NEWS FROM
VERDE-CAL®
Products of **AQUA-AID, INC.**

Fourth Quarter
2011

Miller's Miscellaneous

It is hard to believe I am already writing the last quarter newsletter for the year 2011. The year has really flown by.

In this quarters newsletter you will find great articles to help you plan for the use of VERDE-CAL now and in the future. Using Ice Melt products can damage turf if the salt runs onto adjacent turf areas. Read how to prevent extensive damage by using VERDE-CAL G.

Planning for next year??? Read the article regarding Summer Patch and the practice of acidifying the soils to help prevent this turf disease.

We get questions quite often regarding high calcium levels in soil and how it relates to CEC. This article will help you finally understand how these two factors relate.

I have also pulled one of my favorite articles from the past and included it in this issue. Please look for the article about rebuilding carbohydrates and root systems. Great information this time of the year.

And lastly, news from around the country. Read about the different regions and how the turf and people fared during this year.

I hope this newsletter provides you with useful information. We strive to provide education while showing you where our products can fit in to any agronomic program.

Special Interest Articles:

Ice Melt Damage to Turf: How to reduce the damage next spring

We are quickly approaching that time of the year when we begin to think about winter and preparation for snow and ice. Over the years, we have heard from many of you, about how well VERDE-CAL G will work to reduce the damage of ice melt product usage in and around turf areas. When used properly, VERDE-CAL G will allow turf to survive or recover better in these areas of high salt usage. Most of the time, damage is greatly reduced to the point where sod/seed is not needed. The turf will handle the excessive salt concentrations mainly due to the ability of VERDE-CAL G to effectively leach the harmful salts beyond the majority of the root zone. Having a penetrant along with the thCa allows VERDE-CAL G calcium to release and move through the soil profile. Volumetric release is key here to over-riding the harmful salt buildup.

The result: Far less damage and easier recovery in the spring.

Here is the program and how it works.

First, apply 10 lbs per 1000 sq ft of VERDE-CAL G to the areas you expect to receive the salt runoff or overage of salt application. Many times the property manager will already know where the damage is from prior years of seeing the damage. Apply the VERDE-CAL G and allow it to move into the soil. This should be done prior to the first snow or first ice melt application.

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"Friendship either finds or makes equals."
Pubilius Syres

Ice Melt Damage continued...

Upon spring thaw, or the first time you can gain access to the same area of treatment, apply VERDE-CAL G again at the same rate. Two applications should be plenty, unless further Ice Melt product is applied.

Comments we have heard over the years are that this definitely works. Damage is either eliminated or greatly reduced to the point where it is not an "eyesore" in the spring and repairs (if needed) are quick and inexpensive.

Minimal damage due to the use of VERDE-CAL G to the turf adjacent to where Ice Melt Products may be used.

AcidipHy and Its Uses:

AcidipHy has been in the market now for three years. We have seen it used in many ways. Originally developed as a tool to use with poor water quality to amend soil and condition soil solution. Doing this will enable the plants growing to be healthier and stronger all while aiding in a balanced soil.

AcidipHy uses are as follows for specific turf grasses.

Warm Season turf and ornamentals:

- **Lower pH**
- **Treat bicarbonates**
- **Treat high sodium**
- **Fertility enhancer**
- **Strengthen turf to withstand stresses**
- **Color**
- **Drainage in tight soils**

Cool Season Turf and ornamentals:

- **Lower pH**
- **Treat Bicarbonates**
- **Treat high sodium**
- **Fertility enhancer**
- **Strenghten turf to fight against disease pressure.**
- **Color enhancer**
- **Drainage in tight soils**

Interestingly enough, the benefits are the same regardless of the turf type or plant type. If your soil has issues, AcidipHy can be a part of the solution.

A recent TurfNet article tells of one superintendent's battle with disease, and within the article, you will see where AcidipHy can fit in very well. We hope that while you plan next year's programs with your customers, that you will consider using AcidipHy.

Related Article:

TurfNet
August 2011
Pat O'Brien
Hyde Park Golf and Country Club

SUMMER PATCH

http://www.turfnet.com/TBA/082311/index.html

"The greatest discovery of my generation is that human beings can alter their lives by altering their attitudes."
William James

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How to Figure CEC:

In many parts of the United States, and other parts of the world as well, turf managers deal with calcareous soils. These soils are very high in unavailable calcium and very low in other essential nutrients when reading a soil test. Many of these same soils experience different CEC levels. CEC simply defined: a measurement of the soils ability to hold nutrients (Cation Exchange Capacity). Typically (but not always) a sandy soil will have a low CEC, while a heavier soil, perhaps a loamy, soil will have a higher CEC. Many times we are asked: "What is the best CEC to have?" And my answer is usually that there really isn't a perfect CEC. Rather CEC dictates the management strategy you should prescribe for the specific soil type. You should take many things into consideration when evaluating a soil and a management plan with regards to CEC.

