TURF HACKER

Ideas about growing grass

SUNDAY, 9 MARCH 2014

Disease Update March 2014

You probably aren't wondering what that crazy greenkeeper is up to in Pender Harbour but I'm going to tell you anyway!

Overall disease pressure has been interesting. On areas that receive no treatment (fairways, tees) the disease was pretty bad. I have talked with a few other superintendents and most are all seeing the same thing: Crazy bad fusarium on fairways, especially on approaches. This is even apparent on approaches that had fungicide applications made in the fall. I have made no fungicide applications of any kind to my approaches. As the sun rises in the sky I have observed the grass start to out-compete the fusarium and recovery has begun!

Bad fusarium. Possibly made worse by mower spread. Already recovering nicely.

My fusarium management plan has evolved over the years and here is what I am trying right now.

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- I am not using Civitas. I think I have seen damage due to phytotoxicity especially when it is frosty. I also don't like the green colour. Any areas that were thin were also slow to recover. I plan to resume its use when the grow rates pick up in the Spring.
- I have been putting down regular phosphite applications on a monthly interval. I will be putting down phosphite along with Primo maxx this year on a 150GDD interval. This seems to be the optimum application interval for most products on Poa annua.
- Very little fertilizer. I put down a light app of a slow release source of nitrogen to keep the turf happy as it never really stops growing here.
- Regular Primo Maxx applications based on my theory here.
- Mowing only when necessary as determined by clipping recovery and forecasts. So far I have only had to cut the greens 3 times since Nov 19th!
- Spot spraying and counting new fusarium infection sites. A mixture of chlorothalonil, iprodione, and recently Civitas. This combo is because the spot sprays are applied curatively and I want it to be very effective! I had a panic attack in early January and subsequently applied a broadcast spray of Insignia. I am more than likely still seeing control from this product 2 months later due to the cold weather this winter.
- I have not been removing dew. I have rolled the greens 8x this winter falling somewhere in between my target of 4x rolling per mowing and 2x rolling per mowing. We have only been open for play for 2 weeks in January.

The area of interest that I have been focusing on the past few months has been disease spread. Fusarium is a perverse disease especially on the West Coast of Canada, but I am starting to think that it really isn't that bad. If it was so bad all areas of turf would become infected like it often does beneath snow cover. What I am seeing is only a few isolated spots that become naturally infected with the disease. I am probably wrong, but what I am thinking is that maybe we are just making it worse by spreading it around with our mowers as we tend to keep mowing all winter long. What if we stop pushing growth with fertilizer applications and cut back on mowing? Looking back on my records the majority of the spread happened during a 2 week period in late Oct-early Nov. Maybe a Primo app to fairways and tees during this time would eliminate the need to spread the fusarium around with the mowers in the cool wet weather?

Something is suspect with this disease spread pattern

For the most part is is hard to really see the effect mowing has on disease spread as we mow different directions each day and the disease appears to be random. The only area of my course where mower

direction is rather constant is on the putting green collars. The picture above shows the straight line spread of the fusarium on my 7th green collar.

The pictures below shows the constant spacing of the disease infection. With this data I can tell that the disease is spread from the rear roller of my collar mower as it has a diameter of 5cm or a circumference of about 15cm where the front roller has a diameter of 6.5cm. This might suggest that the disease is only spread after it is cut, not before. Who knows?

In recent weeks I have been looking and asking about how disease is mechanically spread. It seems that it is common knowledge that it is spread by mowers but that's about as far as it goes. With something that has such an impact on the incidence of disease don't you think there would be more research done on the subject? How can we minimize the spread without treating the surfaces with fungicides before mowing? Could this be another reason to roll fairways and tees?

I recently wrote a post about tracking pesticide use in a meaningful way. Since then I have committed to my cost and EIQ goals and have been tracking my progress. I have also been using my new tools to make better decisions about what products I use and how I use them. So far I am ahead of the game but this is probably most likely due to the cool winter we had which generally extends the duration of control of most pesticides applied.

