

## Understanding Oxygen and Water Levels

BY Dave Doherty

It excites me to know that our industry is finally going in the right direction.

This includes those who deal with the maintenance of sports turf and golf greens, the science of physical properties along with the science of chemical and water properties in maintaining healthy turf.

As I've written many times before, healthy turf cannot be maintained without oxygen, meaning there must be acceptable oxygen levels in our green mixes.

So when asked to speak at the Golf Industry Show in San Antonio, Texas recently, my topic was, what else: "Oxygen...the benefits of oxygen and how to maintain oxygen level in our root zone."

In the late 1990s, the *International Sports Turf Research Center (ISTRC)* started doing research into why some putting greens struggled to have healthy turf when everything such as surface air movement, sun, disease, water, and the soil physical and chemical properties were not a negative factor.

We discovered that the lack of oxygen in a root system was one of the leading causes of turf failure. As this research continued over the next 15 years we've been able to pinpoint many factors leading to this oxygen-deprived condition.

The industry has been very slow to come around to the simple concept that adequate oxygen levels in our root zones leads to healthier turf, fewer disease issues and which also results, in most instances, in less use of chemicals.

The overwhelming interest in oxygen levels exhibited in San Antonio shows me that we are winning the battle that healthy turf needs to have acceptable oxygen levels, and I believe this is the beginning of a very extensive and complex research project.

We are now working with some prominent industry companies who are interested in this matter. For example, a prominent equipment manufacturing company has started doing research into developing new pieces of equipment at affordable prices to oxygenate root zones. Also talks are on-going with one of the leading surfactant manufacturers regarding the importance of uniformity in the movement of water.

By combining ISTRC's 25-year database on physical properties along with its 15-year data base on oxygen levels taken from thousands of greens, we have a good start on this need to better understand oxygen and moisture levels. And not as separates, but in conjunction with each other.

Our future is in the expanding of our knowledge about adequate oxygen levels and uniformity of water movement in our root zones.

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