TURF HACKER

Ideas about growing grass

MONDAY, 29 MAY 2017

Better than Organic?

Organic is seen by most (by most I mean the uneducated public) as the best way to manage a golf course. Over the years I've tried to go down that road but found that there were too many problems with going "organic." Long story short, I think we can do better than organic.

Putting labels on things has always bothered me. Committing to organic or vegetarianism or veganism or low carb is too limiting for me. Yes, they are probably good targets to work towards but if you commit to these ways of thinking you can hide yourself from other ideas that might actually be better than these restricting ideologies require.

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The environmental impact of my golf course operation is one of my main concerns as a golf course superintendent. I don't want to do things that negatively impact the environment and will look for ways to reduce this impact in any way I can. Of course in the back of my mind there are costs to be aware of and course conditions to maintain as well (who am I kidding, these are both very much in the front of my mind).

To most, going organic is seen as the ultimate goal if you want to be environmentally sustainable. My problem is that if you really look at these organic options, they aren't as great as everyone would like you to think.

Here I will discuss my struggle with the organic or all natural concept and suggest ways that I think we might be able to be better than organic. No, I'm not suggesting we close our courses and plant a forest as some of the environmental extremists would like.

ORGANIC FERTILIZERS

When most people think of organic they think of "nasty" pesticides. For me, I think that perhaps the fertilizer we apply is having a bigger impact on the environment. We read about the huge issue with P polluting our fresh water ecosystems, fertilizer runoff and other damaging impacts that fertilizer can have on the environment. By going organic we are limiting ourselves to using only "natural" products to feed our grass.

Here's why I can't justify using organic fertilizer on my golf course for the sake of the environment.

For the most part, grass needs nitrogen in the largest quantity of all the elements supplied as fertilizer. Organic fertilizers generally have low amounts of N in them. They are also normally slow release forms of N. Organic fertilizers also generally have higher amounts of P and K in them. Amounts that are

probably in excess of what the plant can use if you are using organic N to drive your nutrient demand (because we all know that the amount of nutrient uptake is directly related to how much N is supplied to the turf).

Where are these excess organic nutrients going? Just because they are from natural sources does not mean that they won't pollute the water or environment or have other negative consequences if they end up where they shouldn't. Because organic fertilizers have low amounts of nutrients per unit mass of product you need to apply more product to get the desired amount of nutrients. Wouldn't applying more product at a given time increase the likelihood that it could be washed away to places it shouldn't be? We see this all the time with the use of animal manure in agriculture.

Applying excess nutrients such as potassium could also be making our winter diseases worse which would require more corrective pesticide applications (yes your natural pest control products are still pesticides). If we know that some excess nutrients can make disease worse, then why would we apply more of that nutrient than is necessary?

Doug Soldat
@djsoldat

More snow mold than ever this year. Left: no K for six years.
Right: 0.2 lbs K every other week. A4 bent

♡ 110 10:35 AM - Feb 20, 2017 · Wisconsin, USA

72 people are talking about this

By using the MLSN and simple soluble source fertilizers we can accurately apply only the nutrients that the grass will need. This means less waste and maybe less likelihood that these excess nutrients will find their way to places they shouldn't be.

We are lucky on golf courses to be able to apply fertilizer light and frequent. In agriculture they are often forced to do one fertilizer application per year. We don't need to do that so we can use the simple soluble fertilizers to precisely apply only those nutrients that are required by the plant for a short period of time. Soluble source fertilizers also allow us to accurately time the nutrient availability to the plant. A slow

release product's release is more subject to environmental conditions so we lose some control here. Control of things that fertilizer does to a plant such as the growth rate, susceptibility to diseases, playability, the list goes on. In my experience I have been able to make big consistent reductions in pesticide use with the precision that the MLSN, growth potential and synthetic soluble fertilizers afford me. Who knows? Some of the things I have seen and heard of lately might suggest that in some locations we could use precision fertilizer applications to eliminate the need for pesticides entirely.

Yes there is a lot of fear surrounding the use of soluble fertilizers which sound a lot like my concerns described above. The difference is that these concerns (volatization, leaching, burn) are normally only issues when you use soluble fertilizers to supply all the plant's nutrient needs for an entire year in 1 application like is often done in agriculture. We aren't doing that on golf courses so these concerns should not be issues.

