

Hygroscopic & humectant technology use for water management challenges

Editor's note: This article was written by Sarah Irwin, a marketing representative for Ecologel Solutions, LLC.



WITH RISING COSTS, watering restrictions and recurrent drought, maintaining healthy turf with less water is a perpetually increasing challenge for many sports turf managers. Several new technologies have been developed to provide solutions for conservation without sacrificing quality. One such technology, Hydretein, is a liquid application designed to reduce overall watering requirements, and protect plants from drought stress in between periods of rainfall or irrigation.

Once applied, Hydretein forms a thin film around plant root hairs. This film, consisting of hygroscopic and humectant compounds, attracts individual water molecules from the surrounding environment and condenses those molecules into plant usable water droplets. By making use of water vapor that would otherwise be lost to evaporation, Hydretein enables plants to thrive with up to a 50% reduction in watering frequency.

When plants do not receive sufficient moisture from rainfall or irrigation, the ensuing drought stress can do more damage than all other environmental factors combined. By supplying roots with microscopic droplets in between periods of rainfall or irrigation, Hydretein can help minimize or even eliminate the effects of drought stress.

"After applying this product to an initial 3 acres of golf course turf during the summer's severe drought and heat, I saw positive results in less than a week. The previously drought stressed, brown grass at the sites of my initial application was green and vigorous within one week of application of Hydretein. Subsequently, I proceeded to apply Hydretein to 100 acres of golf course turf. Within the first month of application, I noticed not only healthier turf under severe drought conditions," said Rich Cope, golf course superintendent for the University of Texas Golf Club, "but my irrigation demand was decreased by 33% without sacrificing turf quality. Even though I irrigate with effluent water at no cost for the water, this irri-

gation reduction is significant because my pumping costs, including electricity and component wear, were reduced by 1/3 and my turf quality was significantly improved under the worst climatic conditions I have experience in 20 years of golf course management."

Formulated from food grade materials, and containing no hazardous chemicals, Hydretein is environmentally friendly and safe to use around children and pets. Since Hydretein does not have the ability to store significant quantities of water, it will not encourage fungus or disease development. Although best results will be obtained by using Hydretein proactively and as part of a regular maintenance program, the product can be used for seasonal applications and for the individual treatment of localized dry spots.

Hydretein should not be mistaken for a surfactant or superabsorbent polymer. The Hydretein technology is unique in its ability to convert subsurface humidity into plant usable water droplets. As a liquid, Hydretein can be applied at any point in a plant's life. In addition to reducing overall watering requirements and helping to minimize the effects of drought stress, Hydretein is also beneficial for seeding and sod establishment. Applied immediately after seeding, Hydretein increases germination rates by keeping seeds from drying out. Furthermore, Hydretein aids in establishment and root growth by keeping more water available for the developing roots of seedlings, sprigs and sod. Hydretein is just as beneficial for the transplant, establishment, and maintenance of bedding plants, shrubs, and trees.

The Hydretein technology is sold by John Deere Landscapes under the name of LESCO Moisture Manager®; by BioPro Technologies, LLC as H3O Plus; and by Ecologel Solutions, LLC as Hydretein ES, Hydretein ES Plus and Hydretein ES Plus II. ■

