



# Performance Evaluation of SMS 700 Surfactant for Reduction in Soil Water Repellency (University of Georgia, 2017)

Research Cooperator: Dr. Gerald Henry, University of Georgia, Athens

**Objective:** To evaluate the performance of single and sequential applications of SMS 700 for the reduction of soil water repellency

## RESEARCH DETAILS

### Location:

- University of Georgia, Athens, GA

### Research Site:

- Local Golf Course (Pine Hills) putting green
- USGA spec sand based (water repellent)
- Ultradwarf bermudagrass maintained as putting green

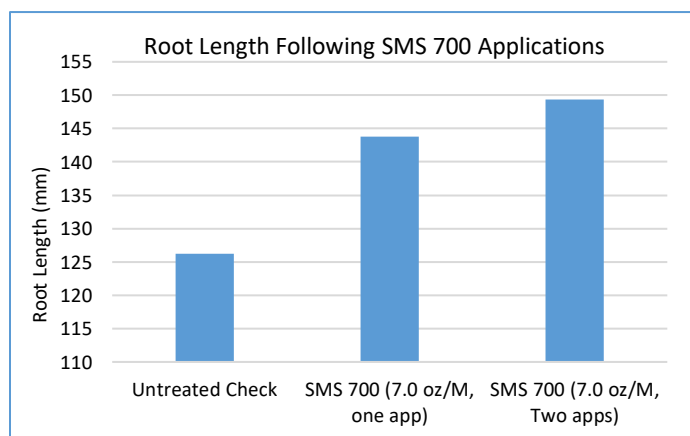
### Treatments:

- SMS 700 applied at 7.0 fl oz/1000 ft<sup>2</sup> (applied once)
- SMS 700 applied at 7.0 fl oz/1000 ft<sup>2</sup> (applied twice, 1 week apart)
- Treatments were watered in with approximately 0.15 inches of irrigation immediately following applications

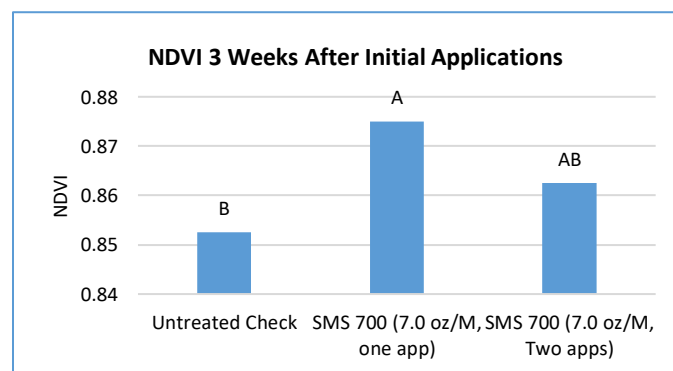
### Timing:

- Initial application was made on June 7<sup>th</sup>
- Second application was made on June 14<sup>th</sup>

## RESULTS



**Root Length:** Turfgrass root evaluations were made at 6 weeks after initial application. SMS 700 treated turfgrass showed an increase in root length by up to 18% at 6 weeks after application.

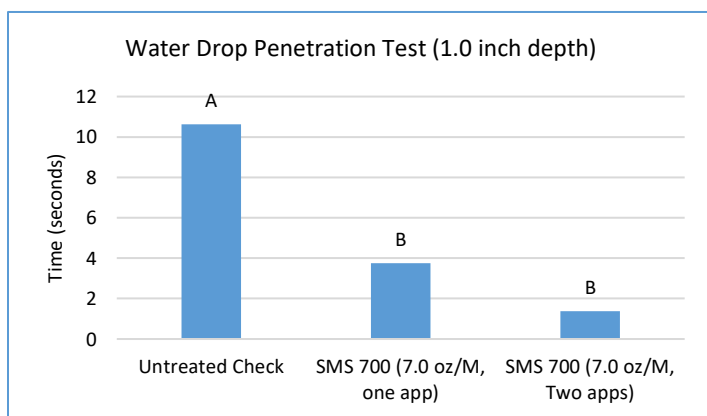


**Normalized Difference Vegetation Index (NDVI):** To determine turfgrass performance, an NDVI evaluation was taken. This data collection technique reduced human error and biases when evaluating treatments. By three weeks after initial application, SMS 700 treated plot had a significantly ( $p \leq 0.05$ ) higher NDVI rating, indicating better turf density and color.

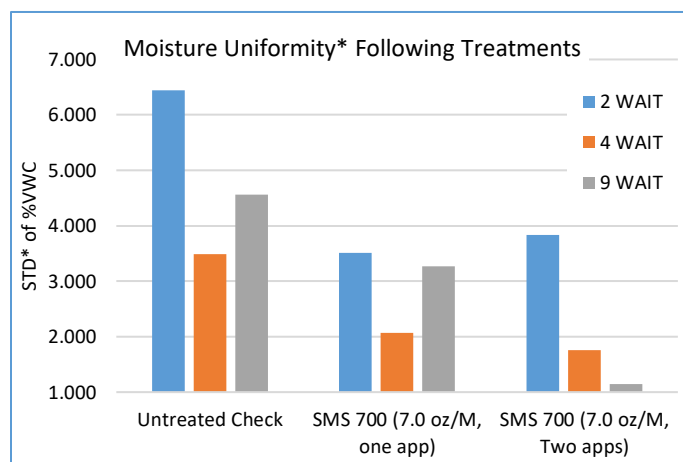


## Performance Evaluation of SMS 700 Surfactant for Reduction in Soil Water Repellency (University of Georgia, 2017)

Research Cooperator: Dr. Gerald Henry, University of Georgia, Athens



**Soil Water Repellency:** Soil water repellency was determined by water drop penetration test. Following SMS 700 applications, water drop penetration test showed a significant reduction in soil water repellency.



\*Lower bars = Better moisture uniformity

**Moisture Uniformity:** Volumetric water content data was collected in multiple locations within each plot and replication during the duration of the study. A standard deviation of the volumetric water content data was calculated to determine how moisture was distributed throughout the plot. A lower number indicated a greater uniformity of moisture. SMS 700 application greatly improved moisture uniformity across an area. Uniform moisture reduces LDS, improves playing conditions, and reduces unnecessary over watering.

**Conclusion:** Applications of SMS 700 effectively control soil water repellency and improve turfgrass quality and performance.

