



User's Guide

Thousands of golf course superintendents now use Revolution to achieve exceptionally uniform rootzone moisture levels within ranges that allow for drier, firmer putting surfaces while reducing moisture stress on their turfgrass. These superintendents have also helped us gain valuable additional experience about how to get the most out of this unique surfactant chemistry. This User's Guide is a compilation of what has been learned so you can experience all of the water management and plant health benefits of a Revolution program.

How to Use Revolution

Initial Application

Revolution must be applied at least one month prior to the anticipated onset of stress conditions in your area.

Ongoing Monthly Program

Revolution must be used monthly as part of an ongoing management program beginning prior to and continuing through stress periods. If this does not match your agronomic philosophy, inclination or budget, Revolution may not be the product for your turf management program. Ask your Aquatrols representative about other product and program options.

Watering In

- Revolution is very safe to turfgrass, and does not need to be watered in immediately after application. However, since Revolution's area of activity includes both the thatch/mat layer and the soil, it must be watered in sufficiently to deliver the Revolution molecules to a depth of at least four inches.
- This requires about one third of an inch of water on high sand rootzones or other soils with a sand top-dressing layer of four inches or more. On non-sand soils or "push up" greens with less than a four inch sand topdressing layer, apply up to one half inch of water.
- Revolution should be watered in thoroughly the evening following application.

Application Rates & Frequencies

Monthly Application

Apply Revolution at 6 oz/1000 ft² (190 mL/100 m²).

Biweekly Application

Following an initial application of 6 oz/1000 ft² (190 mL/100 m²), Revolution can be applied bi-weekly at 3 oz/1000 ft² (95 mL/100 m²).

Tank Mixing Revolution

- Revolution has been shown to be compatible with many soil targeted products. It can help place soil targeted chemicals and fertilizers more uniformly in the soil and can maximize the effectiveness of these materials.
- A report of tank mix compatibility and turfgrass safety for many commonly used turfgrass products is available in the Revolution research section at www.aquatrols.com.

As always, it is recommended that a jar test be done to confirm the chemical compatibility of the tank mix, and a strip test be done to confirm turfgrass safety of the tank mix under your conditions.

- **Revolution should not be tank mixed with iprodione or propiconazole or any product that specifies not to mix with wetting agents or non-ionic surfactants.**

Irrigation Under a Revolution Program

Clearly, growing quality turfgrass requires consistent access to water and nutrients in the rootzone. Irrigation strategies for putting greens that use light, daily irrigation aim to achieve this without creating surface wetness. Unfortunately various factors from inconsistent irrigation coverage to non-uniform soil wetting can actually cause this strategy to result in some areas of the rootzone becoming excessively dry while other areas can still become too wet. Turf quality and consistency suffer as a result.

Most superintendents who have made Revolution part of their turfgrass management program have found they can reduce irrigation frequency and increase run times. Because Revolution allows excess moisture to drain more quickly and completely through the rootzone, superintendents are able to produce drier, firmer putting surfaces while reducing moisture stress on their turfgrass. *This is one of the most unique and beneficial features about Revolution compared to other surfactant chemistries.*

Irrigation tips when using Revolution

- To achieve the best turfgrass quality and playability on putting greens under a Revolution program, apply enough water with each irrigation to bring the active rootzone (depth of soil where roots are present) up to field capacity and then let it dry down until the turfgrass just begins to show moisture stress before irrigating again. Actual irrigation frequencies will change throughout the year, depending on factors such as the water holding capacity of the soil, changing depth of turfgrass rooting, and weather conditions which influence ET rates and turfgrass water demand.
- The reduced irrigation frequencies and increased irrigation run times possible under a Revolution program also helps to even out soil moisture inconsistencies that often develop when short, frequent irrigation runs times or hand watering is used exclusively.
- Deep irrigations or “flushings” periodically during dry or drought conditions will also help leach salts which accumulate near the surface and are an additional stress factor during the heat of summer.
- It's a good idea to monitor soil moisture levels and uniformity. This can be done quickly and accurately with a hand held TDR probe like the Dynamax TH2O. For more information on this useful tool visit: www.dynamax.com and enter the Irrigation Control & Soil Moisture Sensors area.

A Word About Soil Physical Conditions

Putting greens commonly develop soil physical problems, such as excessive levels of organic matter near the surface which plug pore spaces, compaction, or severe soil layering which *physically* impedes water movement. If not resolved, soil physical problems will diminish the effectiveness of many turfgrass management practices and turfgrass quality will suffer. No surfactant can overcome fundamental soil physical problems.

It is best to periodically have a comprehensive soil physical analysis conducted by an accredited physical soil testing laboratory. To find accredited labs which are able to identify soil physical conditions and provide recommendations on how to address soil physical problems, visit the “Course Construction and Renovation” section at www.usga.org/turf.

