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Research Summary

Impact of Aquatrols Revolution® on Turf Quality and Soil Moisture With Various Irrigation Frequencies

(University of Arkansa, Fayetteville, 2004&2005)

Research Cooperators: Dr. Douglas Karcher, *et al.*

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 ft^2 in 2 gal water (190 mL/100 m^2 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

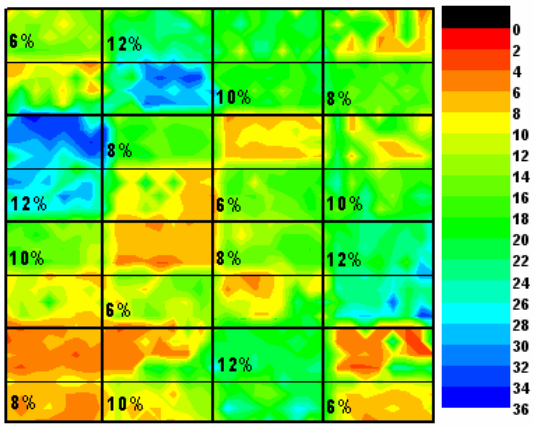

Figure 1 – Surface Moisture Distribution (VWC) Revolution subplots noted by the moisture level trigger for irrigation. (2005)

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)

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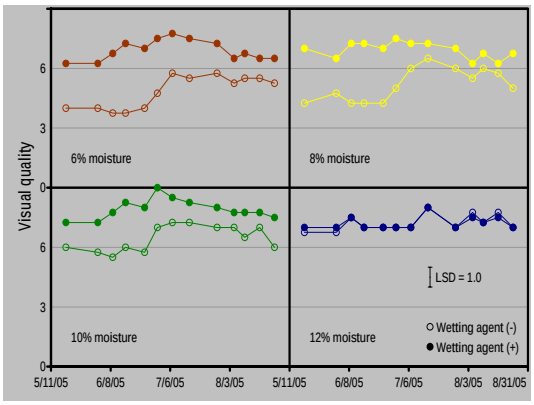
Turf Quality

- 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)



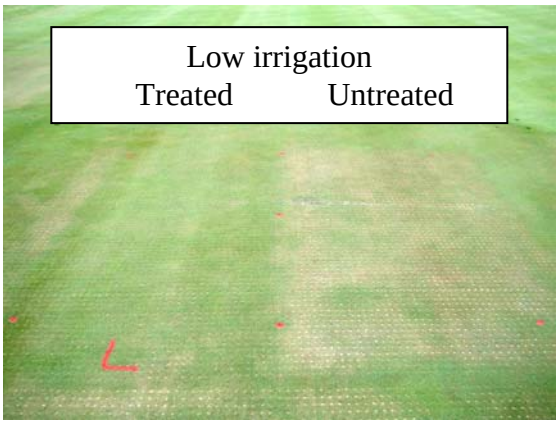
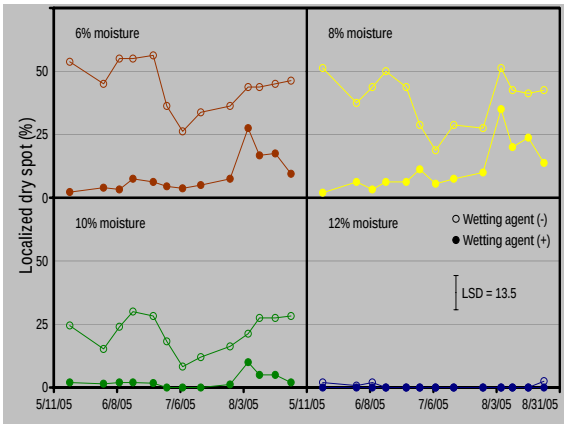


Figure 3 - Localized Dry Spot Formation **(2005)**



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.