



Water repellency in highly managed soils and turfgrass - How our understanding has changed in the past 20 years.

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Over the past 20 years, a major shift has occurred in how turfgrass managers deal with soil water repellency. Initially, water management strategies focused solely on remediating localized dry spots, the visible effects of hydrophobic soils. Nearly a decade ago at this conference, a group of turfgrass scientists participated in this session on soil water repellency interacting with a broad group of soil physicists setting in motion research, collaborations and discoveries that have resulted in not only a better understanding of the implications of this phenomenon on soil hydraulic properties and plant productivity, but also, development of new strategies, particularly surfactants, to improve water capture, reduce preferential flow, increase irrigation and water use efficiency, improve performance of soil directed pesticides, reduce leaching of nitrogen, increase mineralization of organically bound nitrogen, and enhance plant tolerance to abiotic stress. It also resulted in research utilizing soil moisture measurement tools, specifically, TDR and capacitance probes, which were introduced to and accepted by soil and crop scientists working in amenity turfgrass. Within the past five years, these technologies and strategies for their effective utilization have transitioned from the research community to become accepted by turfgrass managers globally. It is the objective of this presentation to illustrate key discoveries, implications to improved water and resource utilization, and the resulting acceptance of them as new, more sustainable soil management practices.