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WEDNESDAY, 27 JULY 2016

Diseasey as hell out here. Summer Disease update.



"Summertime and the livin' is easy"

We are now half-way through the summer and have still not required a broadcast traditional fungicide application on greens. To say it has been easy would be a lie. It has been a roller coaster of disease activity but for the most part I have been able to keep everything in check and the golfers here have been enjoying some of the best conditions in years.

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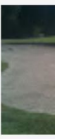
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The weather this summer has been very diseasey. What I mean by this is lots of cool and wet followed by hot and humid. Last year it was hot and dry which made it relatively easy to manage disease. This year I have seen it all. Dollar spot, brown patch, fusarium, and even thatch collapse! Even crazier is that I have seen it all at the same time.



Dollar spot, fusarium, and brown patch in one photo on tees. This is "diseasey"

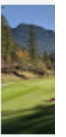
For the past 4 years I thought I had dollar spot beat. That was until this year when I started seeing dollar spot on my greens. It came on very slow and I was able to count the individual spots to track it's spread. I started spot spraying the spots with propiconazole to see what that would do. On my 8th green the dollar spot seemed like it was heading out of control. It had more infection sites than the rest of my greens combined and I was almost ready to put out a broadcast spray to stop the explosion of disease.



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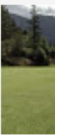
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Etiolation in areas where no TE has been applied. Diseasey

Then I started thinking. Why am I having dollar spot issues this year and not the previous 3 or 4 years? What is different about this year? I am rolling more than ever before and rolling definitely helps reduce dollar spot. My nitrogen rates are at their peak for the season so that should also help. There are no moisture issues. What is going on?

Then I started thinking about how rolling reduces dollar spot. Apparently, from what I've read, **rolling increases the microbial population in the soil** and this has a negative effect on the dollar spot fungus. There is even a bio-fungicide called Rhapsody ASO that uses *bascillus subtilus* to help control the disease. All of this got me thinking about the soil and what I was applying to it that might be throwing it off balance.

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Diseasey as hell

Manganese! A few months ago I saw some patches on my 8th green that I thought might be take all patch. My 8th green is mostly bentgrass now and my manganese levels were quite low. They recommend keeping the soil levels around 30ppm to keep take-all-patch at bay. I was at 4ppm. So I started applying manganese to try and bring the levels up. A week and half later after I started weekly 5kg apps of manganese monohydrate I noticed my first spots of dollar spots show up.

