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SATURDAY, 18 APRIL 2015

Core Aeration, A thing of the past?

Recently there was an [interesting article](#) about how some superintendents have started to forgo their core aeration practices in favor of less disruptive solid tine aeration with regular topdressing. It seems like we have been told to core aerate forever and the consequences of not pulling a core can be dire. What has changed and how are these guys getting away without core aerating their turf?



Is this a thing of the past?

It wasn't too long ago that fertilizer (specifically nitrogen) rates were much higher on golf courses. A friend of mine had a USGA consultation in the mid '90s and their recommendation was to increase their nitrogen rates to about 9lbs N/1000sq ft on their putting greens! That's about 3x what they now normally apply each season. With nitrogen rates this high there is no wonder why we needed to aggressively remove organic matter 2 or more times per season!

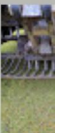
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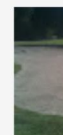


What a drag core aeration is ;)

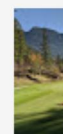
I have heard a lot about how nitrogen rates are being reduced significantly on golf courses. 2lbs N/1000sq ft per season is now not uncommon, and this is on super busy courses with poa annua greens! Historically I have applied about 4 lbs n/1000sq ft each season. This has remained the same even when switching over to a growth potential model for fertilizer applications. What I have noticed, however, is that during the summer months I measure excessive growth. This growth can probably be attributed to the release of nitrogen from the organic matter in the soil. This year I plan to significantly reduce my nitrogen inputs as fertilizer to account for the organic matter N release. With these small changes I fully expect to have my added nitrogen rate in the neighborhood of 2 lbs N /1000 sq ft with predominantly poa annua greens.

With the growth potential model I have learned just how little fertilizer is needed to produce great quality playing surfaces especially in the spring and fall, times when we used to apply the majority of our fertilizer applications. No snake oils, just light applications of urea and ammonium sulfate.

Since making even these changes to my fertilizer rates I have been able to eliminate 1 core aeration each fall and now just do a deep tine and heavy topdress. This is with the same yearly rate of nitrogen but just timed differently. I expect that my spring core aeration will also one day not be standard practice. I have never core aerated our fairways, they are on native soil/rock and see a lot of cart traffic. I just let the worms do the work for me. A minor inconvenience but a lot less inconvenient than a core aeration!



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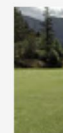
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The turf in the aeration holes does well but everything else suffers, not my idea of progress.

We are also in the age of data collection. No longer are we left guessing. We measure ball roll, surface firmness, moisture content, temperature, nutrient content, and can precisely apply extremely low rates of fertilizer. With this precision turf management I believe that we can minimize waste (excessive organic matter production) and eliminate practices that were meant to deal with that waste (core aeration).

Of course there will probably always be more organic matter production than we would like as roots grow and die back with the seasons but with light frequent topdressing we should be able to keep ahead of that production as well as firm and smooth our surfaces even more.

The consequences of not having to core aerate are many and as far as I'm concerned completely good for the game, turf health and our budgets. Less disruption obviously is good for golfers and the course's revenue generation. Pulling cores and filling the holes with sand also create channels in the soil where preferential flow can occur. PACE Turf has made a great video showing this phenomenon shown below. This results in the accumulation of salts in areas that weren't directly cored and the turfgrass health suffers as a result. Not only that but this preferential flow must disrupt the drainage characteristics of the surrounding soil which probably isn't ideal.

I have seen some people try eliminating core aeration from their programs but fail. I think the reasons for this vary but the biggest factor is probably nitrogen rates. I think that there is still a lot that we need to learn about how much and at what time nitrogen fertilizer is required to produce good playing surfaces.

Will core aeration ever go away completely? I don't think so. There will still be times when we need to push growth (and organic matter production) to recover from damage. I think it will become part of the process from having to push growth beyond what is necessary for normal growing conditions and golf traffic. If we can limit damage to turf by providing ideal growing conditions I think we can save a lot of time and money. Get that chainsaw sharpened eh!

You might be wondering if I am ready to eliminate core aeration from my maintenance program and the answer is no. My nitrogen rates are still too high in my opinion to stop pulling a core. I hope that by following the growth potential model and adjusting for organic matter N release I can get them low



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enough to one day stop this pain in the ass practice.

Posted by [Jason Haines](#)



Labels: [aeration](#), [fertilizer](#), [nitrogen](#)

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