So by not using organic fertilizers we can only apply those nutrients that the plant needs (not that much it turns out) and be relatively sure that the fertilizer ends up in the plant and not in the groundwater or creek that runs through the golf course.

PESTICIDES

I recently came across a claim by an "all natural" green keeper practitioner that they had gone over a year without pesticides with the use of Compost Tea. Wow! Just like Rob Wilke who has found success with Wood Ash (I may have as well) this kind of thing excites me (but I have told Rob that I think he could probably improve his approach to using wood ash)(I have another blog post coming with more info about this).

Digging a bit deeper I found out that although they hadn't used any traditional synthetic pesticides they did still require almost constant applications of sulfur and mineral oil.

Yes these products are considered organic but does this kind of management make sense if you are trying to manage your turf in a more sustainable way? To me, it seems like the exact same way we manage turf with synthetic pesticides and paint by number fertilizer practices. We completely guess about what fertilizer is needed, disregard the impacts of certain cultural practices and how they impact disease, then broadcast large quantities of corrective products to keep the out-of-control disease in check.

This is the biggest problem with Organic in my opinion. It has been bastardized by putting too much emphasis on using "natural" **products** and not enough on real strategies that can prevent or reduce the requirement of these products in the first place.

THE BENEFITS OF COMPOST TEA

This is something that has been constantly debated over the years. There are those who are believers and those who think it is a waste of time and does nothing. I am one of the people who believes that for some, Compost tea can have huge benefits but it's probably not in the way you might think.

Turf managers need to do things. If we fail while trying to do things that is seen as better than failing because you didn't do something. Inaction (whether it's right or not) is seen as negligent.

I think that the best part of Compost tea is that it does

nothing but allows turf managers to feel like they are doing something. This gets rid of the fear of losing your job if things go sideways because hey, you tried, right?

The use of compost tea allows turf managers who might over manage their turf to apply less fertilizer and less pesticides because they believe that the compost tea is the reason. In reality I think that they could have gotten away with less fertilizer and pesticides to begin with, compost tea or not. It's what I have done and it works. To use less fertilizer and pesticide you don't necessarily have to replace it with another product. You simply just need to apply less....

SHOULD WE SAY NO TO SYNTHETIC PESTICIDES AND FERTILIZERS?

I don't think we should. Saying no to these products simply because they aren't natural is kind of like saying no to modern medicine. It turns out that you can go to jail for denying modern medicine. It's also possible you could lose your job for denying modern pest control products. If not that, you might also lose your customers.

While I think that there is definitely a place for these products I think that we need to be smarter in how we use them. Simply taking antibiotics before you get sick isn't a very smart thing to do but this is sort of what we are doing with our grass. Yes, we can predict when some diseases will definitely occur and use more effective preventative pesticide applications or we can learn more about that disease, refine and fine tune our cultural and fertilizer practices and maybe get by without the need for remediation.

What we do with turf is kind of like taking antibiotics before you get sick because you plan on not washing your hands when using the toilet and hanging around other sick people with transmissible bacterial diseases. With simple practices such as washing your hands and avoiding other sick people we can prevent the need for antibiotics. And this is a good thing because resistance to these products is a very real threat so their use should be limited to when it's only absolutely necessary.

With products that induce systemic resistance we can further give our grass the edge it needs during periods of high stress. To me, even though products like phosphite might be synthetic I feel that they are better than natural products. They allow the plant to fight off the threat which seems much more "natural" to me than applying huge quantities of other products to kill the disease.

I also think that saying no to synthetic fertilizer isn't such a good idea. Sure, if you want to use natural sourced fertilizers for you p and K needs then go right ahead but for the most part grass needs very little, if any, of these nutrients so you still need that n source.

Case in point, for the past 4.5 years I have only applied nitrogen to my fairways and my soil tests still show that I have an abundance of all the other nutrients needed to sustain healthy turfgrass. The condition of these fairways would agree with the soil test results. The grass is healthy and performs as expected. The nitrogen is used to give the grass the edge it needs to out-compete weeds. I could use less nitrogen but in the areas I have done this, weeds quickly take over and this could be made worse by applying excess potassium!

