



Knock out multiple weeds in a single round.

Only Solitare® takes on crabgrass, sedges and broadleaf weeds with no tank mixing required.

Fighting more than one weed problem used to require more than one product. Now there's new Solitare® herbicide from FMC Professional Solutions, the only all-in-one postemergence solution designed to help you control multiple weeds in a single, fast-acting application.

Wherever several weeds like crabgrass, sedges and broadleaf weeds come together, you'll experience the Solitare "sweet spot." That's because Solitare controls or suppresses over 60 weeds without the hassle and cost of tank mixing. Dual-action Solitare herbicide features a patent-pending combination of active ingredients that combats weeds from the foliage down and the root up. Solitare also impacts viability of seeds and tubers within the soil, helping to decrease weed populations this season and next. When multiple weeds gang up on you, there's only one solution you want in your corner: Solitare herbicide.

For more information on Solitare and other solutions from FMC, visit www.fmcprosolutions.com or contact your FMC Sales Representative or local FMC Distributor.

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HERBICIDE

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to generate acidity, it can generate anaerobic soil and lower soil redox potential. Research was conducted to help illustrate this point.

When elemental sulfur was added to a water-logged turfgrass soil at a rate of 1.5 pounds or 3 pounds per 1,000 square feet, it depressed both pH and redox potential significantly. Research was also conducted to illustrate how keeping redox potential elevated can prevent formation of sulfide. Data says applying elemental sulfur significantly reduced redox potential and resulted in formation of high levels of sulfide. Applying nitrate with the sulfur kept redox potential poised at a point high enough to prevent the release of sulfide. This occurred because the presence of nitrate maintains an Eh of plus 0.43 V, higher than required for sulfate reduction to occur. But when the nitrate is depleted, redox potential falls.

Organic matter can also lower redox potential as it stimulates microbial respiration by acting as a food source for microbes in the soil. The respiratory activities of the microbes consume O₂ faster than it can be replenished. As another example concerning organic matter, natural and organic sources of N (sewage sludge) must nitrify to release the nutrient N. This involves reacting with O₂. This process, which scavenges O₂, is known as nitrification.

Keeping high redox potential

There are several ways to keep soils from becoming anaerobic. This requires an integrated approach involving frequent aeration and other cultural practices. Make sure to vary the nature of the aeration tines and depths of penetration. Failure to do so can generate what is called a "plow pan," which restricts diffusion of oxygen into the soil, generating low redox potential. The integrated approach also requires that topdressing events utilize appropriately sized materials, and that frequency is suitable to prevent development of layers within the soil profile.

Small-diameter sands may work into putting greens very well but can also create physical problems, such as perched water tables if the particle size does not match base materials.

Perched water tables can be great generators of low redox. Do what is possible to encourage drainage, including mitigating both surface and subsurface drainage problems.

Inadequate drainage is a main cause of low redox, as water impedes diffusion of O₂ into the soil by a factor of 10,000 times compared to a relatively dry soil. Surface soils need a minimum of 1 to 2 percent slope to drain effectively, and all putting greens should drain in at least three directions. Subsurface drainage needs a minimum of 0.5 to 1 percent to drain, and be sure to daylight drainage out of high traffic/play areas so as to avoid ponding.

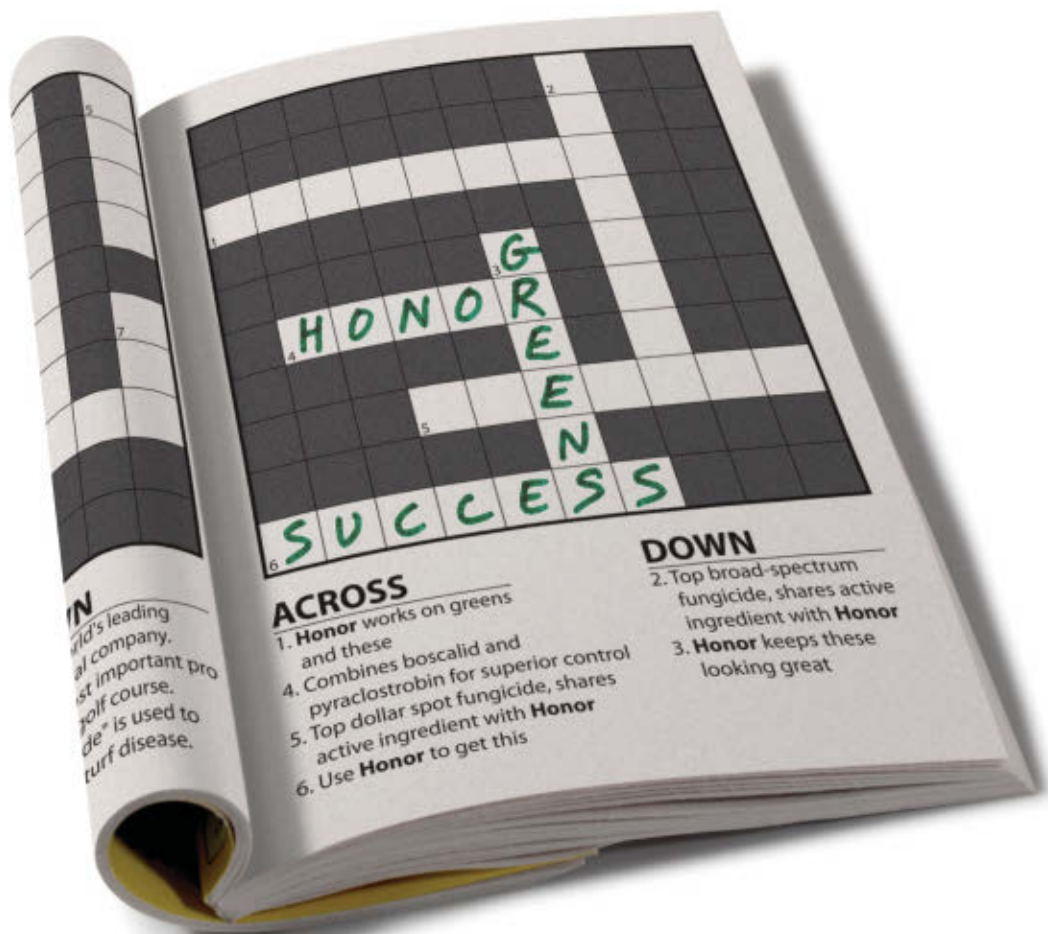
If low redox conditions do begin to develop as indicated by the appearance of black layer, fertilize with nitrate-based sources of N. The nitrate molecule is such that adding it to soil effectively adds oxygen, which poises redox at a point high enough to temporarily prevent most low-redox related problems. In addition, don't apply natural organic sources of N or elemental sulfur. Both of these materials scavenge O₂ creating a low redox potential, hence unfavorable growth conditions. Fertilizing with nitrate and withholding applications of elemental sulfur are best management practices for preventing low redox and associated black layer.

