

The Many Faces of Surfactants

Superintendents are finding new and creative ways to take advantage of the benefits wetting agents and penetrants offer

BY DAVID KRONMAN



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John Zimmers, superintendent of Oakmont Country Club, uses wetting agents as a broad-spectrum solution.

The days of using surfactants only as a spot treatment for localized dry spot (LDS) is a thing of the past. Today's superintendents are finding new and creative ways to take advantage of the benefits surfactants can offer. Products such as wetting agents and penetrants are not only alleviating turf stress during periods of drought, but are also helping solve problems of everyday course maintenance.

More and more, surfactants are becoming known as a superintendent's modern-day "Swiss Army Knife" for their ability to fix so many different problems. This article will discuss a few of the creative ways surfactants are currently being used on golf courses.

Through fertigation

Many superintendents have learned of the benefit of using a steady program of surfactants through their courses' fertigation systems. Most recent studies show that courses lose between 40 percent to 60 percent of their water

application through evaporation and run-off. By applying both wetting agents and penetrants uniformly, superintendents can not only reduce surface tension consistently, but also reduce the amount of water lost during application. By improving the overall quality of the soil, courses will see LDS disappear and the effectiveness of applications improve.

"When the weather calls for it, I use wetting agents on a broad spectrum [of problems], including greens, tees and fairways," explains John Zimmers, superintendent of Oakmont (Pa.) Country Club. "I will also inject the wetting agent directly into my system at the pump station."

With sophisticated irrigation systems, which are located on many of today's courses, combined with a variety of injection systems, both spot treatment and blanket coverage with surfactants has become a much more manageable task.

Not just during dry weather

Whether your course is too wet or too dry, a surfactant may be the answer to the problem. There is a misconception that surfactants are only useful in dry conditions.

This, however, does not seem to be the case. "During periods of wet weather, a penetrant can help to move water through the soil," Zimmers says.

Again, penetrants maximize infiltration by lowering the surface tension of water. With improved water penetration, disease can be minimized because water is getting through the surface and soil profile.

Courses also become much more playable during times of wet weather. Several courses note that the ability to allow golf cars out sooner after heavy rains created greater rev-

Problems

Got turf stress during periods of drought? Are you having problems with the effectiveness of your spray applications?

Solution

Surfactants, including wetting agents and penetrants, are becoming more popular to help correct a variety of problems on golf courses.

enues than the costs associated with applying penetrants to saturated areas.

Wetting agents, on the other hand, are a great tool during drought conditions. Wetting agents will increase the effectiveness of irrigation by getting water into the root zone and holding it there before it evaporates or runs off. The wetting agent will also help to distribute the water evenly to the root zone.

Todd Raisch, certified superintendent of Ridgewood (N.J.) Country Club, is now using wetting agents as part of his regular greens, tees and fairway programs during the hot and dry summer months. Raisch has found that by using wetting agents in conjunction with regular irrigation, he gets at least a couple extra days out of each watering. In addition, preliminary research at the University of Georgia has shown substantial water savings when wetting agents are applied to water-repellent soils.

Penetrants as an adjuvant

Mixing a penetrant with insecticides, fungicides, herbicides and liquid fertilizers can optimize the effectiveness of spray applications because of a surfactant's ability to greatly lower the surface tension of water. The applications become more efficient because surfactants allow the products to spread uniformly and penetrate the soil profile.

"I add a penetrant to every spray application that goes out on the golf course," says Gregory Nicoll, certified superintendent of Maplewood (N.J.) Country Club. "For example, mixing a penetrant with my insecticide will help it get through the thatch to the target organism."

Superintendents are finding a cost savings by making better use of their chemicals and liquid fertilizers in conjunction with penetrants because they are relatively inexpensive.

Maintained rough program

As drought conditions persist in much of the country for the past decade, superintendents are finding turf in the rough having a more difficult time competing with trees for valuable water. By applying a wetting agent along the tree line, moisture is better held in the turf's root zone and allows the rough a greater chance of staying healthy.

"I have definitely found success in applying wetting agents to my rough areas,

especially in the tree lines and high-traffic areas," Zimmers says. "After an application, you are able to see a difference in the quality of turf."

During times of extreme drought, the possibility of losing trees also exists. To help solve this problem and increase the chances of tree survival, some superintendents, such as Nicoll, have begun injecting a wetting agent directly into the tree's root zone. This allows for greater availability of water for the trees.

Bunker management

Bunker faces begin to get topdressed and dry out quickly because so much sand often ends up outside bunkers. Eventually, the sand becomes part of the soil and forms hydrophobic areas that won't hold moisture at all.

Wetting agents help maintain moisture in the bunker faces by allowing water to reach the root zone through the sand and holding it there for the plant.

Another use of surfactants that is becoming more popular in bunker management is spraying the sand with a wetting agent. A wetting agent will help firm up the bunker and make conditions more playable.

Aeration

When holes are opened up on the greens and fairways, the soil tends to dry out much faster because of the increased exposure to the air. When the topdressing that fills these holes becomes lined with surfactant, more moisture becomes available to the plant, and the turf doesn't dry out as fast. The water will stay near the root zone rather than draining down through the holes in the surface.

Additional uses

Truly, the number of uses for surfactants appears to be limited only by the superintendent's creativity with the products available.

"I spray wetting agents on all my sand, dust and gravel cart paths and on the surface outside of our maintenance area," Nicoll says. "With the paths able to stay more moist, dust is reduced and members and guests are able to enjoy a more pleasant experience on the golf course." ■

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