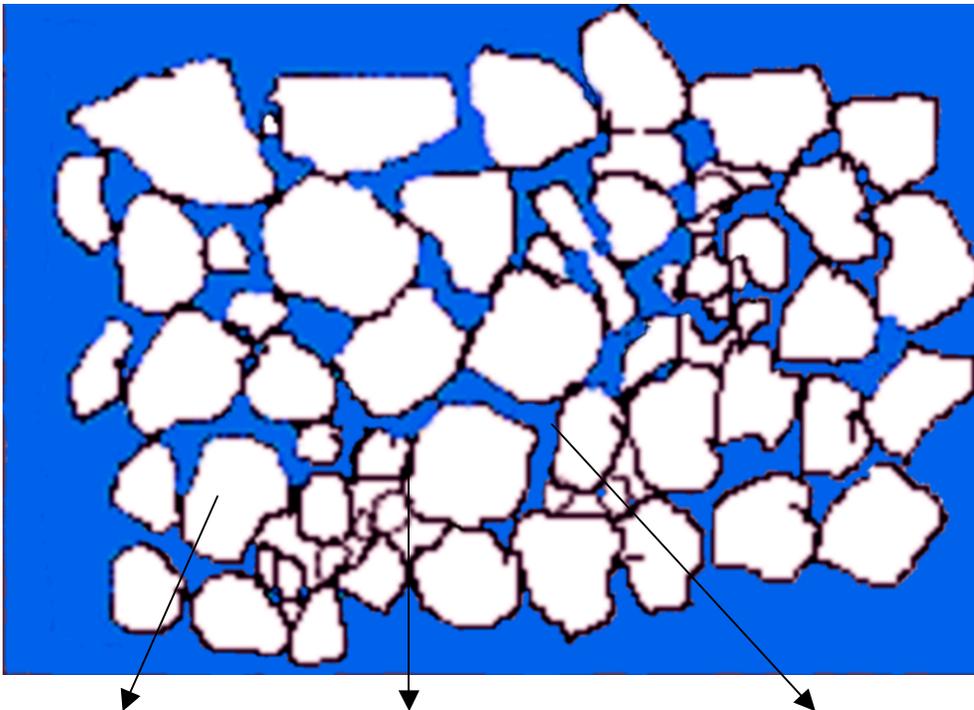


Why do you Aerify

In the spring of 1991 I was on a golf course with a very well known and respected superintendent on the day he was aerifying and I asked him why he aerified. Being a member of a Country Club for many years I never understood why the superintendent would tear up the greens in the spring and the fall when they were looking so good. If the greens needed to be destroyed for the sheer enjoyment of the General Manager and the superintendent why not destroy them in July or August when they were in bad shape anyway. If the GM and GCS wanted to play Russian roulette with there job security twice a year that was their business but why did they have to do it with **my** greens? When I asked my friend the well known superintendent why he aerified, his response was “I need to oxygenate the greens”, when I persisted and asked how much oxygen he needed there was complete silence. This same lack of knowledge in regards to why we do some of the things that we do is still very common in our industry. It seems that we do them because it has always been done that way. WOW what a waste of resources.

Over the years I have been dealing with physical properties I have come to understand that we are only dealing with two things. Solids and Pore space. I don't think that those two things are as complicated as I was led to believe by all the so called experts back in the late 80's. Solids are the sand granular and the pore space is the space between each granular or solid. Small pores hold water and the larger pores hold air. Roots cannot live in solids/granules and they cannot live in water, which brings us to the logical conclusion that our root system can only exist in the **air pores** of our greens, tees and fairways.



White areas = sand

Black areas = water pores

Blue areas = air pores

In 1995 ISTRC's independent research showed that the bent and Bermuda grasses of that time needed to have at least 15% of the total greens mass to be air pores. ISTRC's later research showed that the air pores needed to be in the 18% to 20% range for the **newer** grasses, both bent and Bermuda. The reason for additional air pores needed for the newer grasses is due to the fact that there is a much denser root system that comes with all of the newer grasses. USGA funded research at different universities later confirmed these original I.S.T.R.C numbers. I like to think of air pores as "Rooms at the Inn". If for example we have a million roots, we need a million rooms [air pores] for those roots to live in comfortably. If we have only 800,000 rooms [air pores] for the million roots than the million roots will not have enough oxygen to sustain themselves in a healthy manner and will be unable to provide the golfer with the putting service he desires.

My friend the well known superintendent should have been able to answer my original question with an answer along the lines of: Based on the scientific results obtained from a study conducted by an independent soils lab we know that our greens do not have enough air pores to support the oxygen needs of our grass. Therefore I am removing some of the old material and replacing it with new material that will increase our air pores and begin the process of providing more oxygen for our turf, enabling it to function in a more healthy state.

No answers based on science were available to superintendents back in 1991, however they are **now**. Greens Committees, Owners, GM's and anyone who is responsible for making decisions concerning greens is entitled to an answer that is based on science and not guess work. Questions such as: How often our greens need to be aerified and are the tine sizes and spacing the most effective they can be. Are we wasting money by using the wrong techniques? Do we need additional or different equipment? Are we filling our holes with the best material available? Do we need to fill the aerifying holes or should we leave them open? Should we sometimes fill the holes and sometimes leave them open? With the knowledge that we have available to us today, the superintendent can now answer questions and present the powers to be with the different options available to each course. [768] © David L. Doherty

Dave Doherty is President/CEO and founder of the International Sports Turf Research Center, Inc. (ISTRC) and holds three patents regarding the testing of sand and soil based greens. He can be reached at (913) 706-6635 or via e-mail: daveistec@hotmail.com Web page: www.istrc.com

***ISTRC's contributions to the industry. PhysicalProperties/(Real Time)
Displacements & solutions (smaller tines and closer spacing). Gasses & solutions
(Mention Dr. Milts comments at the Oklahoma conference this month/Nov. 06 about
gasses but no solutions.)

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