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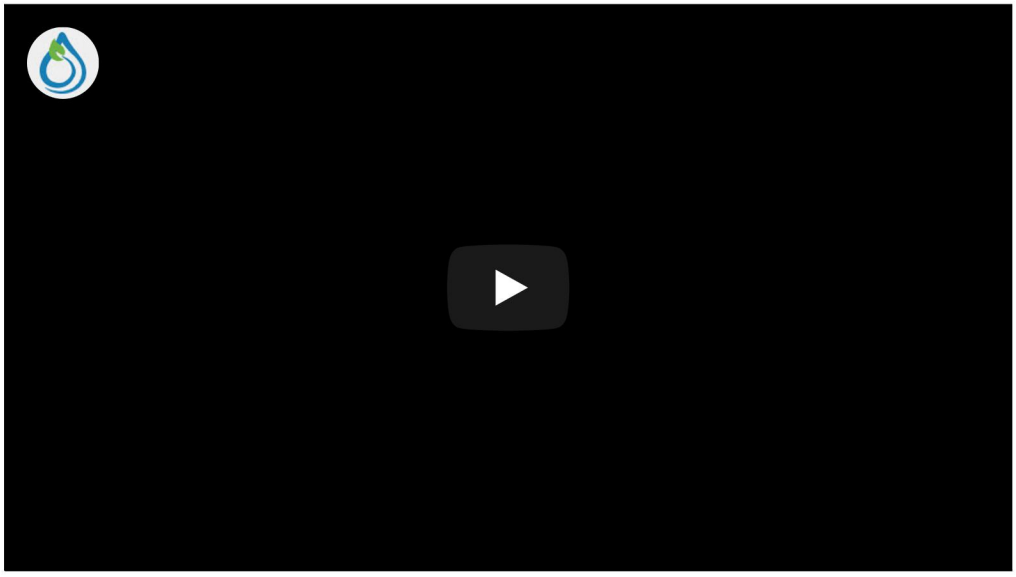
Not bad for a low input fairway (only nitrogen, water and mowing)

TAKING THE PERMACULTURE APPROACH

I'm not the only person who is looking to reduce my environmental impact that thinks Organic is BS.



Permaculture is a system of agricultural and social design principles centered around simulating or directly utilizing the patterns and features observed in natural ecosystems.

This is what I try to do and is what minimalism is all about. It is asking what the impacts of each practice we do to our turf is, then justifying it along with those impacts to get the desired results. Things like core aeration, daily mowing, and verticutting do have their benefits but also carry negative consequences. If

we can prevent the need for these practices without negatively impacting playability or the economy of our golf course then aren't we better off?

By introducing and understanding how to grow hardier turf species we can further improve conditioning while reducing inputs and environmental impacts (unless you're against GMO then stick to growing poa).

The benefits of the permaculture approach go beyond fertilizer and pesticide use. By growing the grass as slow and with the minimal amount of inputs as possible we can further reduce our need for fuel and labor and essentially get more done with less. No hokus pokus and real results.

SO WHAT IS THE BEST APPROACH?

Of course, labeling your management style as either Organic or Permaculture you are severely limiting what you can do. I think that an integrated approach that borrows practices from all facets of turfgrass management (organic, permaculture, synthetic product driven) can result in lower inputs, more precision, more consistency and better grass.

The only downside? To the public this has little meaning and leaves a lot of room for practitioners to abuse the "rules". To most, Organic means something whether or not they actually understand what it means and I think this is why there is so much pressure to go organic even though it's probably not the best approach for the environment or anyone.

I've been told by those who go the all natural route that I have a lot to learn and have my head stuck in the sand but is this true for someone who has seriously looked at all facets of turfgrass management and has taken minimalism to the extreme? As I mentioned above, by committing to one management scheme you are automatically putting your head in the sand to all the other ways of management that don't fall under that scheme.....

This is made worse as measuring the environmental impact of things is very difficult to do. How can we even say that one practice is better than another?

My take on environmental impact is simply; use less.

I hope that everyone who is interested in reducing their environmental impact can take a serious and objective look at their operations and use real solutions to make a big difference.

Posted by Jason Haines

Labels: fertilizer, Growth Potential, minimalist, MLSN, opinion, Organic, Pesticides, phosphite

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