

## Spring Business and Education Meeting 2014

By David Brandenburg, Golf Course Manager, Rolling Meadows Golf Course

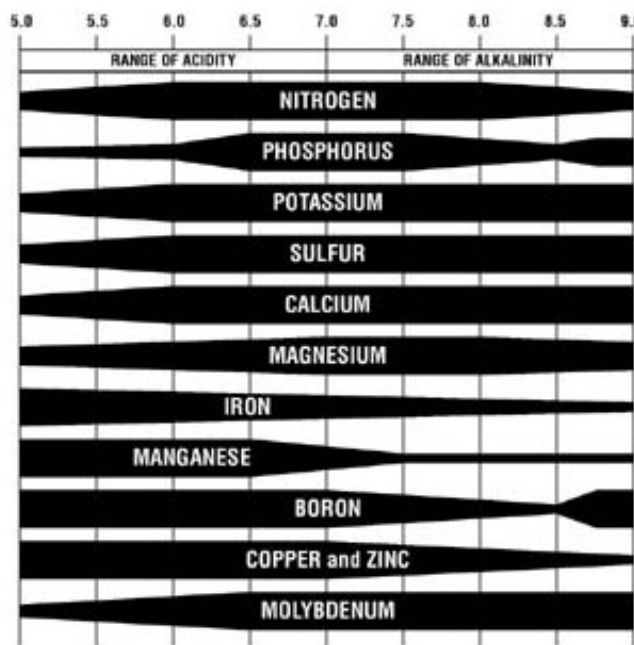
A good crowd turned out for our annual spring meeting at Whispering Springs Golf Course in Fond du Lac. The move to Whispering seems like a good one and the easy to find, easy to park, less expensive location accommodated our group with ease.

Dr. Nick Christians from Iowa State University gave a talk titled Plant and Soil Interactions. He made us all nervous when his first words were "There is lots of numbers so your going to want to take a lot of note". Then he added we could just buy the book so the room relaxed a little and waiting for his common sense approach to soils and nutrients.

Turfgrass has problems that other areas of agriculture do not see because ag can till and starts their plants over each year. In turf we are dealing with a perennial plant under traffic and often in soils unfit for agriculture.

Dr. Christians had many quotable moments including when speaking about soil science he said "Few fields have so many scams and misinformation". Chemical soil tests have proven to be quite consistent from lab to lab but what varies is the interpretation. Often turf managers will find the interpretation of their soil test depends on what product the interpreter is selling.

We can tell a lot from the soil test numbers for CEC, pH and buffer pH. CEC at its simplest is the ability of the soil to exchange cations. A good number for turfgrass is 25-30 if the soil has good physical characteristics. You the reader really should have been there because Nick covered way to much material for



### Availability of nutrients based on soil pH

me to write in this issue so I will give you a few take home points and you can buy the book along with those who did not take notes.



Dr. Nick Christians discussing soil testing and nutrients.

For grow in on "new" soils often magnesium Mg is the limiting factor in grow in because it is at the heart of chlorophyll production. If you have a new seeding that is just not taking you can mix a teaspoon of Epsom salts in a squirt sprayer and do a small test plot with 0, 1, 2, 3 and 4 sprays per spot. If the soil is deficient in Mg or available Mg the sprayed spots will green up.

Dr. Christians moved on to pH or the number for potential hydrogen in the system. Ph is expressed in a number from 1-14 with 7 being neutral. The smaller the number the more hydrogen ions are taking the place of Ca, Mg and K could or should be.

Fairways tend to have a average pH of 6.5 while greens commonly average 8.2 because of the sand. At 8.2 and above iron additions may be needed.

To raise the pH "lime" or calcium carbonate is historically the best choice. Nick was clear to say "Lime is good if you have the problem lime solves". Or in other words lime will raise pH, nothing else. If your pH is adequate you do not need lime because it will do nothing for your soils or plants.

