



pHirst™

w a t e r a m e n d m e n t

Do You Need pHirst™?

Most irrigation water contains some amount of dissolved salts. Some are beneficial and some can be toxic. Salts such as calcium, magnesium, nitrate and sulfate are free and **BENEFICIAL** nutrients to turfgrass. Other salts such as sodium, chloride, and boron must be carefully managed or avoided if possible. A third group that interacts with and is usually present with these salts consists of carbonates, bicarbonates and silicates.

Along with all of this, high pH can compound the problem. In addition, liquid phosphate materials can also form insoluble precipitates with the carbonates and bicarbonates that can reduce fertilizer efficiency. The presence of these salts in irrigation water can cause soil structure to breakdown.

The Answer:

Add **pHirst™** water treatment to reduce bicarbonates and lower pH in your irrigation water supply. The destruction of bicarbonates allows sodium to move through the soil profile thus preventing damage that occurs which inhibits the rootzone. Treating the irrigation water with **pHirst™** will also produce soluble calcium that improves soil structure, infiltration and helps in correcting alkali-induced nutritional problems. The acidulation of the water will also increase the availability of phosphorus and micronutrients. Once these undesirable cations (sodium, etc.) are flushed through the soil profile, they are replaced with beneficial cations such as calcium.

Take the following test to see if **pHirst™** water treatment is right for you.

Water Analysis (Yes or No)

- | | |
|---------------|--|
| pH _____ | 1. Is the pH > 7.0 |
| pHc _____ | 2. Is the pHc < 8.4 |
| Ca _____ ppm | 3. Is sodium > than 5% of TDS |
| Mg _____ ppm | 4. Is Bicarbonate > than 15% of TDS |
| K _____ ppm | 5. What are the total of carbonates < 3 ppm & bicarbonates < 120 ppm (ideal) |
| Na _____ ppm | 6. Levels > than the total Ca & Mg Bicarbonate _____ ppm levels |
| TDS _____ ppm | |



GrowinG Solutions, Inc.