

# NEW PROPLUS® AQUA-PHIX™

Safely and quickly decrease soil pH for healthier, thicker turf.

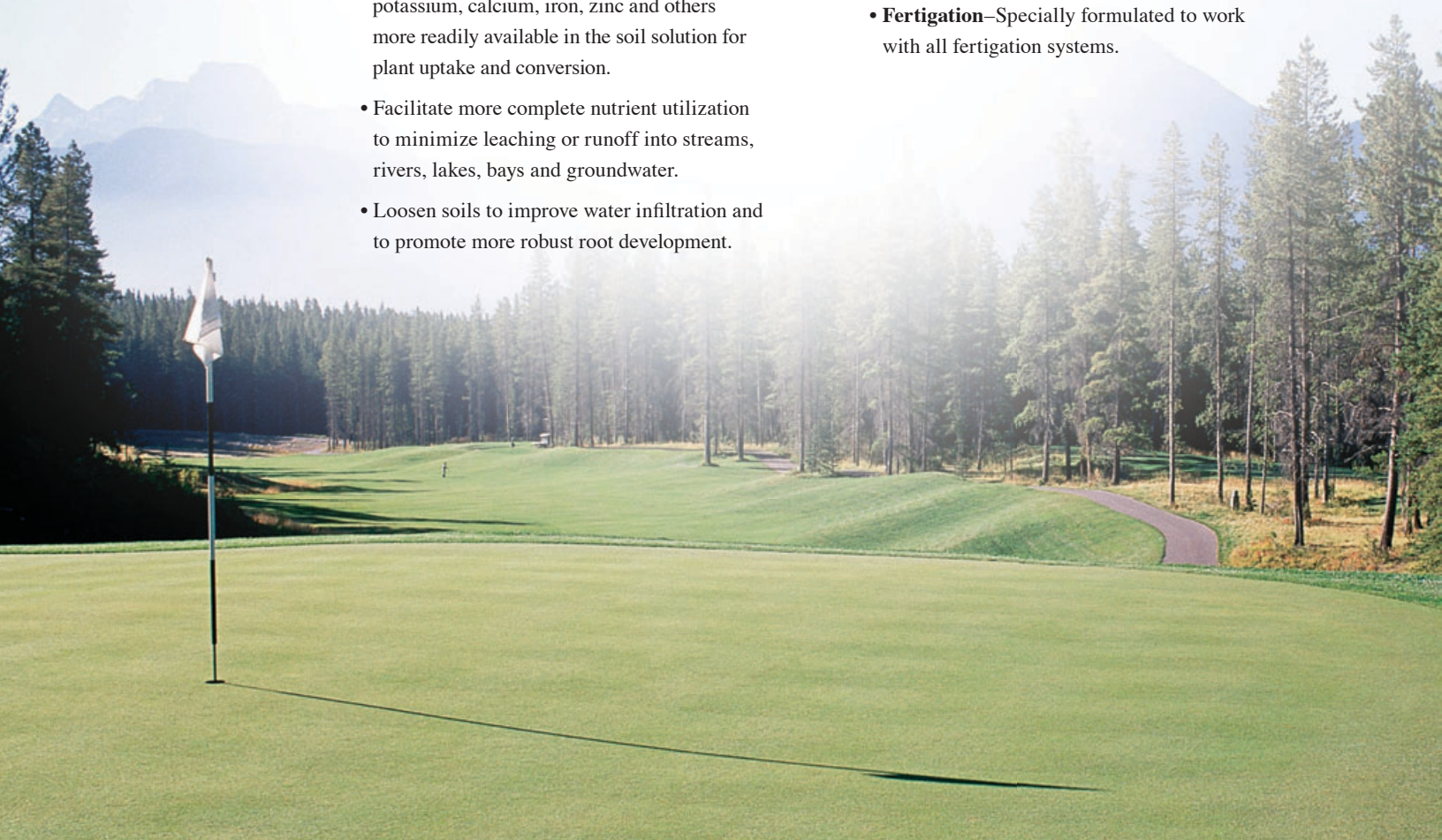
New Aqua-pHix™ is a proprietary blend of chelated, buffered acid with a pH < 1.0 designed to help manage hard water and highly alkaline soil. It is safe for people, equipment and turf, more effective than any other sprayable acidifier on the market, and the most cost-efficient treatment available.

