

# NEWS FROM **VERDE-CAL**®

Fourth Quarter  
2012

Products of **AQUA-AID, INC.**



## Miller's Miscellaneous

Fall is here, and along with the change in weather patterns come changes in your agronomic practices. For many of you it is time for aeration or seed season.

For others you may be "dusting off the covers" for the greens! Regardless of where you are located this is the time of year when VERDE-CAL products should be included in the preparation for fall/winter.

Your soil preparation now allows

a good finish to this season. And, even more importantly... prepares your soil for a better start next spring! It is not too late, even in the northern regions! Check your soil tests and amend properly with one of the VERDE-CAL products.

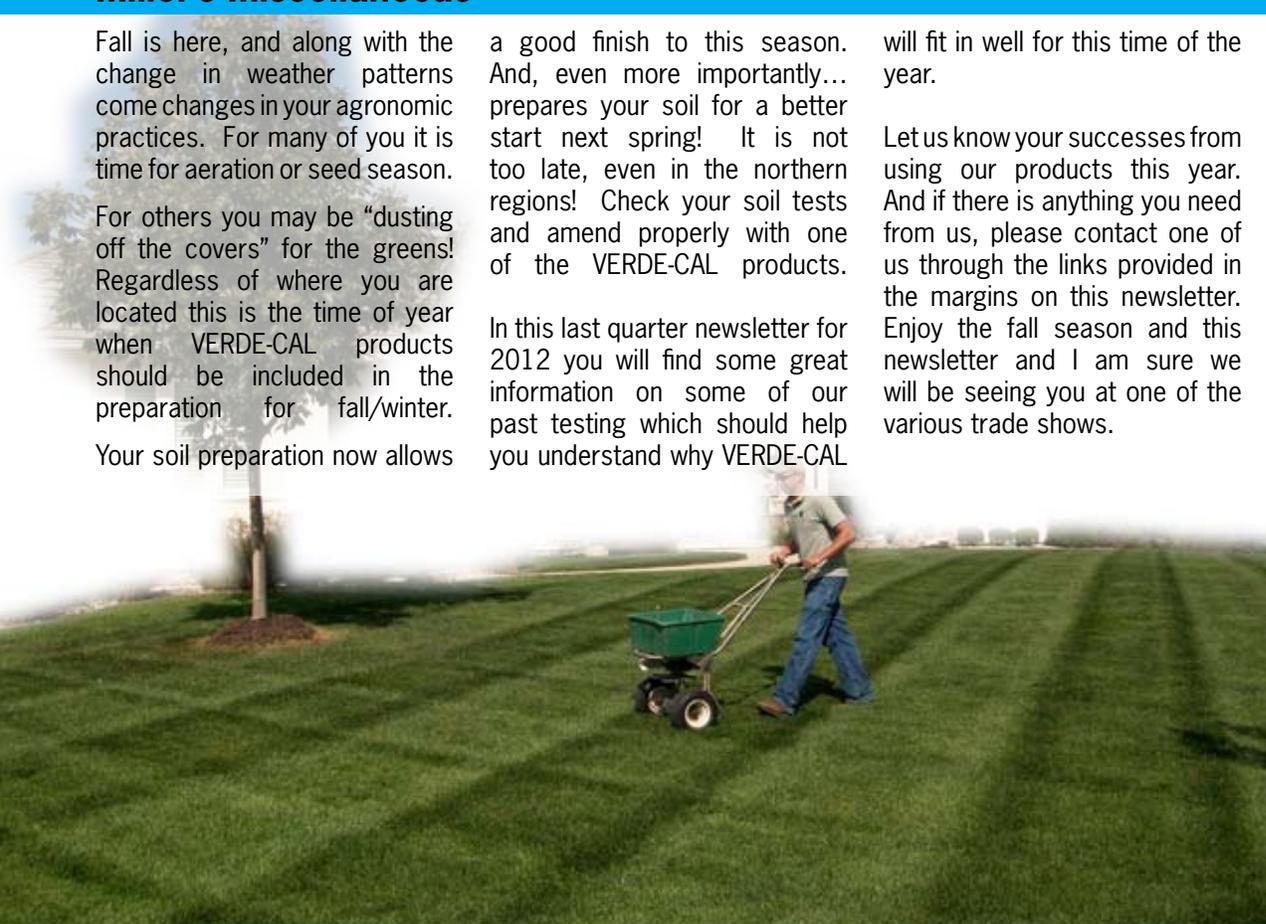
In this last quarter newsletter for 2012 you will find some great information on some of our past testing which should help you understand why VERDE-CAL

will fit in well for this time of the year.

