Anecdotal observations suggest that impervious surfaces influence water content and temperature in surrounding soil and subsequently may affect plant quality. A study was conducted using GS3 soil moisture sensors (Decagon Devices, Pullman, Washington) in the Sustainable Demonstration Garden at Clemson University to measure the effect of sidewalks on soil moisture and temperature. Three reps of soil sensors were installed at 15, 30, 45 and 60 cm increments from the sidewalk, at a depth of 10 cm into the soil on August 9, 2013, and moved in two month intervals on October 17, 2013 and January 23, 2014, for a total of three trials. Measurements are logged every 30 minutes using E5MS0G data loggers (Decagon Devices). Weather data was organized from the Clemson University Entomology Weather Station. We hypothesize that the conditions near the sidewalk would have lower soil moisture content and temperatures than sensors placed at further. The findings from this study will allow growers to manage landscapes more sustainably by improved irrigation practices, plant selection and placement. Analysis of variance (ANOVA) was used to compare the differences between treatments. Data was analyzed using the SAS software (SAS, Cary, NC).

**Materials and Methods**

- For each of the three trials, three locations were determined in the Sustainable Demonstration Garden (SDG) that were > 45 cm from plants, appeared undisturbed and were adjacent to a sidewalk.
- Mulch was moved to the side and a narrow 10 x 80 cm trench dug.
- GS3 soil moisture sensors (Fig. 1) were inserted into the soil at 15, 30, 45 and 60 cm increments from the sidewalk (Fig. 2).
- The soil was then replaced, uniformly compacted to the surrounding soil surface and remulched (Fig. 3).
- Sensors were installed on August 9, 2013, and moved in two month intervals on October 17, 2013 and January 23, 2014, representing three trials.
- Measurements were logged every 30 minutes using the E5MS0G data logger (Fig. 4) and uploaded to a remote server managed by Decagon Devices.
- Simultaneously precipitation, humidity and air temperature data was downloaded from Clemson University’s Entomology weather station.
- Data was analyzed using the Analysis of Variance (ANOVA) with SAS software.