Sustainability Metric	YTD Total Cost	Goal	Percent of Goal	YTD	Progress	Days
Cost Fusarium	$838.64	$5,000.00	16.77%	18.63%	1.86%	7
Cost Dollar Spot	$0.00	$400.00	0.00%	18.63%	18.63%	68
Total Cost	$838.64	$5,400.00	15.53%	18.63%	3.10%	11
Fusarium EIQ	84.81	800.00	10.60%	18.63%	8.03%	29
Dollar Spot EIQ	0.00	1.00	0.00%	18.63%	18.63%	68
Total EIQ	84.81	801.00	10.59%	18.63%	8.04%	29

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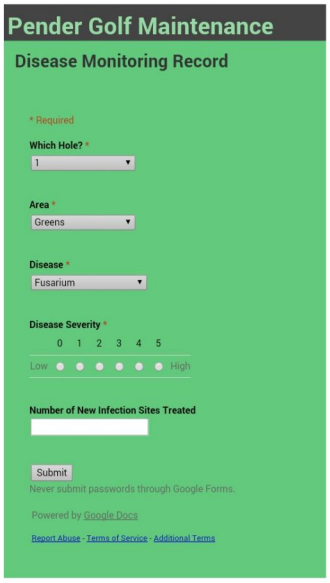
As you can see from the above table I am currently 11 days ahead of my goal for pesticide cost and 29 days ahead of my goal for EIQ. The way I use pesticides has changed dramatically since I started using this goal tracker. My goals and where I am in relation to them are always in the back of my head now. I think that of all the things I have tried over the years, **tracking my pesticide use could make the biggest difference in their use reduction.** This will also help me better determine the effectiveness of all my pesticide reduction or IPM practices over time. Gone are the days where I say that such and such a practices generally reduces pesticide use. Now I will actually know!

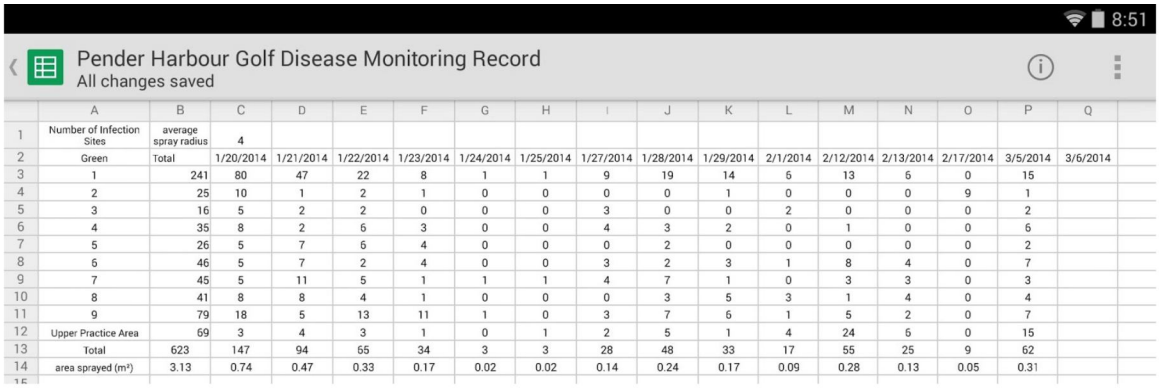
The best fusarium specimen I could find

With these goals and theories in mind I had to find a better way to get control and keep my costs and EIQ down. What I came up with is spot spraying every day that I monitor disease. I would count and treat disease in the hopes of significantly reducing the spread of fusarium on the putting greens. This was also a great way to keep interested in the rather slow and boring winter months!



The disease monitoring record I have made on my phone makes it easy to record data in the field.