Such as:

- ✓ Soil type
- ✓ Organic matter
- ✓ Turf Type
- ✓ Drainage
- ✓ Purpose of area
- ✓ Cultural practices

Typically, CEC immediately dictates potential problems. Many times a high CEC will mean less drainage, more compaction, and fewer nutrients available to the turf. A lower CEC many times dictates less nutrient holding, better drainage and sometimes less compaction. Please understand that there are many other factors involved, such as weather and cultural practices that can change the conditions caused by either low or high CEC.

When determining what the CEC of a soil is, the soil lab utilizes the following information. Calcium, magnesium, sodium and potassium measured in parts per million or as milliequivalents per 100 grams of soil. These numbers or measurements are divided respectively as follows:

Calcium ppm divided by 200.

Magnesium ppm divided by 120.

Potassium divided by 390.

Sodium divided by 230.

The sum of these numbers is then added to the EA (Exchange Acidity) to determine the CEC of your soil. The EA is a figure determined by cross referencing the hydrogen and aluminum.

The reason why Calcareous soils sometimes dictate a very high CEC is because the Calcium ppm is usually the highest number of the four cations used to determine CEC. If the soil is calcareous, the CEC will be much higher than expected. Many times we see this with a sand based soil. If the sand used is calcareous sand, it will throw off the CEC due to this giving it a higher than expected CEC value.

The reason to understand how CEC is determined is because many times in calcareous situations, an untrained interpreter of the soil test will base many things on a high CEC. Since higher CEC's many times relate to tight soils, this would not be the case in a sand based soil with a calcareous source of sand. Even though the test may read a high CEC, the soil will still show all the signs of a low CEC. Thus certain management practices and fertilization will need to be adjusted to relate to the actual soil conditions.

CEC is a topic of much discussion during our educational programs. To fully understand it is important. Especially when CEC leads to difficulties with nutrient availability. Remember to consider all the factors involved with soil when determining a management program. CEC is an important part of soil, but still part of a much larger picture.

"You have to respect things for yourself before you can do them."

Michael Jordan

"We must learn to live together as brothers or perish together as fools."
Martin Luther King, Jr.

Riddle: It has 18 legs, is uniformed, walks and runs on grass and artificial turf and catches flies. What is it?

Answer on next page.

It's Been Quite a Year!

Another crazy year of weather here in the US and abroad. I have asked several folks from around the country to write up a short summary of the summer and golf season in their particular region.

I hope you enjoy each response.

Riddle answer:

A Baseball Team

"To succeed in life, you need three things: a wishbone, a backbone and a funnybone."
Reba McEntire

Midwest Update: submitted by Craig Mylor, Tenbarge Seed

It has been a year of records here in the Midwest. Winter never brought us big snows, but brought many small events. Spring brought devastating and record breaking floods. Along with summer came the tremendous heat, and in some areas drought. Up until September, we have seen very few days below ninety.

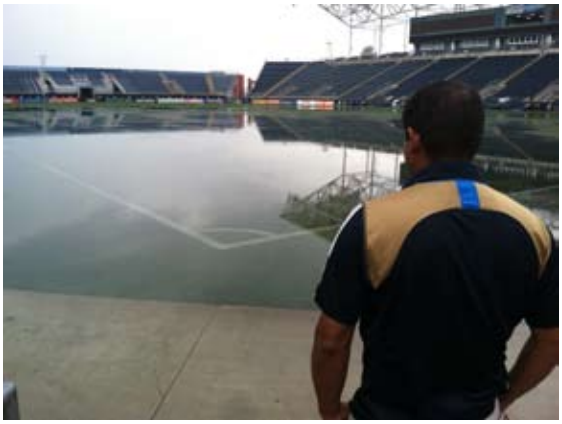
Despite all the challenges, many Superintendents found a way to survive. Pictured here is a boat on Evansville Country Club in Evansville, IN. Superintendent Matt Schrieber is leaving the maintenance shop with a load of none other than mowers to maintain the elevated areas of the golf course. It is safe to say that, we are all looking forward to a new, yet uneventful year.

Northwest Update: submitted by David Phipps, Stone Creek Golf Club, Oregon City, Oregon

The Northwest has the reputation of being a wet place to live, and through much of the winter that is definitely the case. But what many people don't realize, the rain is scarce between July and September. Aside from a very wet spring, the summer turned out to be quite nice. The temperatures were moderate through July, not exceeding 90 degrees until we hit August. By the time we were in the warmer temperatures, the ET's were so low that we were never under any sort of extreme conditions. From what I have heard, most NW golf courses have experienced the same conditions. My heart goes out to all those affected by the extreme weather conditions in other parts of the country. I am feeling quite lucky to be managing a golf course in such a moderate climate.

As the season winds down, September has proven to be a perfect month for the fall aerification. Golf courses have been enjoying some prime aerification weather and are seeing their courses recover in record time. Many are getting a head start on their fall projects and should be ready for whatever Mother Nature sets forth this winter.