## ProPlus Aqua-pHix from Profile is proven to:

- Quickly decrease pH of soil solution to make it more chemically conducive to plant growth.
- Flush unwanted salts and reduce bicarbonates in the soil.
- Make nutrients such as nitrogen, phosphorous, potassium, calcium, iron, zinc and others more readily available in the soil solution for plant uptake and conversion.
- Facilitate more complete nutrient utilization to minimize leaching or runoff into streams, rivers, lakes, bays and groundwater.
- Loosen soils to improve water infiltration and to promote more robust root development.

## ProPlus Aqua-pHix is available in three formulations to fit your preferred method of application:

- **Granular**—The only granular acidifier available for cost-effective topdressing and aeration infill.
- **Spray**—Proven safe for use with commonly used spray equipment.
- **Fertigation**—Specially formulated to work with all fertigation systems.



## Why ProPlus® Aqua-pHix™ is your best solution for more productive soil.

### Aqua-pHix is Safer:

Unlike commonly used sulfuric acid, buffered chelated acid has been proven in independent testing to be non-destructive to skin and non-corrosive to spray or irrigation equipment, including copper, brass and aluminum. (A minimum dilution rate of 50:1 should be used when in contact with zinc.)

Third-party phytotoxicity testing proves Aqua-pHix, applied at a minimal 25:1 dilution rate, will not burn turf. For more information on the results of this testing, please contact your Profile Golf™ specialist.

### Aqua-pHix is More Effective:

Buffered chelated acid with a pH < 1.0 works quickly to lower the pH level of the soil, aiding in germination, making nutrients available and dissolving unwanted bicarbonate.

It reduces sodium build-up to improve water penetration and drainage, and maximize plant establishment and density.

You get twice the results as the leading sprayable acid product on the market, as documented by third party testing. Plus, Aqua-pHix does not include nitrogen, which some products include in order to create the appearance of an immediate benefit.

### Aqua-pHix is Cost Efficient:

As long as hard water is present, the condition of your soil will be an issue. Aqua-pHix is the easiest, most cost-efficient method to treat hard water when used on a consistent basis.

Initial cost and cost-in-use are significantly lower than the most commonly used acidifiers on the market, as documented by third party testing.

## Find the right treatment for your soil.

To optimize the management of your turf, arrange for a comprehensive soil test to identify potentially deficient nutrients. Your Profile Golf specialist can make recommendations as to which Profile products should be added to your soil. To get a complete look at your soil type, the following areas should be analyzed:

#### Soil Properties

- pH value
- Organic matter percentage
- Electrical conductivity (EC)
- Total dissolved salts (TDS)
- Sodium ppm
- Sodium Absorption Ratio (SAR)

#### Base Saturation CEC

- Potassium (K%)
- Magnesium (Mg%)
- Calcium (Ca%)
- Sodium (Na%)
- Hydrogen (H%)
- Total CEC

The Profile Golf soil amendment lineup includes a range of products that can be used on a consistent basis to treat both alkaline and acidic soils. For soil containing a pH value less than 6.3, we recommend amendments such as ProPlus® Neutralime™ Dry or Liquid which contain a fast-reacting limestone material for pH adjustment in the seed germination and development zone. For soil with a pH value over 7.3, the soil should be amended with Aqua-pHix buffered acid.

### THREE FORMULAS FOR MAXIMUM RESULTS.

If your soil test confirms a soil pH value of 7.4 or higher, Aqua-pHix™ can quickly and dramatically improve your soil solution. Available in three different—and safe—formulas, Profile Golf™ makes it easy to manage the bicarbonate levels in your soil with a consistent and easily measured application program.

#### AQUA-PHIX™ GRANULAR FORMULA

##### Topdressing

With one quick pass and watering, Aqua-pHix can improve the condition of your soil. A topdressing of material followed by a flushing of the soil instantly reduces levels of bicarbonates, soluble salts, sodium and sulfur while increasing acidity. Regularly apply to maintain appropriate pH and bicarbonate levels. For longer lasting results, consider using as an aeration infill.

##### Aeration Incorporation

Make Aqua-pHix a part of your standard aeration practice or DryJect service to increase the acidity of your soil. Fill the aeration holes with the recommended 200 lbs/1,000 sq ft for immediate improvement and long-lasting release. Additionally, the water- and oxygen-holding benefits of Profile™ Porous Ceramic (PPC) will permanently improve soil structure. Check soil levels after six weeks to determine when additional treatments are needed.

