

TURF NSW Newsletter – May 2023

UNSW and Soil Scientist Peter McMaugh (Project Advisory Panel for the Turf Industry Drought Resilience Project) Visit Turf Farms in Richmond NSW



Dr. Amr Omar from the University of New South Wales and soil scientist Peter McMaugh (a member of the project advisory panel for the turf industry drought resilience project) visited different turf farms in Richmond, NSW.

They discussed the potential to upscale a novel water efficiency technology using ultrafine bubbles in turf irrigation. It was discussed that water aerated with ultrafine bubbles has high oxygen concentrations (over saturation levels), which is highly advantageous for turf growth. This was previously demonstrated by using ultrafine oxygen bubbles in golf courses (in Manly and Avondale golf courses), where a clear improvement in root health, which accelerated the uptake of nutrients by the plant, was shown. Recent advances in ultrafine bubble technology from Nanobubble Technologies (featured in last month's Newsletter) have increased yield and decreased chemical demands to produce more stable bubbles with higher concentrations.

Links to those case studies can be found here: [Link 1](#) and [Link 2](#).

The project advisory panel discussed the technical feasibility of delivering the ultra-fine bubbles (UFB) at scale in a standard industry irrigation system with Neal Tweedie (the owner of Hawkesbury Valley Irrigation). This work will focus on the hydraulic design issues associated with integrating UFB equipment into centre pivot and rain gun sprinklers irrigation systems. The results from this work will confirm the desirable properties of UFB (bubble size and concentration) that can be delivered at scale, particularly allowing for pressure changes along the irrigation mains through to the sprinkler head and how spray drift and other ambient variables may impact the delivery of the UFB to the turf. This work will be delivered by A/Prof. Stefan Felder and senior Engineer Mr. Brett Miller from the UNSW Water Research Laboratory at Manly Vale NSW.

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