Understanding the chemistry and math behind redox potential is not important for turf managers. But what is important is having a thorough understanding of the implications of having a low redox potential and how to avoid it.

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Wooden's Wisdom

When John Wooden died in June, America lost arguably its greatest coach

and undoubtedly one of its finest individuals. Because of my remote connection to the man — my dad, Lynn, played on three NCAA title teams for Wooden at UCLA — I received condolences of all sorts. And while it's nice that people were saddened by his passing, it's far more productive to celebrate the values he represented — because Coach Wooden was a man of principle, modesty and, in later years, occasional self-deprecation. He was “so square,” the great Los Angeles Times columnist Jim Murray once wrote, “he was divisible by four.”

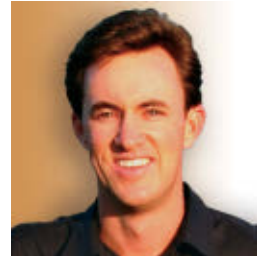
Though Wooden will be remembered by most as a grandfatherly, silver-haired man, he was an extraordinary athlete in his younger days. Wooden was the first to be inducted into the Basketball Hall of Fame as both a player and a coach. During his semipro basketball-playing days in the 1930s, he made 134 consecutive free throws. But it was his golf accomplishment that still astounds.

Playing Erskine Park Golf Course in South Bend, Ind., in the late 1930s, Wooden made a hole-in-one and a double eagle in the same round. Golf Digest researched and determined that Wooden was one of only four people to have pulled off the stunning feat, calculating the odds of repeating Wooden's incredible combo at 67 million to 1.

“The par 3 was on the front nine, about 175 yards with a 5-iron,” Wooden recently told Golf Digest's

HE WAS A SPORTS FAN, A REGULAR GUY,
BUT MOSTLY A LUCID, SHREWD AND HUMBLE
INDIVIDUAL RIGHT TO THE VERY END

BY GEOFF SHACKELFORD



Cliff Schrock. “I didn't see the ball go in, but the players standing by the green, I knew it was in from their reaction. On the par 5 on the back nine, I had no idea I could reach the green, but that same group was in front of us.”

Naturally, he offered a humble assessment of the accomplishment.

“I never came close to making either one again. It's pure luck.”

He went into the service and ended up playing golf only sparingly later in life.

“I found golf was too time consuming, but I did enjoy it,” he told Schrock. “I didn't like playing with some people who thought they were pros and would get upset if they didn't hit a good shot. I enjoyed most of the people I played with, some I didn't.”

Few know that Wooden faced hard times, too. When he married his beloved Nell in August 1932 while America was in the throes of the Great Depression, Wooden learned that his life savings of \$909.05 had been wiped out because of a bank closing. His highest salary at UCLA was a meager \$32,500.

Later in life, Wooden would finally cash in on his success by writing books and giving speeches. Yet for every corporate talk he gave, there was a free ap-

pearance for a group that could never afford him.

Which brings us to his writings and sayings, many of which were adapted from his extensive reading. Here's a sample of his wisdom:

“Do not let what you can't do interfere with what you can do.”

“Don't measure yourself by what you have accomplished, but by what you should accomplish with your ability.”

“Respect a man, and he will do all the more.”

“You can't live a perfect day without doing something for someone who will never be able to repay you.”

“Be more concerned with your character than your reputation, because your character is what you really are, while your reputation is merely what others think you are.”

I was lucky enough to meet John Wooden, and he always asked about my golf game and one time quizzed me thoroughly about Tiger Woods. He was a sports fan, a regular guy, but mostly a lucid, shrewd and humble individual right to the very end.

That's a life worth celebrating.

Follow Shack, *Golfdom's* contributing editor, at www.geoffshackelford.com or via [Twitter.com/GeoffShackelford](https://twitter.com/GeoffShackelford).



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