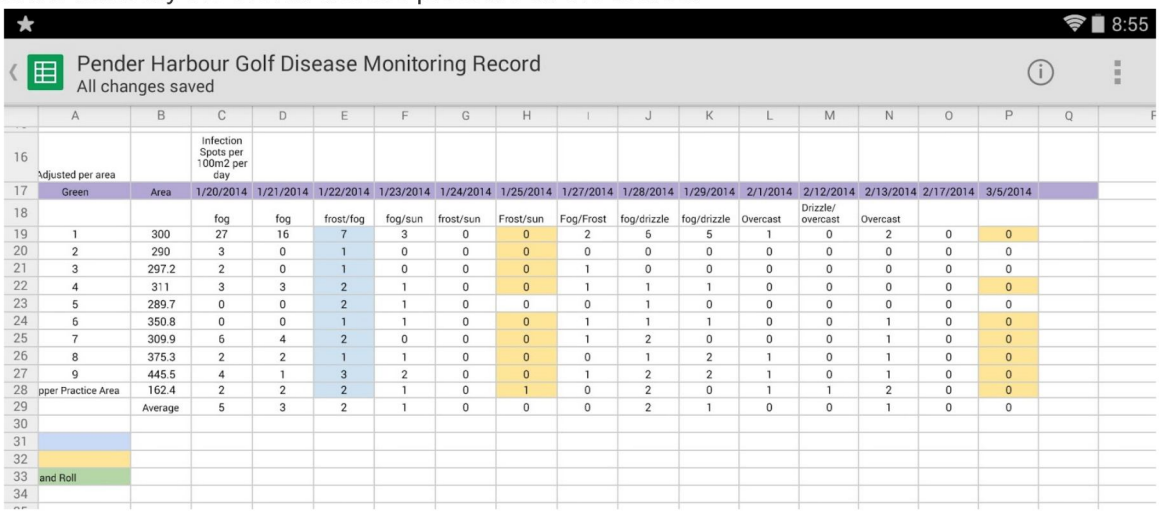
Here is the data I have collected over the past month. The following table shows the raw data.



Pender Harbour Golf Disease Monitoring Record
All changes saved

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Number of Infection Sites	average spray radius	4														
2	Green	Total	1/20/2014	1/21/2014	1/22/2014	1/23/2014	1/24/2014	1/25/2014	1/27/2014	1/28/2014	1/29/2014	2/1/2014	2/12/2014	2/13/2014	2/17/2014	3/5/2014	3/6/2014
3	1	241	80	47	22	8	1	1	9	19	14	5	13	6	0	15	
4	2	25	10	1	2	1	0	0	0	0	1	0	0	0	9	1	
5	3	16	5	2	2	0	0	0	3	0	0	2	0	0	0	2	
6	4	35	8	2	6	3	0	0	4	3	2	0	1	0	0	6	
7	5	26	5	7	6	4	0	0	0	2	0	0	0	0	0	2	
8	6	46	5	7	2	4	0	0	3	2	3	1	8	4	0	7	
9	7	45	5	11	5	1	1	1	4	7	1	0	3	3	0	3	
10	8	41	8	8	4	1	0	0	0	3	5	3	1	4	0	4	
11	9	79	18	5	13	11	1	0	3	7	6	1	5	2	0	7	
12	Upper Practice Area	69	3	4	3	1	0	1	2	5	1	4	24	5	0	15	
13	Total	623	147	94	65	34	3	3	28	48	33	17	55	25	9	62	
14	area sprayed (m²)	3.13	0.74	0.47	0.33	0.17	0.02	0.02	0.14	0.24	0.17	0.09	0.28	0.13	0.05	0.31	

This table shows the data broken down by area and days since last monitoring. The average at the bottom is basically the overall disease pressure on the course.



