

Surfactants increase irrigation efficiency

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Surfactants, commonly called wetting agents, are products that increase water infiltration and improve water distribution uniformity in soils. They are especially helpful when applied to sandy soils which can develop an issue called hydrophobicity. Individual sand grains of hydrophobic soils get coated with organic matter and waxes from plant roots that repel water once the soil dries down. Turf grown on sand-based root zones can develop severe localized dry spots (LDS) especially when the stand is irrigated deep and infrequently. Surfactants help promote water infiltration into these hydrophobic areas which prevents and alleviates LDS.

Preventative applications of surfactants should be made to high risk (sandy) soils. Frequent preventative applications prevent development of LDS and increase soil water uniformity. Research shows preventative surfactant applications increase soil water uniformity and sustain high visual turfgrass quality at very low levels of irrigation (30% pET)¹. Preventative applications of surfactant are a great way to increase irrigation precision which reduces water use while maximizing playing conditions. It's an essential part of sound putting green management.

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Figure 1. The plot treated with preventative surfactants (left) had good visual quality and no LDS while the non-treated control plot had poor quality and very hydrophobic soil. Both plots were irrigated to 30% of pET. Courtesy Dr. Doug Soldat

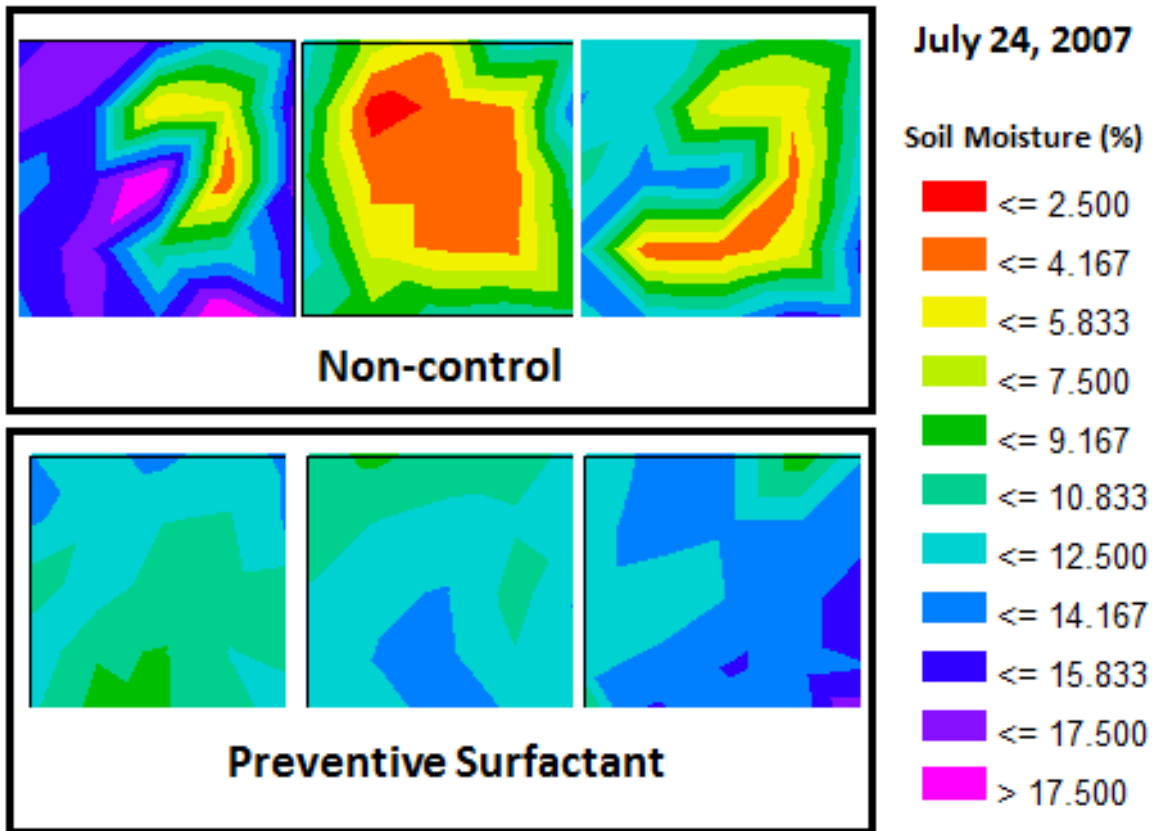


Figure 2. The volumetric water content of the three replicate plots (6x6 ft). The three replicates on the top were not treated with a surfactant while the three lower replicates were treated preventatively. Soil moisture was measured on one foot centers with a TDR probe. All plots were irrigated to 30% of pET daily. Courtesy of Dr. Doug Soldat

Reference:

- 1 Soldat, D., B. Lowery, and W. Kussow. 2010. Wetting agents affect soil moisture uniformity in sand putting greens. *Golf Course Management* 78:p. 76-78, 80, 82.