Let us know your successes from using our products this year. And if there is anything you need from us, please contact one of us through the links provided in the margins on this newsletter. Enjoy the fall season and this newsletter and I am sure we will be seeing you at one of the various trade shows.

### Special Interest Articles:

- Miller's Miscellaneous.
- Test Data on VERDE-CAL
- Fall - A Great Time For VERDE-CAL
- Prevent Ice Melt Damage to Turf
- Lime: Truths and Uses



## Test Data That Benefits Fall VERDE-CAL Use:

Unfortunately we see a lot of damage about this time of the year. What kind of damage? Not necessarily turf damage, but pretty serious soil damage that leads to major turf problems. What we mean is we see incredibly imbalanced soil tests that have been taken after the damage is done to the turf. Here in the Eastern half of the US, and a good part of the western half in 2012, there have been three pretty extreme spring/summer seasons in a row. This extreme weather, drought, either too much rain

or not enough, and excessive heat can lead to soil problems and imbalance of key nutrients. Without proper amending of the soil from time to time during the year, salts, such as sodium will begin to wreak havoc on the soil structure. This leads to poor rooting, poor turf growth, and problems on the surface that can resemble disease or wear stress in many cases. Unfortunately for the turf manager, it is usually the soil test that comes last in the chain of curative events to fix problems experienced on top of the

ground. As you can see from the test data published below, VERDE-CAL products can aid in:

- Reduced compaction
- Better oxygen/water ratio
- Lowering harmful salts
- Improved Root density
- Heat stress reduction
- NPK uptake

All of these things are very important all year long and help with the overall success of your agronomy programs.

**Jim Miller**  
Sales Manager  
843-241-5717

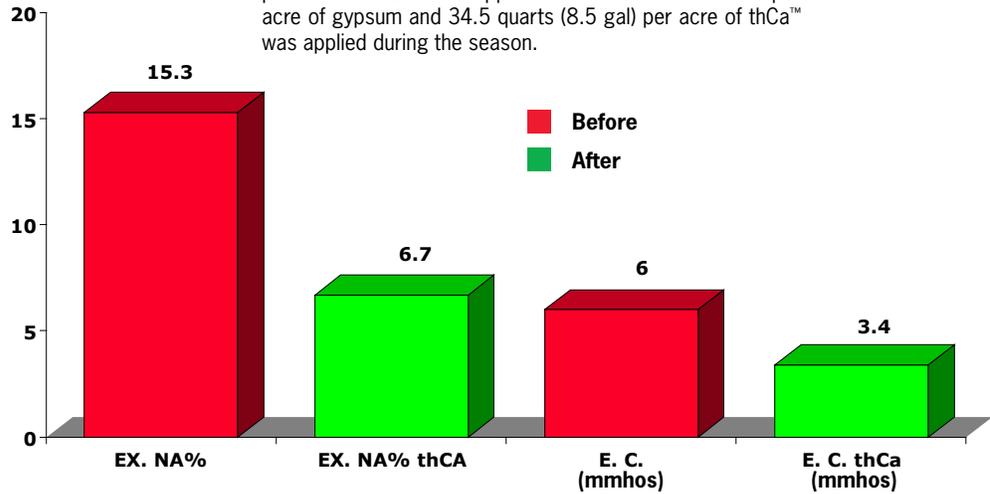
**Bo Phillips**  
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210-382-4079

