

# NEWS FROM VERDE-CAL®

Third Quarter  
2013

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



## Miller's Miscellaneous

Summer time is here for all of us and what a crazy weather pattern most of the country has been in this year. In the southeastern/northeastern and much of the Midwestern US, rain has been the main issue. Where the last four years we could not get enough.... Now it is here, it seems, to stay for a while.

This 3rd quarter issue is short and sweet but packed with great

information.

This year, more so than all others, the issue of Aluminum has come up a lot. I am including some great information and links to help you better understand what Aluminum is and what it can do to your soil and turf or ornamentals. I have seen firsthand this year Aluminum toxicity, and have seen it cured with VERDE-CAL.

Also in this issue is one of my favorite articles from many years ago. Hard to believe this newsletter is celebrating its 7th year!

You can visit us at [www.verde-cal.com](http://www.verde-cal.com) to see and catch up on all the newsletters from years past. Many newsletters are now titled so you know what the content is before you open them up. Enjoy.



## The Solution to the Solution Lies Within the Solution:

This article is one I have pulled from the archives. It was originally written in 2009 and still holds very true today.

As I see more and more superintendents realize success from the use of VERDE-CAL Products, it has come to their realization that their money/nutrients have been underneath their feet all along. With comments from better rooting to better color... these responses can't be true unless the available calcium from VERDE-CAL was releasing tied up and unavailable nutrients already in the soil.

The old adage: "You feed the soil, and the soil feeds the plant", is only half true. As in the previous article, what actually feeds the plant is the "solution" of available nutrients within the soil. So feeding the soil is only a part of the whole picture. What you are feeding and how and when you are

feeding is really the big picture here.

Nutrients should be balanced and in ample enough quantity to actually create a solution of availability. The plant will not intercept the solution, the solution must intercept the plant, or plant roots.

So look at your fertility program! Are you foliar feeding when the plant/soil needs solution building? This occurs typically in the spring, winter and fall in nearly all regions. Summer can be included as well in cooler parts of the world where turf can absorb nutrients throughout the day.

When turf is waking up and/or carbohydrate reserves are building up or root development is occurring, this is the time for soil solution management.

Why?

### Special Interest Articles:

- Miller's Miscellaneous
- The Solution Within the Solution
- The Memorial 2013
- Aluminum in Soil
- Trivia Question
- Hurricane Sandy Update

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Go to <http://verde-cal.com/east/pdf/verde-cal-info-sheet-east.pdf> to read testimonials from users of VERDE-CAL Products.

*"They say that golf is a lot like life. But don't believe that. Golf is far more complicated than life!"*

*Pro Golfer,  
G.Dickenson.*

*"You are never too old to set another goal or to dream a new dream."*

*C. S. Lewis*

## The Solution cont.

### Why!?

Because at this time, it is critical to the plant for strength and chances of surviving harsh conditions. Feeding the soil solution is done by pounds per acre (granular) not ounces per thousand (foliar). Plant diet and soil needs must be taken into account. Plant needs for proper growth and carbohydrate/root and strength start with: Nitrogen, potassium, calcium, magnesium/phosphorus and sulfur, and in this order! Nitrogen is one that can be manipulated, and usually is foliar supplied. Nitrogen is however still very important to the carbohydrate reserve supply. So remember to use some granular. Typically ammoniacal nitrogen is used to build the carbo's. This should be done more in the fall and winter months to avoid spring excessive growth.

VERDE-CAL Products will allow you to feed the soil solution by releasing calcium into the soil profile. Also, by the use of our thCa™ organic acids, the "volume" release of calcium creates availability of other most essential nutrients: K, Mg, Mn, S and P. This makes the plant healthier and stronger. Using VERDE-CAL Products in the spring and fall, and typically once or twice per summer, gives a nice soil solution benefit. You can see it in the turf by its response. In hotter climates another application may be needed due to the longer growing season.

When you feed the solution, you feed the plant and the plant grows better!

## The Memorial Tournament Volunteer 2013 by Bo Phillips

Several weeks ago I had the opportunity to be a volunteer at The Memorial Tournament at Muirfield Village Golf Club in Dublin Ohio. This tournament always brings in great golfers from around the world. I'm thinking two reasons why: 1. It's Jack's course and Jack's tournament. Who doesn't want to play! 2. The U.S. OPEN will be in a couple of weeks and it's a great practice (maybe final) round before a major.