##### Application Rates

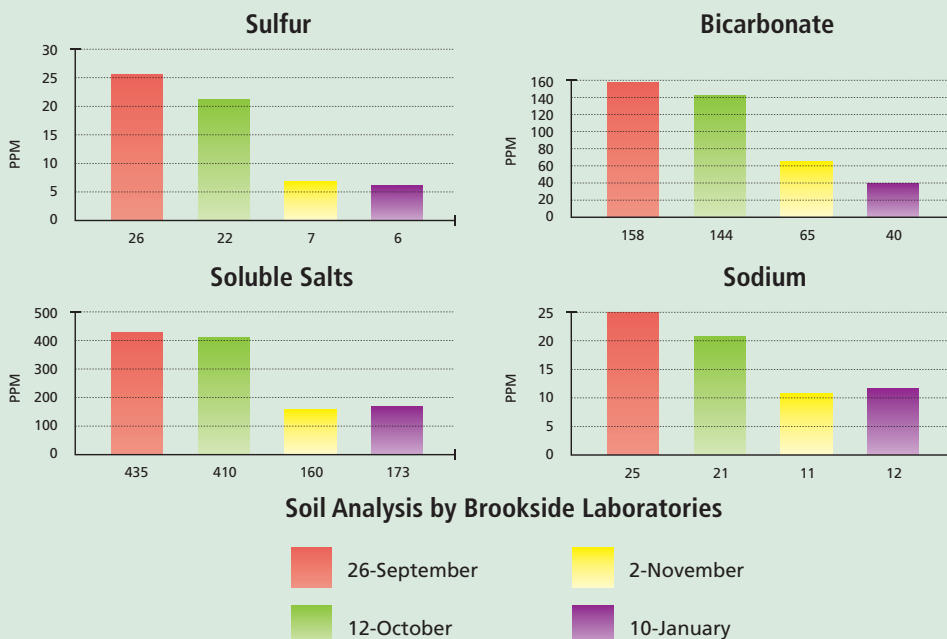
	Topdress
50 Bicarbonate ppm	2.5 lbs / 1,000 ft <sup>2</sup>
100 Bicarbonate ppm	5 lbs / 1,000 ft <sup>2</sup>
200 Bicarbonate ppm	10 lbs / 1,000 ft <sup>2</sup>
300 Bicarbonate ppm	15 lbs / 1,000 ft <sup>2</sup>
400 Bicarbonate ppm	20 lbs / 1,000 ft <sup>2</sup>
450 Bicarbonate ppm	22.5 lbs / 1,000 ft <sup>2</sup>



## Aqua-pHix™ Granular Formula Efficacy Case Study

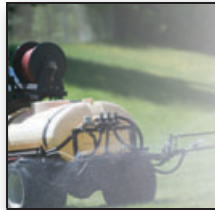
On the greens of Grapevine Golf Course in Grapevine, Texas, Aqua-pHix granular was added to the infill mix at a minimum rate of 200 lbs/1,000 sq ft using the DryJect system. Soil samples were then taken four times over a 105-day period. The results showed a continuous improvement of soil conditions throughout the testing run by Brookside Laboratories:

- 77% reduction in sulfur
- 75% reduction in bicarbonate
- 60% reduction in soluble salts
- 52% reduction in sodium



## AQUA-PHIX™ SPRAY FORMULA

Available in convenient 2.5-gallon jugs, Aqua-pHix is proven safe for use with commonly used spray equipment, including on parts such as copper, brass and aluminum. Please note that in areas where galvanized steel is used, a minimum dilution rate of 50:1 should be used.



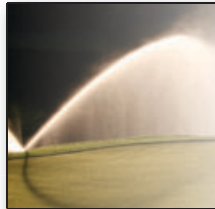
### Application Rates

	Spray'
50 Bicarbonate ppm	1 gal / acre
100 Bicarbonate ppm	2 gal / acre
200 Bicarbonate ppm	4 gal / acre
300 Bicarbonate ppm	6 gal / acre
400 Bicarbonate ppm	8 gal / acre
450 Bicarbonate ppm	9 gal / acre

\* Based on irrigation water hardness. Apply 1-9 gal in 50-450 gal of water per acre for optimum dilution rate of 50 parts water: 1 part Aqua-pHix.

