

Evaluation of Aquatrols ACA1820/Revolution® on Soil Water Content

(Alterra – University of Wageningen, The Netherlands, 2003)

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Objective: To evaluate the effect of Aquatrols ACA 1820/Revolution on water content and distribution and turf quality in soils prone to water repellency.

Study Details

Location:

De Pan Golf Club, Utrecht, NL

Site Conditions:

- 100 year old golf course
- Inland dune sand prone to water repellency
- Mixed grasses on side of fairway and fairway - unirrigated

Treatments:

- Aquatrols ACA 1820/Revolution – 6 oz/1000 ft² in 2 gal water (190 mL/100 m² in 8 L water) applied monthly – plots and fairway
- Aquatrols Primer - 6 oz/1000 ft² in 2 gal water (190 mL/100 m² in 8 L water) applied monthly – plots only
- Untreated Control

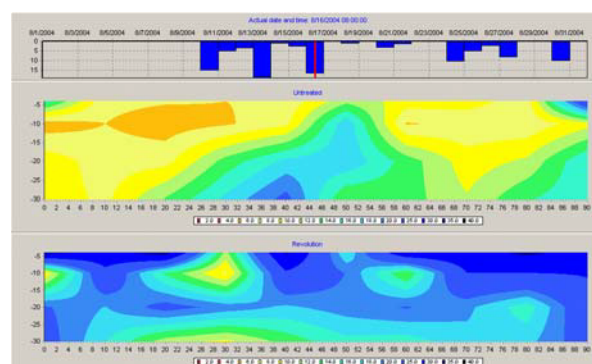
Test period:

- May 2003 to October 2005

Evaluations:

- Volumetric water content at depth
- Volumetric water content in top 2 in/5 cm
- Turfgrass appearance – color and density
- Water repellency - WDPT

Figure 1 - Volumetric Water Content at Depth



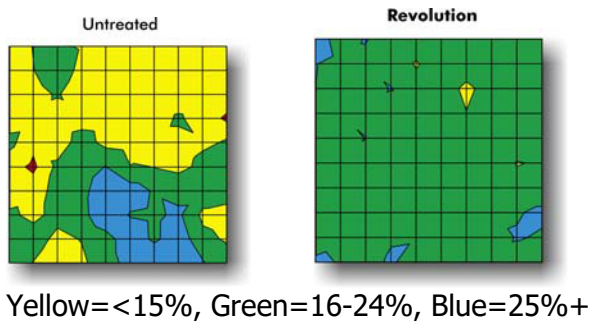
Results

Water Content at Depth – Aquatrols 1820/Revolution caused more applied water to enter the soil and resulted in more desirable and consistent volumetric water contents to a depth of 12 in. (30 cm) throughout the study. (Figure 1)

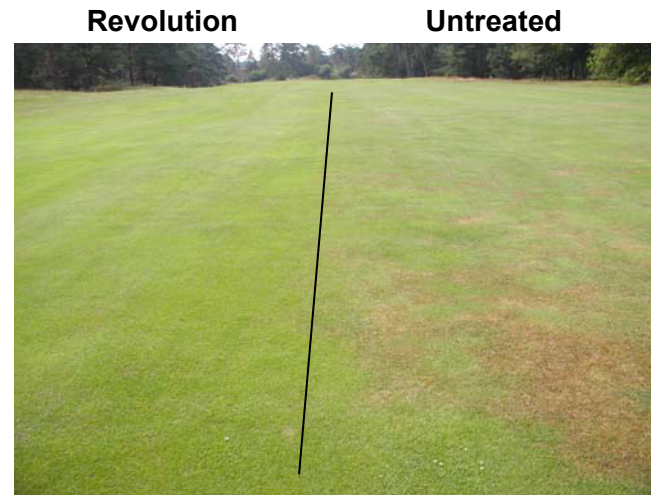
Water Content in Top 2 in/5 cm – Aquatrols 1820/Revolution resulted in more consistent water contents across the test plots as well as at depths. (Figure 2)

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Figure 2 – Water content in top 2 in (5 cm)



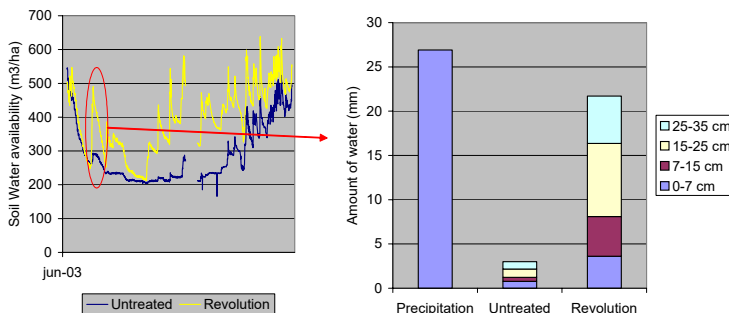
Turfgrass Appearance - The turf managed with Aquatrols 1820/Revolution was more dense and was of significantly higher quality.



Soil Water Repellency - plots exhibited lower soil water repellency from July through October in both years of the study.

Water Distribution at Depth – Aquatrols 1820/Revolution resulted in more even distribution of water throughout the top 12 in (30 cm) of the soil profile. (Figure 3)

Figure 3 – Water distribution at depth



Conclusion

Aquatrols 1820/Revolution reduced water repellency, allowed more water to enter the soil and resulted in remarkably more consistent distribution of that moisture at depth and across plots. This resulted in significantly improved turf quality as well.