**AQUA-AID, INC.**  
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**Test Results For VERDE-CAL and thCa™:**

**Effects of thCa™ and Gypsum on Exchangeable Sodium and Electric Conductivity**

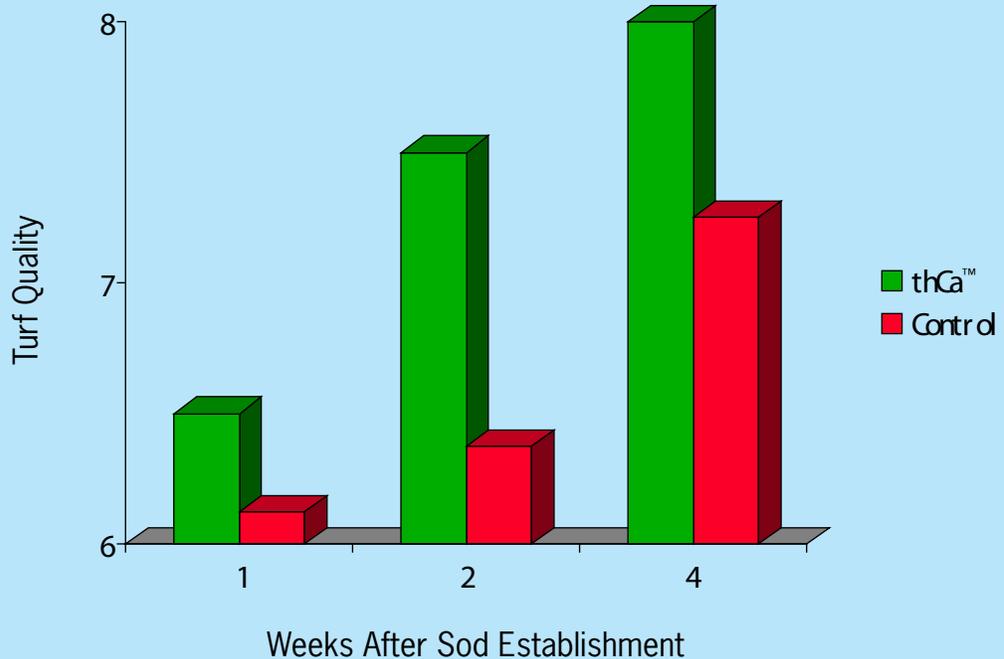
55 lbs per acre of gypsum by irrigation mixed with 3.5 quarts per acre of thCa™ in 9 applications. A total of 534 lbs per acre of gypsum and 34.5 quarts (8.5 gal) per acre of thCa™ was applied during the season.



“Everything you don’t know how to do, you have to pay for, so my father told me to learn everything.”

Anonymous

**Turf Quality During Sod Establishment**  
(Creeping Bentgrass)



“Before you embark on a journey of revenge, dig two graves.”

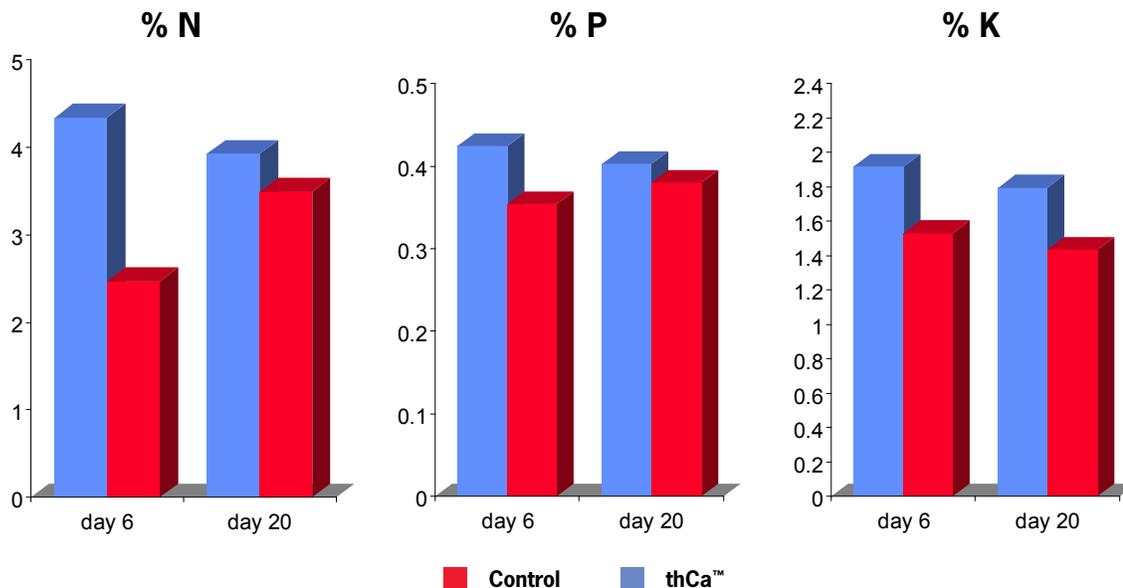
Confucius

Bingru Huang, Dept. of Plant Pathology, Rutgers University, 2002.

