitrate) and three pH levels (4.0, 5.0 and 6.0). Data from this study indicate that supplying ammonium to ‘Suziblue’ results in substantial acidification of the rhizosphere. This was apparent at all pH levels analyzed, but particularly greater at higher pH. Nitrate supply resulted in alkalization of the rhizosphere. This was apparent only at pH levels less than 6.0. The N-source of the pH levels did not affect chlorophyll content or chlorophyll fluorescence. Further, N-source did not affect plant fresh and dry weights. The pH factor affected total fresh weight, resulting in greater total plant fresh weight at pH 5.0. However, there were no significant effects of pH on total plant dry weight. Further analysis of plant nutrient concentrations and N-uptake is currently in progress. Together, these data are likely to provide insights into the interaction between N-source and pH in blueberry growth and N-acquisition.