One of the numbers least understood is the buffer pH and it is only run if the regular pH is below 6.5. The buffer pH is tied to how resistant the soil pH is to change and how much lime would be needed to bring the particular soil to pH to 6.5.

Dr. Christians then moved on sodium and the challenge Na brings to turf as a non essential element. It is naturally occurring and found in high levels in many parts of the country but it usually is introduced to the profile though irrigation with effluent water.

If sodium levels are too high gypsum can be used to negate the effect. One calcium ion will knock off 2 sodium ions but it is a slow process that can take years to fix.

Once again Dr. Christians was clear to say gypsum is not a miracle and will not fix compaction. "Gypsum fixes the problem gypsum fixes".

Water tests were next on the agenda starting with SAR or Sodium Adsorption Ratio which represents the ratio of sodium to calcium and magnesium.

It can be used to estimate the amount of sodium that will accumulate in irrigated soil. The finer the soil the quicker the damage from sodium will be and the more likely the salts will destroy the soil.

Bicarbonates can react with Ca and Mg and can result in higher SAR. Turf managers can reduce bicarbonates with an acid injection system using sulfuric acid to react with the bicarbonate.

Many unscrupulous salesman will try to sell you products or systems to reduce bicarbonates. However it is important to note that without high sodium bicarbonates are not a problem.

Acidification of a high pH soil can take a long time and is hard to make a difference and is nearly impossible with a highly buffered soil. In a 20% calcium carbonate sand mix it can take using the maximum of 10# of sulfur per 1,000 square feet 1,000 years to lower the pH.

Sulfur will work when a soil has a low pH but water has a lot of calcium or magnesium to tie up the hydrogen ions which raises pH. In this case sulfur will reduce the pH easily.

Dr. Christians offered with a pH of 8.2 or higher it is better to add iron (Fe) and fix micronutrient deficiencies than to try to lower the pH.

When soil testing Dr. Christians offered samples should be taken from several locations with the depth determined by the lab. The samples should be mixed up. Unless you are in the process of changing the soil profile or doing other work a soil test every third year is sufficient.

Most Universities use the SLAN (sufficiency level of available nutrients) method based on many years of research while many newer private labs use the BCSR (Basic Cation Saturation Ratio).

Either will give you the numbers you need as long as you know how to interpret the results. The BCSR method is newer and based on less research. Dr. Christians said when speaking on the BCSR "it is easier to manipulate the numbers to make it look like you need something someone

wants to sell you."

Moving on to some of the essential elements Nick's experience has shown most labs tend to overestimate how much phosphorus (P) is needed and underestimate how much potassium (K) is needed because turf can get P out of the soil easier than crops but tests are still based on crops.

He has rarely seen a P deficient soil but often finds N or Iron (Fe) deficiencies affecting plant health.

Potassium is a mystery element and although grasses use and need a lot of it not much is known about what it does in the plant. We do know it is needed for stress control and basic plant functions.

Dr. Christians expressed it is rare to see a true calcium (Ca) deficiency but it is



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common for sales personal to push Ca even if not needed. He also believes if you do need Ca use the least expensive product because any others are a waste of funds.

After lunch and networking discussions regarding the long winter and lack of spring so far the annual spring business meeting was held to look at what is going to happen in 2014 and recap 2013 for the association.

Reports of Officers and committees went quickly. The schedule is done for events in 2014 and can be found on page 25. Financially the association entered 2013 in good condition and exited the same. The only downfall is interest on the savings or bonds is near zero.

The board of directors will participate in a strategic planning session with John Miller and Steve Randal of GCSAA in

March. It has been quite a few years since the last one and a good time for the WGCSA leaders to refocus and reinforce association priorities.

The meeting ended with hopes for a great 2014 golf season.



Monroe Miller congratulates Brad DeBels for winning the Monroe Miller Literary Scholarship for the best student written article in The Grass Roots. Brad won for his article Surviving a Icy Winter in the March/April 2013 issue.



25 Year Recipients David Brandenburg, Rolling Meadows Golf Course and Jim Van Herwynen, South Hills Golf and Country Club

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