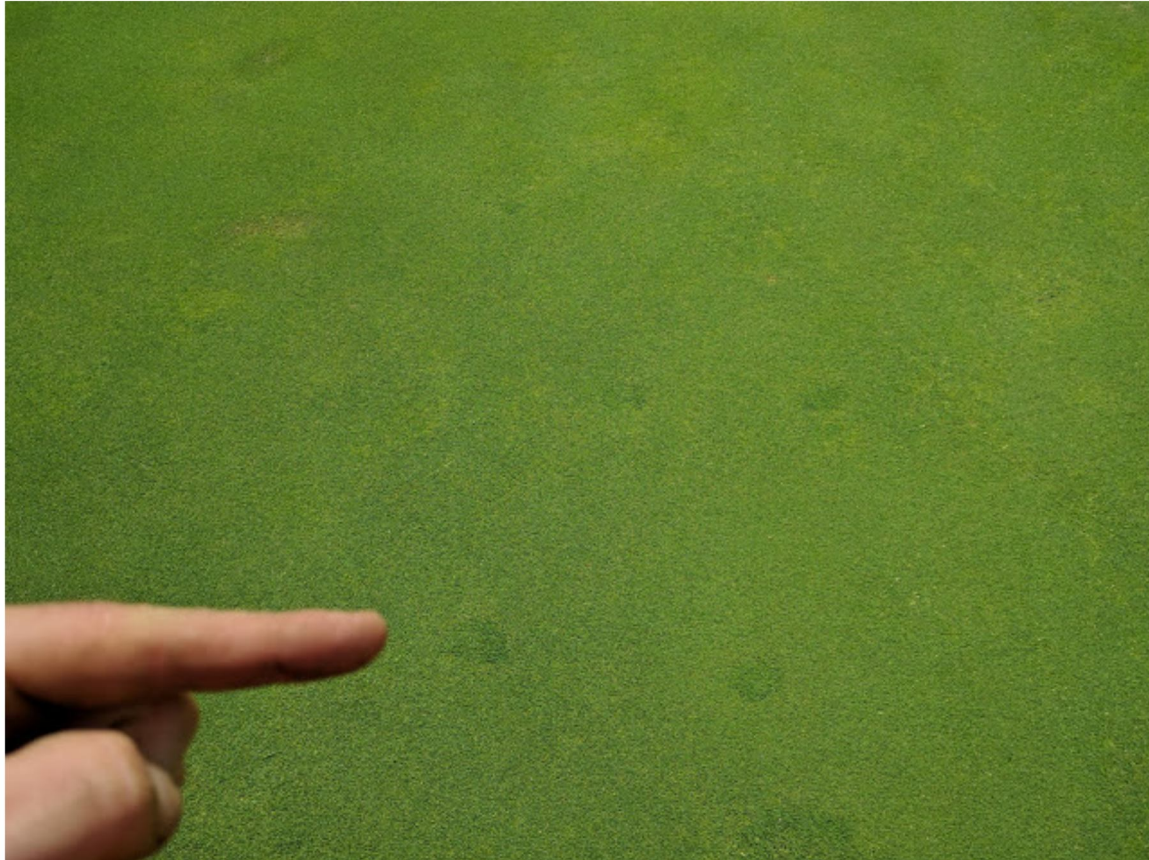


FML thatch collapse

Time went on and the "take-all" didn't go away. The patches were dark green and when I shared a pic on twitter it was suggested that maybe it was thatch collapse. I stepped on the patch and was horrified to find that it was sunken. I was even more horrified to now notice that all those dark green patches weren't just poorly set plugs, they were more of the disease. We will see how that goes in the coming months

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and years. Another disease I am lucky to gain some experience with.



more thatch collapse

Back to dollar spot. I had a hunch that manganese might be impacting the soil microorganisms negatively so I stopped applying it in my weekly fertilizer applications because I didn't have a take-all problem. In the past week the dollar spot has slowed down and I am now no longer worried about it. I have some Rhapsody in storage so I might put some of it out if things flare up again but I am optimistic I won't need to do this.

Number of Infection Sites	
Green	7/10/2016
1	8
2	1
3	0
4	2
5	8
6	19
7	10
8	72
9	3
Upper Practice Area	8
Total	131
area sprayed (m ²)	0.66

Hole 8 has the majority of the disease infection this year.

It is cool to see this happen with dollar spot. Just when you think you have a disease beat you get it again, and are afforded the opportunity to learn something new about it so that you can make better

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disease management decisions in the future. I am learning that dollar spot is highly reliant on a healthy soil (whatever that means) and maybe if we can limit products that could have a negative impact on the soil during times of dollar spot activity, we might be able to manage it with rolling, urea, and maybe even phosphite and silica and other biological controls. I really like the idea of letting the plant's natural defenses (beefed up with ISR and SAR products) and soil microorganisms doing the work as there is much less headache as far as resistance is concerned (it's also way cheaper).

I'm also learning what things might impact the soil microbe population balance (assuming I am correct about the soil biology crap). With disease like dollar spot that seem to be impacted by the soil biology (and controlled by natural organisms) it really makes you think. I also noticed that my moss-killing disease also disappeared this year around the same time that the dollar spot came on. I wonder if the two are connected at all?

I also came across an interesting quote in a [turfdisease.org](https://www.turfdisease.org) post. "There is evidence that hydrogen dioxide can aggravate a dollar spot outbreak by reducing natural competitors to the *Sclerotinia homoeocarpa* mycelium." If hydrogen dioxide can do this then other products could possibly do the same thing. Yep, I bet this is what was happening on my greens this summer and no, I haven't found any written evidence of this online yet. Purely speculation so don't take my word for it.