**Test Results cont.**

**Shoot Nutrient Content  
at 6 and 20 Days of Heat Stress**

(Creeping Bentgrass)



Bingru Huang, Dept. of Plant Pathology, Rutgers University, 2002.

“By failing to prepare, you are preparing to fail.”

Ben Franklin

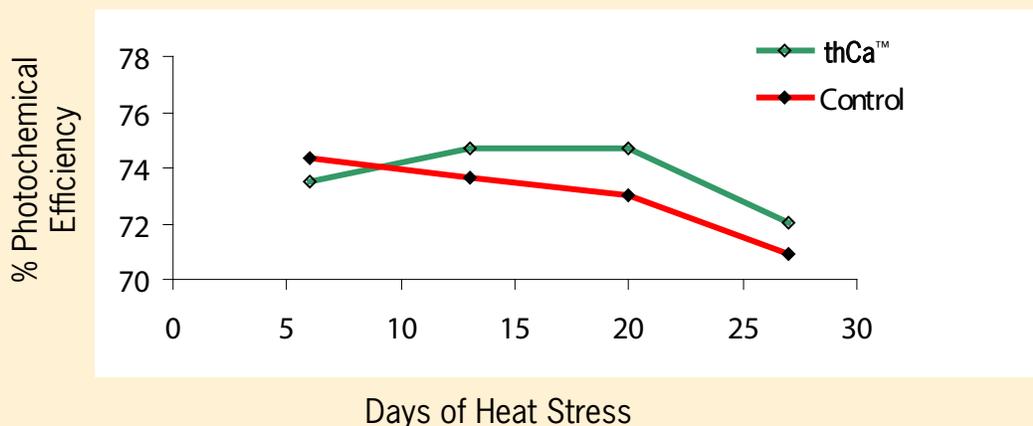
**RIDDLE:**

What 9-letter word remains an English word each time you remove a letter from it, until it becomes a 1-letter word? (Hint: You can remove letters from any part of the word.)

Answer on pg 5.

**Leaf Photochemical Efficiency Under Heat Stress**

(Creeping Bentgrass)



Bingru Huang, Dept. of Plant Pathology, Rutgers University, 2002.

“I have never let my schooling interfere with my education.”

Samuel Clemens

## Fall is a Great Time for VERDE-CAL:

At time of AERATION –

The practice of aeration to high quality turf areas is needed for several reasons. Relief of compaction, improves the rate at which water moves into a soil, and improves the amount of space available for Oxygen (air) to penetrate the soil, which is critical for root growth and ultimately, plant health. Plus, grass roots will more easily extend into the loosened soil and come in contact with newly available nutrients. An aerated soil will also promote a healthy population of microorganisms that breakdown thatch. Left unchecked, a spongy layer of thatch can block water and nutrients from reaching your soil. While the soil is open, it also gives us a great opportunity to add SOIL AMENDMENTS back into the soil profile. Soil amendments and soil conditioners are basically anything that you can put into the soil profile that is going to improve the soil environment as a whole. A great place to start with soil amending is to have a soil test done beforehand and find out your base saturation levels of the 5 basic cations: Calcium, Magnesium, Potassium, Sodium, and Hydrogen. Find your deficiencies and add them. *Soil amending is more about soil health and balance then it is about plant fertility. A healthy soil will provide plant nutrition. However, a straight plant nutrition approach does not provide or make a healthy soil!*

**Rule #1 - If you punched it, put something better back in it if possible.**

At time of SEEDING –

Since you have opened up the soil up with an aeration (see above for benefits), all those holes also create a great seedbed prepped area, so might as well throw some seed down. Seeds get into the freshly punched holes and are now surrounded by rich, loose, well-drained soil that allows that new seedlings crown to be protected from traffic. Now basic fertility rules here would be to put down the correct amount of some type of a fertilizer that contains Phosphorous (usually a starter fertilizer). Phosphorous is the nutrient that promotes seed establishment. Calcium is also critical at this stage of growth. It promotes strong cell wall formation, which the newly emerging seedling is producing at an extremely rapid rate as it establishes.

