Impact of Aquatrols Revolution® on Turf Quality and Soil Moisture
With Various Irrigation Frequencies
(University of Arkansa, Fayetteville, 2004&2005)

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Objective: To determine the effects of Aquatrols Revolution application and varied irrigation thresholds on the quality of sand-based putting green turf.

Study Details

Location:
University of Arkansas Research and Extension Center, Fayetteville, AR

Site Conditions:
- Experimental green built to USGA specs
- Creeping bentgrass (Agrostis palustris Huds.)
- Acclima moisture sensors installed at 10 cm

Treatments:
- Irrigation Frequency triggered by soil moisture level – high (12%), moderately high (10%), low (8%), very low (6%)
- Aquatrols Revolution – 6 oz/1000 ft² in 2 gal water (190 mL/100 m² in 8 L water) applied monthly to subplots of all plots
- Untreated Controls were represented by the other subplot of each plot

Test period:
- June through October 2004
- April through October 2005

Evaluations:
- Surface moisture distribution
- Weekly ratings of turf quality
- Weekly rating of localized dry spot formation

Results

Moisture Distribution
- Aquatrols Revolution decreased soil moisture levels for turf receiving the high irrigation frequency, and increased soil moisture levels for turf receiving infrequent irrigation on several dates in both years. (Figure 1)
**Turf Quality**

- Aquatrols Revolution resulted in significantly better turf quality and less LDS formation than non-treated areas in both years of the test. (Figures 2 and 3.)
- In 2005, the moderately high irrigation frequency treated with Revolution had better turf quality than the high frequency irrigation treatments due to firmer surface conditions.

![Figure 2 – Visual Quality (2005)](image)

![Figure 3 - Localized Dry Spot Formation (2005)](image)

**Conclusion**

Aquatrols Revolution allows turf quality to be maintained at acceptable levels - and significantly higher levels than controls – under significantly reduced irrigation frequency and quantity. In addition Revolution can regulate moisture levels and uniformity. Surface moisture levels were reduced when frequent irrigation was applied and increased when irrigation was restricted.