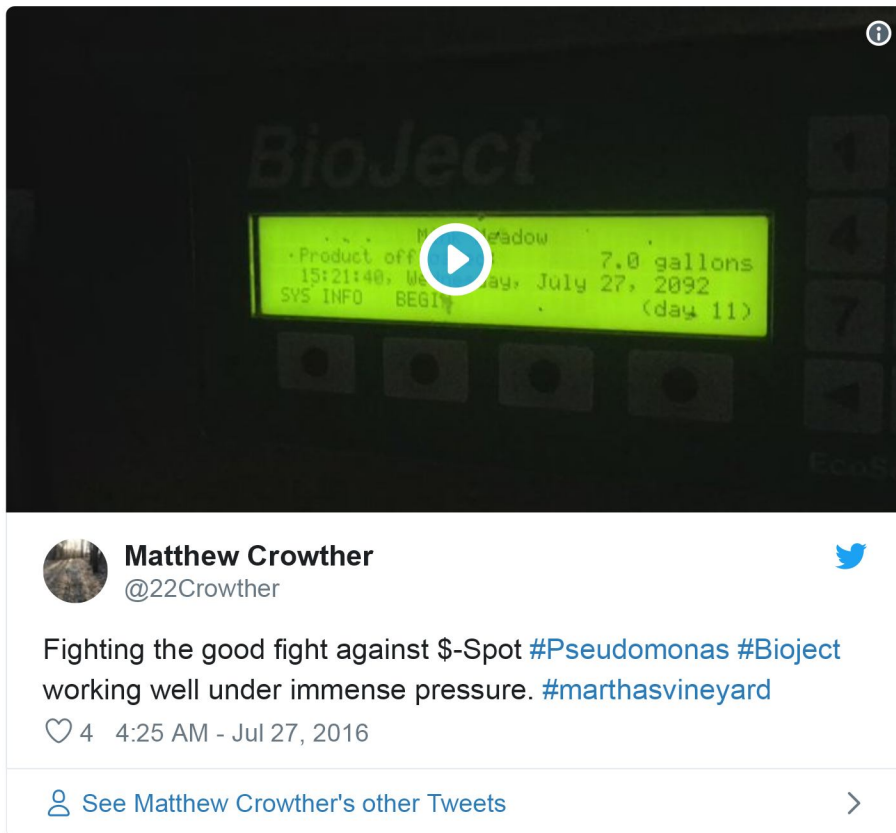
It also makes me think about other disease that I have had issues with like fusarium and cyanobacteria. These diseases seem to be controlled by applying "harsh" products to the plant leaves. By harsh I mean things like iron, sulfur or other metals like copper. Maybe the key is to limit these types of products when dollar spot is active or at least apply them in quantities that limit their impact on the soil. So far this year I have absolutely no cyanobacteria despite the wet weather. I bet this is because of my use of manganese monohydrate which has sulfur in it.

It's all a big balancing act and it is super cool to try and find that "balance" that everyone is always talking about. I'm not sure if balance involves bombarding the soil with "beneficial" organisms or if it just

means limiting the negative impacts of products that we apply and allowing the soil to find that balance for itself.

The less corrective traditional pesticides I use the more I think I might maybe possibly be seeing how things all work. Seemingly innocuous things like potassium can have huge impacts on disease if applied at the wrong (or right) time. Too much during fusarium activity can = bad, too little during anthracnose activity = bad, not enough in soil (below MLSN) = bad. I think we still have a ton to learn about how we can optimize our fertilizer applications to limit the negative consequences and maximize their benefits to plant health.

I still have dollar spot on my tees and fairways and they only receive nitrogen and some potassium on my tees. This tells me that it's not just a "healthy soil" that is required to manage dollar spot without the intervention of traditional pesticides. Under the stresses of regular mowing and traffic found on golf courses you still need to give the upper hand to the turf whether is by rolling or by applying phosphite or other ISR products or beneficial bacteria. I am also not 100% certain I am in the clear on my greens either. The disease spread has slowed and stopped in some cases but the worst time of the year for dollar spot is yet to come so who knows how that will go?



It brings me back to my thoughts about the **problems with organic golf**. It is so limiting that I think it shuts a lot of doors for opportunities to learn. With the safety net of good traditional pesticide products to save your ass when things go wrong, we can push things a bit further to try and learn how do do it with minimal intervention. Right now I'm in uncharted territory. Five months without a broadcast traditional fungicide application and active dollar spot on all greens. If I didn't have some sort of safety net I would be freaking out.



In my case I have needed 20ml of propiconazole to spot spray the dollar spot on my greens. Did this even help? Is dollar spot spread by mowers like fusarium might be? I don't know but either way it was useful for me to count new spots as it was easy to see which spots had already been sprayed in the past. The act of counting disease really helps me understand that actual disease activity and has allowed me to really put off "emotional sprays" like I used to do when I had less information about how much disease there really was out there.

For a while there in May I was a bit worried I would have no disease this year. A little bit of disease is a good thing for how I operate. It keeps you grounded and tells you a lot about what is happening in the environment. No disease, no story, no improvement in your understanding of how it all works. That's how I see it anyway. What a hippy eh?

The summer's not over yet so fingers crossed that I can keep the good times going until the difficult transition to fall brings back the ultimate challenge of fusarium. I can't wait to try some things this fall. The tough times are always an opportunity to make improvements.

Posted by [Jason Haines](#)



Labels: [Cyanobacteria](#), [Disease Spread](#), [disease update](#), [Dollar Spot](#), [envrionment](#), [fertilizer](#), [Fusarium Patch](#), [Pesticides](#), [putting green moss](#), [Sustainability](#), [Turf disease](#)

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