Rain, Rain, Rain: submitted by John Torres, Philidelphia Union Stadium



This picture pretty much summarizes the season we've had to deal with, including a total of 20" of rain in the month of August, surpassing the record previously set at 12"! To be honest, I can't even remember the last time I had to set the irrigation to run for the grass outside of the stadium, in native clay. To date this season, our stadium surface has flooded in this type of manner four times but is able to quickly drain within a one to two hour period, mainly due to our root zone of 97% sand and 3% Organic. Luckily, the downpours we've received have not forced us to cancel or postpone any games or events. On one occasion last year in July, we received two inches of rain in one hour at 2 p.m. and successfully played an international friendly at 8pm the same day. The all-mighty Hurricane Irene that the East Coast prepared so drastically for, including ourselves at the stadium, led the Union administration and Major League Soccer to postpone a game scheduled to be played on the exact day of Irene hitting Philadelphia. Very minor damage occurred to the building itself and the only damage that occurred to field was blue paint chips blown in from an unknown object? Even with the heavy amounts of moisture our field has received, the only detrimental cause so far has been a thin film of algae building on the top surface of the soil.

As if the weather is not challenging enough, we have the ever-so-long MLS schedule that runs from mid-March through November, and extra events such as rugby, lacrosse, and college football! To make matters more complicated, PPL Park is located on the northern end of the transitional zone, where we're making our best attempt to successfully grow "Patriot" Bermuda over-seeded with Perennial Ryegrass. With the many challenges my two man crew of, Assistant Weston Appelfeller and myself, we've still managed to keep a well maintained surface for the Philadelphia Union as they compete to stay alive in the playoff run.

"Whatever you are, be a good one."
Abraham Lincoln

International Update: submitted by Masaki Sato, Axxion Corp, Tokyo, Japan

After 3.11 earthquake and tsunami, the golf industry as a whole suffered from "refrain mode" which resulted in reduction of revenue for several months. Tokyo Electric Power Company's nuclear power plant facilities are located in Fukushima prefecture, where several courses in the evacuation zone were forced to stop operation. From the radiation point of view, Tokyo was not affected as it is 270 distant from the nuclear facilities. Yet, the shortage of electricity supply obviously affected the manufacturing sector and our living through "routine black out" in greater Tokyo area. People in the area created a habit of saving electricity and all the industries came to cooperate to save electricity. The stations are darker than before, the escalators are not in operation from time to time. This, however, lead ourselves to examine the frivolous conveniences in our life style.

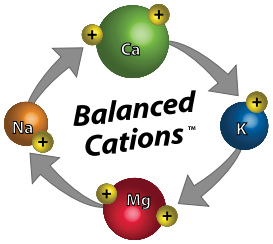
After summer, people in Japan are coming back to normal life and the east side of Northern part of Japan which were most affected by Tsunami also have shown slow but gradual recoveries. The total budget for the recovery plan is to be approved soon. When the fund becomes available to the affected regions, the reconstruction works will surely stimulate the local economy.

The golf industry has been showing steady recovery through summer.

We are hoping the recovery & stimulus package will give strong impact to the region's recovery.

"When one door of happiness closes, another opens; But often we look so long at the closed door that we do not see the one that has been opened for us."
Helen Keller

"Don't ask yourself what the world needs; ask yourself what makes you come alive. And then go and do that. Because what the world needs is people who have come alive."
Howard Thurman



If you need more literature, please request some to be mailed to you by contacting one of the following:

maryanne@aquaaid.com
scott@aquaaid.com

Specify how much you need and where to mail it to.

Aerification Time! Seeding, Fall Recovery. . .

It seems like every year we write the same thing regarding aerification and the beneficial use of VERDE-CAL products. However, it seems as though each year passes by and aerification starts sooner than the previous year. Maybe this is because the new grasses withstand heat stress better. Maybe it is because recovery time is longer for turf if you start the process earlier. Regardless, we want you to be ready to include VERDE-CAL products with this very necessary management practice. Especially with inter-seeding, overseeding or reseeding/sprigging your greens/fairways/roughs. The use of VERDE-CAL Products can make this recovery or re-establishment period run and progress much smoother. It is the available nutrients that will have a big effect on the new turf. Better uptake results in better stronger turf. Quicker establishment is critical since this is a "one chance" situation to bring things into playable condition before either the snow birds arrive, or winter conditions set in. Remember too, when using quick release products, it is very important to include the minors as well. The very important minor elements are scrubbed out of the soil by the nitrates, and the result is a weaker root system. VERDE-CAL K, K^{PLUS}, and NKG are good fits here along with complete fertilizers you also have. Keep a good balance of all the key nutrients to ensure the best results for your property.

The time to talk up the VERDE-CAL™ products is now.

Selling the benefits:

- 100% available calcium.
- 1 to 4 or 5 reduction compared to lime or gypsum.
- Less material to handle.
- Less labor to apply.
- Less inventory to deal with.
- Quicker to react.
- Very good results leaching high sodium and magnesium.
- Very good results raising pH quickly.
- Rates are either 5 lbs per 1000 ft. sq.
- 12 lbs per 1000 ft.sq to cure a problem.

And remember, the combo products - VERDE-CAL K or K^{PLUS} - that has either VERDE-CAL or VERDE-CAL G included in them. VERDE-CAL NKG is a great aerification time product utilizing potassium nitrate along with VERDE-CAL G.

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