## AQUA-PHIX™ FERTIGATION FORMULA

Compatible with all fertigation systems, Aqua-pHix is available in large 55-gallon drums that are safe and easy to use. Aqua-pHix is proven safe to humans and materials such as copper, aluminum and brass. Whatever formula you choose, use it regularly to manage hard water and bicarbonates.



### Application Rates

	Fertigation**
50 Bicarbonate ppm	5 gal / 100,000 gal water
100 Bicarbonate ppm	10 gal / 100,000 gal water
200 Bicarbonate ppm	25 gal / 100,000 gal water
300 Bicarbonate ppm	45 gal / 100,000 gal water
400 Bicarbonate ppm	70 gal / 100,000 gal water
450 Bicarbonate ppm	85 gal / 100,000 gal water

\*\* Minimum dilution rate 25 parts water: 1 part Aqua-pHix.

## Aqua-pHix Spray Formula Field Study

A field study was conducted by Turf Diagnostics to determine the effects of Aqua-pHix on the displacement of salts over a period of irrigation cycles. A check sample and three replications were treated with a 0.125% Aqua-pHix solution.

Data shows that the samples with Aqua-pHix leached four times more salt than untreated soil samples as measured in both leachate and soil.

### Nursery Test Results

Sample Soil Measurements		
	pH	ppm Salt
Untreated Soil	7.8	70.4
Treated 1	6.2	12.8
Treated 2	6.4	12.8
Treated 3	6.1	12.8

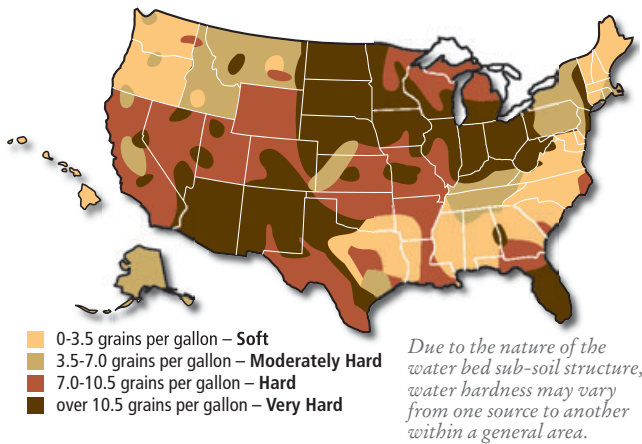
## Improve your water, enhance your soil.

### INTRODUCING A UNIQUE, FAST-ACTING ACID TREATMENT FROM PROFILE.

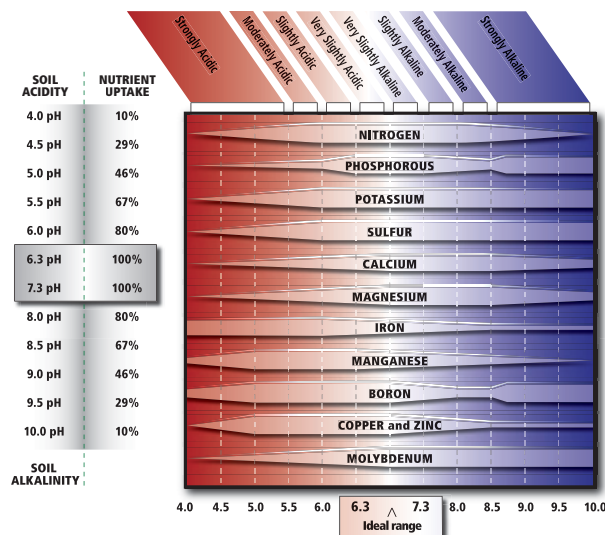
Much of the United States has hard water, containing high calcium levels. As turf is irrigated, the soil assumes characteristics of the hard water. Over time, the soil forms bicarbonate, which causes soil sealing and high alkalinity, preventing water infiltration and trapping nutrients such as nitrogen, phosphorous, potassium, calcium, iron, zinc and others needed for healthy turf establishment.

Although this is a permanent challenge, regular water treatments can improve the soil solution. By amending hard water with new Aqua-pHix, the pH of the soil is greatly reduced to improve seed germination, release key nutrients, and increase the solubility of calcium to enhance fertilizer efficiency, water penetration and drainage.

