MLSN newsletter #22

Hello,

Happy New Year and Happy Chinese New Year! Here's an update about the MLSN project.

Soil test year in review

I looked at *all* the ATC soil samples tested at Brookside Labs for nutrients in 2023, excluding research samples. This came to a total of 617 soil test results, from 63 different facilities (mostly golf courses).

Of those samples, 84% were above the MLSN minimum for K, 89% were above the P minimum, 87% above for Mg, and 84% above for Ca.

The lowest Mehlich 3 soil test P was 5 ppm, and the highest was 1380, with a median of 59. To put that 59 ppm median into context, that is in the *high* category using the SLAN interpretation. There is "little or no crop response expected from applying the particular nutrient" when it is in the SLAN high range.

The lowest Mehlich 3 soil test K was 9 ppm, and the highest was 2040, with a median of 67. To put that 67 ppm median into context, that is in the *medium* category using the SLAN interpretation, which is, from Carrow et al., "approximately a 50% chance of getting a plant growth response from application of the nutrient; if supplemental fertilizer is not applied, growth will probably be limited, especially as the season progresses."

In my seminars about MLSN, I sometimes discuss the meaning of that, because if there is a 50% chance right now of getting a response from adding a nutrient, professional turf managers should add it. And if growth will "probably be limited" if more is not applied, again, professional turfgrass managers should be adding the element. The problem with K, however, is that sandy soils don't often test in the high range, even though the turfgrass grows fine and is getting plenty of K from the soil. Only 19% of the samples tested in the SLAN high range for K. By using MLSN, one can look explicitly at plant demand for K, and one gets a recommendation that supplies all the K the grass can use, without trying to add K to adjust a soil test value.

Two updates at PACE Turf

I wrote about Favoring creeping bentgrass or *Poa annua* with P fertilizer in a PACE Turf update, with some thoughts on the research by McNally et al.. The take home message is:

> There's no doubt that you can put some stress on annual bluegrass (and bentgrass too) if you let the P get low enough. This is an advanced greenkeeping technique, and we recommend it all the time, in conjunction with monitoring the growth rate, monitoring the turfgrass performance, and

hopefully, having a test plot somewhere where you put out some P to see what the grass looks like where P is applied.

I also made A soil sampling recommendation. From that update:

> From golf course putting greens, we recommend that 80% of the soil samples be taken to a 10 cm depth, and 20% of the samples be taken to a 10 cm depth and then divided into top-half and bottom-half samples. Specifically, that's four soil samples (four greens) to a 10 cm depth, and another green sampled to 10 cm with the sample divided into a 0 to 5 cm portion and a 5 to 10 cm portion.

The reason for this is to check the gradient of nutrient concentration by depth in the soil. For example, I collected a soil sample from a putting green in Japan last November that had Mehlich 3 P at 46 ppm in the top 5 cm and at 199 ppm in the 5 to 10 cm layer. It's useful to know that, especially when making a recommendation of "you don't need to apply P fertilizer this year." Another sample, collected in December from a putting green in the USA, had an opposite gradient. The 5 to 10 cm depth was 28 ppm Mehlich 3 P, just above the MLSN minimum, and the top 5 cm was at 83 ppm. When turfgrass managers know the gradient for P, and for other elements, in the putting green rootzone, they can manage nutrients with even more precision.

And a reminder, you can get full access to all PACE Turf resources, including these weekly updates with timely information and advice, with a $275 subscription.

GP is not MLSN

There are a lot of new posts and pages and seminar presentations with an MLSN tag at the ATC website. I'd like to highlight one of them: MLSN is not GP, and GP is not MLSN. Low growth and low N rates are not part of MLSN. MLSN is a method to interpret soil test results and make a fertilizer recommendation that ensures the grass will be supplied with all the nutrients it can use, no matter the N rate.

If you apply no nitrogen to bermudagrass, MLSN will make a recommendation that ensures the grass will be supplied with all the P, K, Ca, and Mg that it can use, given that N rate for bermudagrass.

If you are managing perennial ryegrass on a football pitch, applying 1200 kg N/ha (24 lbs/1000 ft^2), MLSN will make a recommendation that ensures the grass will be supplied with all the P, K, Ca, and Mg that it can use, given that N rate for perennial ryegrass.

Three recent conversations

1. I was a guest on The Tie podcast and we talked about golf, greenkeeping, and playability, and even about MLSN!
2. A correspondent wrote to let me know that he had been reading The Secret MLSN Operations Manual and had learned all kinds of things about soil testing in general, in addition to learning a lot more about MLSN. It's been a few years since I published that, so some of you might not have seen it. It's a fun and easy read.
3. I met with David Worrad from Living Turf on a visit to Sydney, and we discussed the MLSN method. He asked me if I knew other companies that use MLSN in their interpretation and product recommendations. "Not many," I replied, "but I'm going to speak with another company next week." That's Regal Chemical Company, and I got an inside look at their use of MLSN during a facility tour, and then I spoke the next day at Regal Live 2023. There's a nice logic to using MLSN and helping customers choose the products that apply just what the grass needs. I know there are some

other companies out there that put an MLSN column on a soil test report (by the way, see how ATC presents test results in this example soil report). What impresses me about Living Turf and Regal is their incorporation of the MLSN method not only into the interpretation of results, but also into the product recommendations.

Wrapping up, here are a few more notes and reminders:

- recent MLSN newsletters are here
- Check out the best ways to keep up page for a listing of *all the ways* to follow along with my turfgrass work.
- Chris Tritabaugh's newsletter has a lot of information related to MLSN and the broader management of fine turf
- MLSN is about interpretation and recommendations; I'm also quite interested in the sampling part of soil testing. If you haven't read it yet, take a look at the series of posts on the sampling topic, summarized in Have we been doing it all wrong?

Thanks for reading. If you like the type of summary information presented in the soil test year in review section, please let me know, and I can develop that in more detail in future newsletters and summary documents.

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