The course was in great shape. The greens were fast and smooth, fairways were pristine, and the bluegrass rough was a thick, dense, dark shade of green. The only thing that could throw a kink into things was the weather. If you watch a lot of golf and can remember The Memorial Tournaments of the past, then you know that weather is probably going to be

a factor in Ohio this time of year. This year was no different!

So here is the weather and the schedule it caused:

Monday – morning showers.

Tuesday – morning showers.

Wednesday – **Pro-am** (shotgun) and late practice rounds, Clear.

Thursday – **Round One**, Clear.

Friday – **Round Two**, afternoon thunderstorms, play was suspended.

Saturday – **Round Three**, finished round two and three, mostly cloudy – evening showers.

Sunday – **Final Round**, Early am showers but clear the rest of the day.

With an international staff from the United States, Australia, Scotland, Ireland, and Canada, and volunteers from across the U.S.: OH, PA, NJ, NY, MI, KY, RI, FL, TX, CA. This truly was a sight to be seen. Everyone was always on the same page. Even when weather, start times, or even starting holes threw a hiccup into the mix. There was always a contingency plan for all outcomes and everybody did their job, regardless of regular morning or afternoon assignments. Some people may try to say it is very organized chaos. "WELL OILED MACHINE" is what I call it. When you get that many Turf Guys together that are really detail oriented, and ready to take ownership of their job assignments, no matter what is thrown at them. That's how they ROLL!

### The Memorial cont.

I would like to Thank the following people: Paul Latshaw Jr., Lucas Lownes, Matt Powell, Rich McIntosh and the entire MVGC crew (including Old Gregg) for allowing me to be a part of your crew for a week, and treating me like a brother...Chive on! Clay, Jed, Kevin, Brad, Mike, and Scott May Thanks for being there when that new 1/2 stimp advanced math in the early morning got to be too much.

All the other volunteers from across the country, It was a pleasure meeting you and hopefully our paths will cross again.

And last, but certainly not least, the staff at AQUA-AID for giving me the opportunity to do what I love for a living.

“Mistakes are always forgivable, if one has the courage to admit them.”  
Bruce Lee



“Even if you fall on your face, you’re still moving forward.”  
Victor Kiam

**Aluminum: Info to help you.**

*"Nothing ever becomes real till it is experienced."  
John Keats*

Much of the information in this article is re-written from a Spectrum Analytic article found on the web at: [http://www.spectrumanalytic.com/support/library/ff/Soil\\_Aluminum\\_and\\_test\\_interpretation.htm](http://www.spectrumanalytic.com/support/library/ff/Soil_Aluminum_and_test_interpretation.htm)

This year, we have seen more soil and paste tests revealing a higher than unusual aluminum (Al) count than in many of the past years combined. Why is this happening all of a sudden?

For many reasons, Al can begin to climb higher and higher and take the turf manager by complete surprise! As we have seen this year in several locations.

1. Lack of soil amending with available calcium
2. Poor sources of lime or gypsum
3. Lack of aeration particularly pulling cores
4. Storm damage to the soil. (such as those seen with hurricane Sandy)
5. Lack of incorporating lime or gypsum into the soil profile

Regardless of why the Al count has gone up, the end result can be pretty disastrous for turf and ornamentals.

There is good news and bad news when Al is considered:

The good news is that Al counts on the soil exchangeable test must climb very high before they are problem. On your soil test, Al will need to reach at least 1000 ppm before becoming a serious concern.

**The bad news, on the saturated paste test, very few plants will tolerate more than 1 ppm Al in solution.**

Aluminum Toxicity is something you may very rarely ever hear or experience. If you live in a region with higher pH's, you most likely won't ever see Al on your soil test, and you certainly will not need to put much thought into Al content in your soils. This is mainly due to the fact that Al only becomes available and more

exchangeable as soil becomes acidic. If your pH's drop down to the 5's or lower, you should pay special attention to the soil test counts and a paste test is highly recommended.