**Rule #2 – Nobody likes a limp, wimpy seedling. Make the establishment as strong as possible as it grows. Just like mom always said “Drink your milk.”**

Calcium Concentration = Many Benefits

Calcium plays dual roles in both soil health and plant nutrition as I have given examples of both above.

In the soil, Calcium is the largest most dominate cation present. It rules the soil realm and can bully its way around the soil removing weaker cations at will. In some cases this is a good thing, in some cases it's a bad thing. That's why a good accurate soil test is extremely important, and proper base saturation levels are so important. In the soil, it's all about plus' and minus', size, and weight of cations that create balance and proper conditioning of available and unavailable nutrients.

**Rule #3 – Do you know if you have a balanced soil? Take a soil sample and get it tested to know where you stand.**

In the plant, Calcium plays the role mostly of a Mason (bricklayer). By this I mean it builds cells (rooms) one by one, brick wall after brick wall. After the room is built (cell wall), the plant fills the room with all the things a cell needs to work properly (cell membrane, nucleus, vacuole, chloroplast, cytoplasm, mitochondrion, etc.). Then it starts on the next room. Photosynthesis and nitrogen inputs create the energy to power all of this bricklayer's hard work. But there is a catch; Calcium concentration levels in the plant regulate many things inside of the plant. As a matter of fact, calcium involves nearly all aspects of plant development. It can regulate carbohydrate building and storage, nutrition and water uptake and distribution, rooting cycles, top growth cycles, repair from damage or stress, and enzyme triggering. Basically Calcium (the Mason) controls how and at what rate rooms (cells) get built and how fast it can fill them up. It controls both space and time. If there are adequate Calcium levels in the plant and too many rooms are being built, it will speed up the metabolism of the plant and fill the rooms faster. If there is a Calcium deficiency, the plant will slow down the metabolism of the plant to catch up on laying bricks to build walls to hold everything.

**Rule #4 – Why does Calcium get neglected and N,P,K gets all the attention? Like Rodney Dangerfield said, “No Respect”.**

**AVAILABLE CALCIUM SOLVES PROBLEMS**

“An eye for an eye, only makes the whole world blind.”

Mother Theresa

Go to <http://www.verde-cal.com/west/pdf/testing-brochure.pdf> to access a useful guide for:

- Paste Test reading
- Standard Soil Test reading
- Water test reading

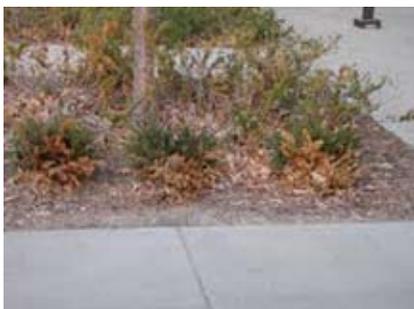
“When the power of love overcomes the love of power, the world will know peace.”

Jimi Hendrix

## Prevention of Turf Damage Due to Ice Melt Product Use:

We have experienced such great feedback from the Ice Melt product damage program that we wanted to include it again here. It is critical that you follow the program as closely as you possibly can to ensure great results later in the spring.

Part of our service to our customers is reminding them of practices such as this. Our customers are faced with many daily challenges and they may



Plants damaged on one side from salt accumulation from ice melt products.

not always remember to think of things such as damage prevention. So if you haven't already brought it up, why not

do it now?

