

Irrigating With Effluent And Brackish Water

Hammock Bay Golf and Country Club
Rodney Whisman, superintendent

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The Problem

Drinking water is in great demand. Discovering alternative water sources for irrigation has been an important focus in Florida for many years. For several decades many Florida golf facilities have been using treated wastewater, or effluent water, for irrigation. In fact, water-treatment facilities initially supplied golf courses with effluent water, which otherwise was discharged into local streams, free of charge. However, there is such great demand for recycled water in Naples, Fla. that the municipality now charges \$1.79 per 1,000 gallons of recycled water. With the cost of water rising, golf courses are motivated to consider other sources of irrigation water including brackish water, which has high salt levels that bermudagrass does not tolerate.

The Solution

Hammock Bay renovated their golf course in 2002 and regrassed to seashore paspalum, a turfgrass species developed with funding from the USGA that can withstand irrigation water with higher salt levels than hybrid bermudagrass. Converting to seashore paspalum granted the opportunity to supplement the recycled water being used to irrigate the golf course with brackish water. To facilitate the use of brackish water, a sophisticated irrigation system was installed that can apply either treated wastewater or brackish water from deep wells. The brackish water, which is unsuitable for other agricultural uses, is 9,000 ppm total dissolved solids, nearly three times the tolerable limit for bermudagrass.

The Results

Seashore paspalum is a visually appealing grass that provides good playing conditions for the golfers at Hammock Bay. Furthermore, Rodney Whisman, golf course superintendent, estimates that supplementing recycled water with brackish water has resulted in annual savings of around \$18,000.

Whisman feels that regrassing was a success, allowing the use of alternative water supplies which benefits the environment and surrounding community. Whisman also has found that

the high-salt brackish water helps reduce turfgrass growth, which helps reduce some of the mowing and trimming of the golf course.

There are some challenges associated with using brackish water, like having to use stainless steel irrigation heads and occasionally flushing salts from the soil. However, Whisman feels that the benefits of converting to seashore paspalum and using alternative water sources are well worth the challenges.



Figure 1. Control switch that allows the use of salt water, effluent water or a blended combination of both water sources.



Figure 2. Hammock Bay's irrigation system was designed with two sets of pumps to use both treated wastewater and salty brackish water.