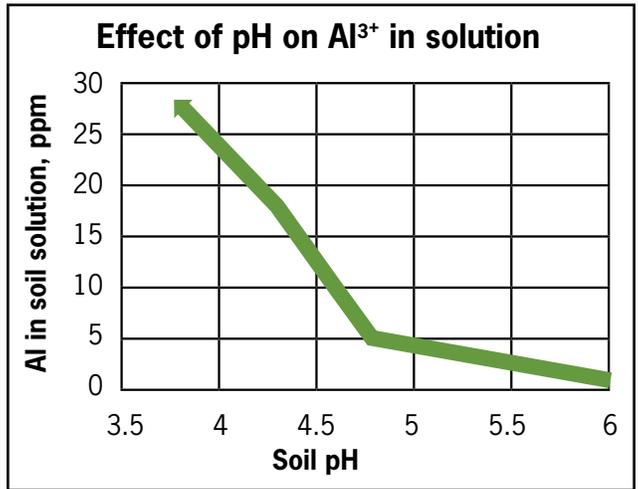
We have seen this pH drop several times already this spring/summer.

Superintendents report a "whitening" of the turf. Many times it happens in "pockets" of soil on heavier soil areas. On greens, it can occur on the entire surface since the soils are more consistent on greens or sandier soils.

Most research is done on crops

and very little has been done on turf. However, grains and corn are monocots, and this data we believe can be very consistent to what turf will tolerate.

Al+++ is the toxic form of Al. To know how much is present in the soil solution will involve a saturated paste test. Paste test



interpretation is provided for you in the margin of this article.

Al Toxicity. Al will shut down the root system and water/nutrients will stop entering the plant.

Aluminum toxicity reduces root growth	
Al in solution ppm	Cotton Root Length
0	6.3 in
0.25	4.33 in
0.50	3.15 in

Above ground symptoms usually are seen prior to knowing there is an Al problem. Above ground, the plant can look chlorotic. If tested, it will most likely show deficiencies of P, Ca, Mg, Mn and if undiagnosed properly, adding these elements foliarly will do nothing to improve the conditions.

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

*"Life is what happens while you are busy making other plans."  
John Lennon*

**Aluminum: cont.**

**Solution to elevated Al counts**

Because Al increases as soil pH becomes more acidic, the best solution is to find a quality calcium containing product and apply the correct amount.

VERDE-CAL Products are perfect for this situation.

The lack of available calcium is what caused the problem to begin with. VERDE-CAL or VERDE-CAL G at the high rates will immediately begin to correct the Al counts and drop them fast causing the soils to become more alkaline.

Immediate green-up will be experienced and the

turf or ornamentals will appear to have taken a breath of fresh air.

VERDE-CAL or VERDE-CAL G can be applied at 10 lbs per 1000 ft<sup>2</sup> to offset Al problems and begin to raise exchangeable calcium and break the bond of Al and hydrogen and flush them out of the soil.

Remember... there are many items on the soil test report that draw your attention away from pH and Al. Take the time to look at the Aluminum test. Know that it is or is not under control. VERDE-CAL Products fit right in perfectly and will cure this problem.

"All change is not growth, as all movement is not forward."

Ellen Glasgow

**True Trivia Question:**

Why is the element Potassium represented by the letter "K" ?

Answer on page 6.