Pender Harbour Golf Disease Monitoring Record
All changes saved

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
16	djusted per area		Infection Spots per 100m2 per day														
17	Green	Area	1/20/2014	1/21/2014	1/22/2014	1/23/2014	1/24/2014	1/25/2014	1/27/2014	1/28/2014	1/29/2014	2/1/2014	2/12/2014	2/13/2014	2/17/2014	3/5/2014	
18			fog	fog	frost/fog	fog/sun	frost/sun	Frost/sun	Fog/Frost	fog/drizzle	fog/drizzle	Overcast	Drizzle/ overcast	Overcast			
19	1	300	27	16	7	3	0	0	2	6	5	1	0	2	0	0	
20	2	290	3	0	1	0	0	0	0	0	0	0	0	0	0	0	
21	3	297.2	2	0	1	0	0	0	1	0	0	0	0	0	0	0	
22	4	311	3	3	2	1	0	0	1	1	1	0	0	0	0	0	
23	5	289.7	0	0	2	1	0	0	0	1	0	0	0	0	0	0	
24	6	350.8	0	0	1	1	0	0	1	1	1	0	0	1	0	0	
25	7	309.9	6	4	2	0	0	0	1	2	0	0	0	1	0	0	
26	8	375.3	2	2	1	1	0	0	0	1	2	1	0	1	0	0	
27	9	445.5	4	1	3	2	0	0	1	2	2	1	0	1	0	0	
28	pper Practice Area	162.4	2	2	2	1	0	1	0	2	0	1	1	2	0	0	
29		Average	5	3	2	1	0	0	0	2	1	0	0	1	0	0	
30																	
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33	and Roll																
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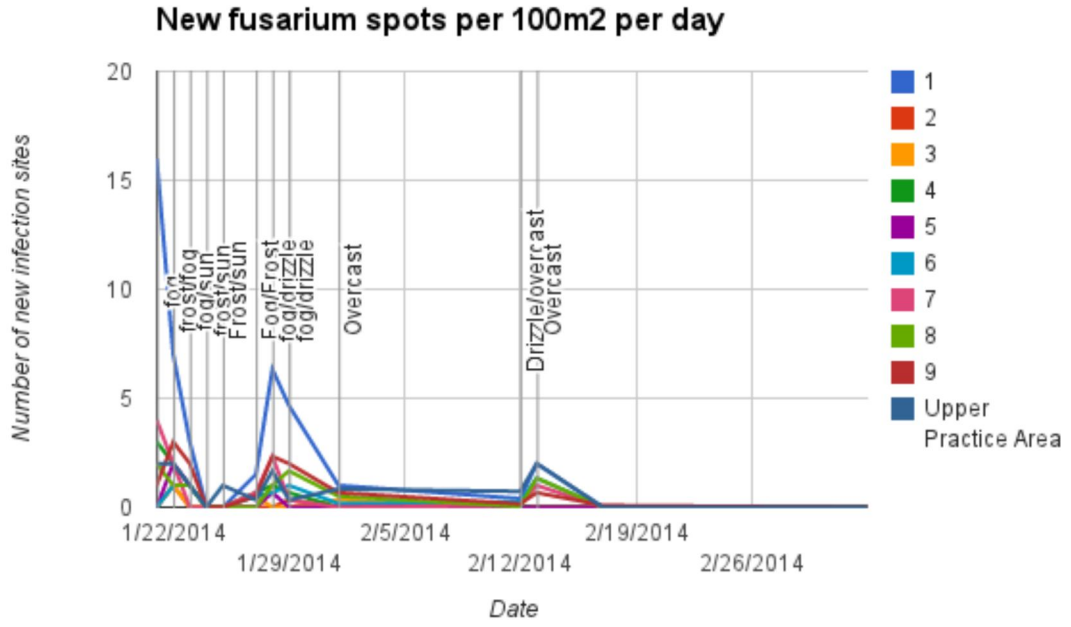
Here is a graph of the disease pressure!



As you can see disease pressure has been pretty low lately. I would also say the same is true for areas that aren't treated with pesticide as it seems the damage is now on the mend. It might also help that nothing other than greens has been cut since mid November.

This data's main use is to calculate the incidence of new disease but it might also help to shed some light on disease spread. I will investigate anything further if I notice any interesting trends over time.

The disease affecting the silvery thread moss is back!

While out aerating greens yesterday I noticed a lot of new disease popping up. With the warm and very wet weather the fusarium is back! Spring is finally here I guess. The forecast is calling for relatively warm and dry weather this week so I will continue spot spraying and will try to limit the spread as much as I can. I don't expect that spot spraying will be a viable control option for much longer, but plan on doing it as long as I can manage. I will let you know how it goes in the next disease update probably in a month or two.

Posted by Jason Haines

Labels: Disease Spread, disease update, EIQ, fertilizer, Form, Fusarium Patch, Microdochium nivale, Turf disease

No comments:

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