

Case Study – Urban Forestry Department

This case study has been carried out in collaboration with the Urban Forestry Department, City of Richmond, Virginia.

Richmond performed a street tree planting project on Jefferson Davis Highway around in 2012-2013. On August 2013, on the road median a block south of Maury Street, TreeDiaper 36" was installed and covered with mulch. Adding the mulch on the top of TreeDiaper 36" can prevent vandalism and keep natural looking outside. On the road median a block of north side of Maury Street, standard tree watering bag remained installed on the trees planted there.

Annual natural precipitation in Richmond of Virginia is generally above 40 inches, but seasonal drought occurred on July 2014 (~1" rainfall) and August 2016 (~1" rainfall) and severe winters occurred 2013-2014 (-15°C) and 2014-2015 (-10°C). Since the installation of TreeDiaper36s and by the end of 2016, trees on south side of Maury Street, have not been provided any maintenance services such as watering and de-weeding (grass mowing around the trees were kept as normal). The north side of Maury Street received regular maintenance services.

Results

- Trees with TreeDiaper® Advanced Hydration System survived and thrived, growing green and strong as of June 2016 as shown by Google Street View Images.
- Trees with standard watering bags died (July 2014, and was removed between April-July 2015 as demonstrated by the Google Street View Images.
- The trees that had the TreeDiaper installed were free of maintenance during the testing period.
- Investment on trees (~\$250/tree) from City has been saved by using TreeDiaper advanced hydration system.
- The Soil Moisture under the TreeDiapers was much higher than those under watering bags (Figure 1)
- Soil temperature is maintained at a higher temperature during winter storms (Figure 2) and maintained at a cooler temperature during hot summer days.

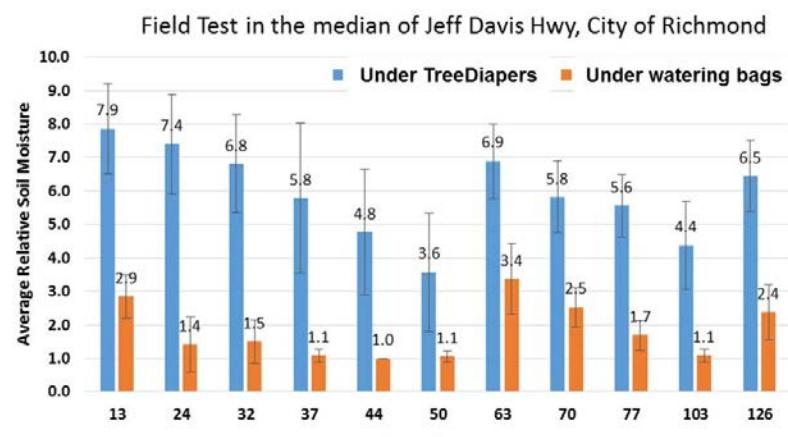


Figure 1. Soil moisture of TreeDiaper® mats compared to watering bags in the road median of Jefferson Davis Hwy, Richmond VA.

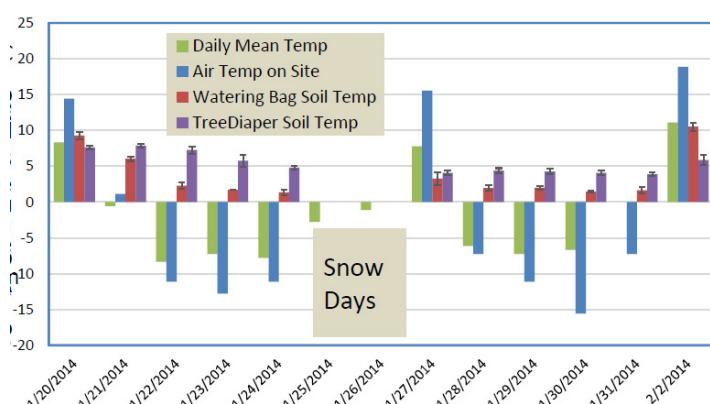


Figure 2. Soil temperatures (3" below soil surface) on Jefferson Davis Highway of City of Richmond in January-February 2014