**The Periodic Table of the Elements**

1 <b>H</b> Hydrogen 1.00794																	2 <b>He</b> Helium 4.003
3 <b>Li</b> Lithium 6.941	4 <b>Be</b> Beryllium 9.012182															10 <b>Ne</b> Neon 20.1797	
11 <b>Na</b> Sodium 22.989770	12 <b>Mg</b> Magnesium 24.3050															18 <b>Ar</b> Argon 39.948	
19 <b>K</b> Potassium 39.0983	20 <b>Ca</b> Calcium 40.078	21 <b>Sc</b> Scandium 44.955910	22 <b>Ti</b> Titanium 47.867	23 <b>V</b> Vanadium 50.9415	24 <b>Cr</b> Chromium 51.9961	25 <b>Mn</b> Manganese 54.938049	26 <b>Fe</b> Iron 55.845	27 <b>Co</b> Cobalt 58.933200	28 <b>Ni</b> Nickel 58.6934	29 <b>Cu</b> Copper 63.546	30 <b>Zn</b> Zinc 65.39	31 <b>Ga</b> Gallium 69.723	32 <b>Ge</b> Germanium 72.61	33 <b>As</b> Arsenic 74.92160	34 <b>Se</b> Selenium 78.96	35 <b>Br</b> Bromine 79.904	36 <b>Kr</b> Krypton 83.80
37 <b>Rb</b> Rubidium 85.4678	38 <b>Sr</b> Strontium 87.62	39 <b>Y</b> Yttrium 88.90585	40 <b>Zr</b> Zirconium 91.224	41 <b>Nb</b> Niobium 92.90638	42 <b>Mo</b> Molybdenum 95.94	43 <b>Tc</b> Technetium (98)	44 <b>Ru</b> Ruthenium 101.07	45 <b>Rh</b> Rhodium 102.90550	46 <b>Pd</b> Palladium 106.42	47 <b>Ag</b> Silver 107.8682	48 <b>Cd</b> Cadmium 112.411	49 <b>In</b> Indium 114.818	50 <b>Sn</b> Tin 118.710	51 <b>Sb</b> Antimony 121.760	52 <b>Te</b> Tellurium 127.60	53 <b>I</b> Iodine 126.90447	54 <b>Xe</b> Xenon 131.29
55 <b>Cs</b> Cesium 132.90545	56 <b>Ba</b> Barium 137.327	57 <b>La</b> Lanthanum 138.9055	72 <b>Hf</b> Hafnium 178.49	73 <b>Ta</b> Tantalum 180.9479	74 <b>W</b> Tungsten 183.84	75 <b>Re</b> Rhenium 186.207	76 <b>Os</b> Osmium 190.23	77 <b>Ir</b> Iridium 192.217	78 <b>Pt</b> Platinum 195.078	79 <b>Au</b> Gold 196.96655	80 <b>Hg</b> Mercury 200.59	81 <b>Tl</b> Thallium 204.3833	82 <b>Pb</b> Lead 207.2	83 <b>Bi</b> Bismuth 208.98038	84 <b>Po</b> Polonium (209)	85 <b>At</b> Astatine (210)	86 <b>Rn</b> Radon (222)
87 <b>Fr</b> Francium (223)	88 <b>Ra</b> Radium (226)	89 <b>Ac</b> Actinium (227)	104 <b>Rf</b> Rutherfordium (261)	105 <b>Db</b> Dubnium (262)	106 <b>Sg</b> Seaborgium (263)	107 <b>Bh</b> Bohrium (262)	108 <b>Hs</b> Hassium (265)	109 <b>Mt</b> Meitnerium (266)	110 <b>Ds</b> Darmstadtium (269)	111 <b>Rg</b> Roentgenium (272)	112 <b>Cn</b> Copernicium (277)						
58 <b>Ce</b> Cerium 140.116	59 <b>Pr</b> Praseodymium 140.90765	60 <b>Nd</b> Neodymium 144.24	61 <b>Pm</b> Promethium (145)	62 <b>Sm</b> Samarium 150.36	63 <b>Eu</b> Europium 151.964	64 <b>Gd</b> Gadolinium 157.25	65 <b>Tb</b> Terbium 158.92534	66 <b>Dy</b> Dysprosium 162.50	67 <b>Ho</b> Holmium 164.93032	68 <b>Er</b> Erbium 167.26	69 <b>Tm</b> Thulium 168.93421	70 <b>Yb</b> Ytterbium 173.04	71 <b>Lu</b> Lutetium 174.967				
90 <b>Th</b> Thorium 232.0381	91 <b>Pa</b> Protactinium 231.03588	92 <b>U</b> Uranium 238.0289	93 <b>Np</b> Neptunium (237)	94 <b>Pu</b> Plutonium (244)	95 <b>Am</b> Americium (243)	96 <b>Cm</b> Curium (247)	97 <b>Bk</b> Berkelium (247)	98 <b>Cf</b> Californium (251)	99 <b>Es</b> Einsteinium (252)	100 <b>Fm</b> Fermium (257)	101 <b>Md</b> Mendelevium (258)	102 <b>No</b> Nobelium (259)	103 <b>Lr</b> Lawrencium (262)				

*"The love of family and the admiration of friends is much more important than wealth and privilege."*  
Charles Kuralt

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.