The program works as follows for best results:

Apply VERDE-CAL G at a rate of 10 lbs per 1000 sq ft prior to the use of Ice melt products. Then, follow up in the spring with another 10 lbs rate upon snow melt. Do not water in the product. Just spread it and forget it. Upon warmer

soil temperatures, there will be a significant quality improvement to the effected area where salt products have historically damaged the turf. Remember too, that salt damage from these products also effects plants in ways that are going to lead to poor aesthetics in the spring and summer. For example: on ornamentals, the plant will die or be severely damaged on the side receiving the most ice melt product applied. This results in a plant that must be dug up and replaced.

Salt accumulations could take years to build up on areas adjacent to the application sites. Rainfall will help move salts,



A great example of turf damage due to the use of Ice Melt product runoff.

but then you also deal with the poor soil conditions that result. Because of this, it is best to just go ahead and map out the areas of expected damage and treat and prevent. Keep your customers turf and ornamentals looking their best.

Access the link in the margin to download the pdf so you can share the program with your customers. It works and really helps.

[Click here to download our VERDE-CAL G Ice Melt Damage literature.](#)

"We are all born ignorant, but one must work hard to remain stupid."

Ben Franklin

### RIDDLE ANSWER:

Startling  
Staring,  
String,  
Sting,  
Sing,  
Sin,  
In,  
I

**FEED THE SOIL AND THE SOIL  
WILL FEED THE PLANT.****Lime: Truths and Uses**

Being an age old soil amendment, lime has undergone major scrutiny over the years. With regards to solubility and availability, lime must undergo major requirements to become justifiable as a so-so soil amendment. These requirements are: Soil moisture, oxygen, soil and air temperature. Microbial activity helps as well. All the conditions that lead to oxidation. How well has the lime been refined and processed. Many think pulverized lime is the best. This type is very inexpensive, but is it the best form? Can you incorporate it into the profile of the root zone? Aeration is not an incorporation. In fact in nearly all cases, pulverized lime is the worst thing you could apply to existing turf. Pelletized lime is no better. Incorporation must be implemented as well as optimal conditions to release. Still today, we see this amendment being used at the wrong rates and wrong times. For pH increase, lime has much more data to support its use and corresponding rates to abide by vs that of gypsum. A buffer index helps greatly to understand the proper rates to use. The rule of thumb for lime: To raise pH effectively, there needs to be at least 150 lbs. per acre of available calcium in a carbonate form to even begin the conditioning of the soil. Why is this? Such a high rate is needed because the calcium in lime must first oxidize in the soil to release. This could take years. It must also feed the plant that is growing there. The turf or ornamental plant may need

4 to 5 lbs. of calcium per 1000 sq.ft. per year for a healthy diet. Lose any of this to insolubility and the plant's calcium benefits: stronger, more rigid cells, better water uptake and translocation, movement of nutrients, etc... suffer. pH will not effectively increase as expected. Rates for lime, regardless of whether it is dolomitic or hi cal, start at 25 lbs. per 1000 sq.ft. for maintenance purposes. This should be done once or twice per growing season. For raising pH, 48 lbs. per 1000 sq.ft. Regardless of the pH, adding soil applied calcium (along with foliar) is very important for the best plant/soil growth and health. Still we see lime either not being used at all, or being used at such low rates that there is no chance to do any benefit to the turf or soil. VERDE-CAL being 100% soluble and 100% totally available to the plant and soil makes the task of amending the soil easier and much more effective. We do this by reducing rates and providing the needed availability of the correct calcium source to modify or maintain proper calcium levels. 5 lbs. per 1000 sq.ft. for maintenance. Do this two to three times per growing season. 12 lbs. per 1000 sq.ft. to raise calcium levels and thus affecting pH. Do this once, and test again, to justify another application. Remember, it is not the total pounds of product applied that count, it is the total pounds of available and soluble nutrient that gets the results.

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

[maryanne@aquaaid.com](mailto:maryanne@aquaaid.com)  
[scott@aquaaid.com](mailto:scott@aquaaid.com)

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

**VERDE-CAL® Time !!!****Why is Verde-Cal important now?**

- Goes perfect with core aeration
- Helps promote healing of stressed turf  
(University backed data)
- Promotes rooting  
(University backed data)
- Carbohydrate restoration
- Over-seed or inter-seeding benefits
- Soil amending

During your busy day, please take a moment to include VERDE-CAL Products in your sales discussions.



800-394-1551  
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