#### Hard Water Causes Soil Problems in Most of the U.S.

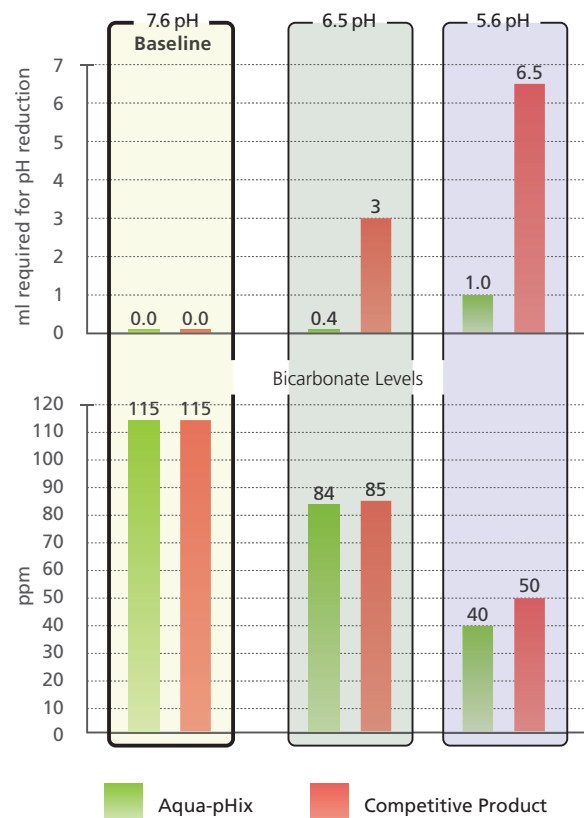


Areas indicated in medium and dark red are the most susceptible to the ill effects of hard water. Consistent use of Aqua-pHix can help bring your pH levels back into a more productive zone between 6.3 and 7.3.



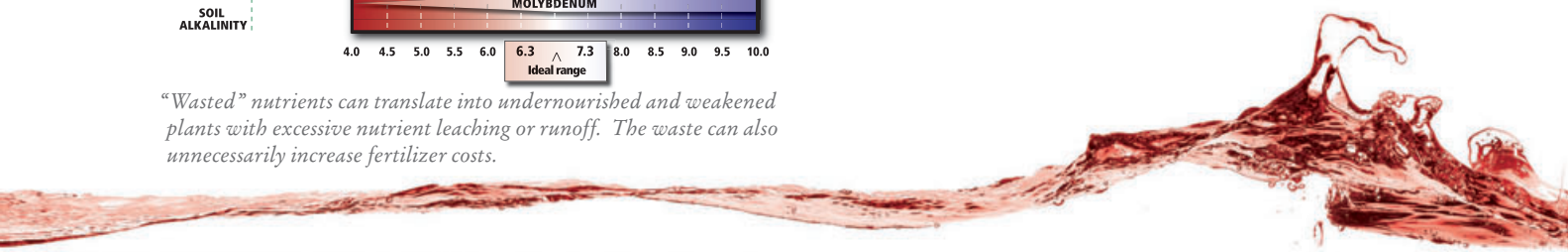
“Wasted” nutrients can translate into undernourished and weakened plants with excessive nutrient leaching or runoff. The waste can also unnecessarily increase fertilizer costs.

#### Competitive Titration Comparison



More than 6 times the amount of competitive product is required to reduce the pH to 5.6.

Aqua-pHix reduced bicarbonate levels to just 40 ppm compared to 50 ppm by competition.



## Your single source for maintenance and construction soil solutions.

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Profile Golf™ is the first and only program of its kind that helps golf course architects, builders and superintendents realize greater synergy in finding soil solutions for both maintenance and construction. Our specialists will help you obtain a soil analysis, interpret the results and recommend the best use of Profile products to help you establish and more easily maintain fine turf.

### IN THE GROUND:

Agronomic products and solutions that ensure extensive root development and promote long-term turf health.

### ON THE GROUND:

Innovative products that prevent erosion on slopes, channels, shorelines, stream banks and wetlands while minimizing risk to the environment.

### BY YOUR SIDE:

Green Design Engineering™ ensures unfailing support from agronomic and erosion control specialists, to help select and install the right products for maximum results.

*To learn more or to set up a trial of ProPlus Aqua-pHix, visit [www.profileproducts.com](http://www.profileproducts.com) or call to speak with a Profile Golf specialist at 800-207-6457.*



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