**FEED THE SOIL AND THE SOIL  
WILL FEED THE PLANT.**

## Sandy updates and VERDE-CAL G Success:

These turf areas were nearly completely baren of turf five weeks prior to these pictures being taken.

10 lbs per 1000 ft<sup>2</sup> of VERDE-CAL G instead of 50 lbs per 1000 ft<sup>2</sup> of gypsum were applied.

The turf is many weeks ahead of schedule for recovery from Hurricane Sandy last October.

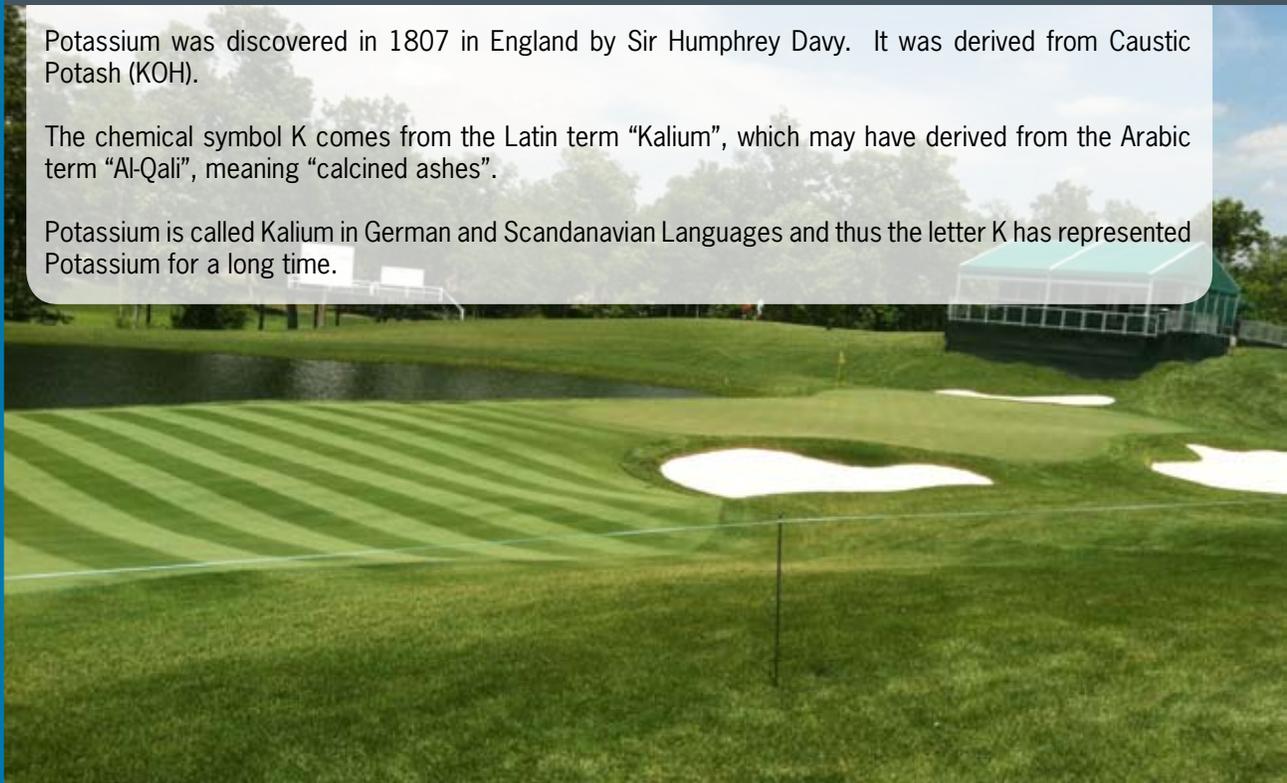


## True Trivia Answer:

Potassium was discovered in 1807 in England by Sir Humphrey Davy. It was derived from Caustic Potash (KOH).

The chemical symbol K comes from the Latin term "Kalium", which may have derived from the Arabic term "Al-Qali", meaning "calcined ashes".

Potassium is called Kalium in German and Scandanavian Languages and thus the letter K has represented Potassium for a long time.



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