



Helping you grow
the sustainable way!

More irrigation water efficiency for turfgrass



MAGLIV is an expert in optimizing water efficiency through CO₂-injection combined with hydrodynamics. The **WaterXTR™** CO₂-injection system regulates and optimizes pH-value of water used for irrigation purpose.

A pH-value between 5.0-6.5 is recommended for optimal growing conditions for turfgrass.



CO₂ as resource

Carbon dioxide (CO₂) is one of the most effective gasses in nature and is used in several applications. CO₂-injection is a sustainable way to acidify water. In addition, CO₂ protects pipe systems against growth of fungi and bacteria and CO₂ provides an enhanced solubility of added fertilizers to water.

Balanced soil and water

The water efficiency of irrigation application can be influenced by several factors, including irrigation system calibration, soil conditions, operating speed, weather, temperature, and the quality of the used water. Unfortunately, poor performance of water caused by the negative effects of high pH and hardness of water used for irrigation application is often overlooked.

Water with mild to moderate pH-values of 7-10 are more common than water with a pH-value of <7.0. Alkaline water results in a poor absorption and hydration of turfgrass and thus a low water efficiency. A balanced soil and water pH-value around pH 5.0-6.5 will give a more vigor and healthier turfgrass which better withstand pests and fungi and is more resistant to heat and drought stress.

With the **WaterXTR™** you optimize the pH of water in a sustainable and practical way.



*"Turfgrass irrigated with **WaterXTR™** treated water had almost no snow mold damage!"*

CO₂: from greenhouse gas to valuable resource!

The impact of CO₂ on climate change is for most of us clear. By using CO₂ captured at production of fertilizers there is a healthier growing cycle and the Carbon Footprint can be reduced significantly.

Benefits of pH-optimization of irrigation water

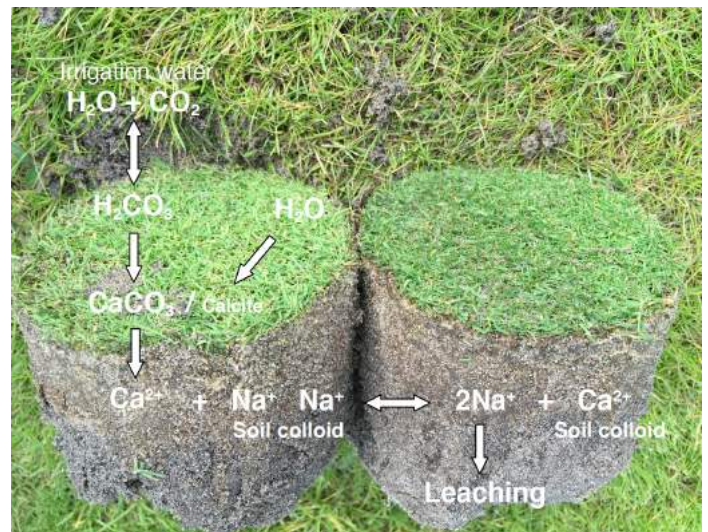
- CO₂ is a weak acid (non-toxic and non-corrosive)
- introduces no polluting elements to treated water, Eco-Friendly
- inexpensive and effective in application compared to chemical additives
- no specific safety training for users needed
- since CO₂ forms a stable solution, pH regulation and control are stable

Direct influence CO₂ on irrigation water

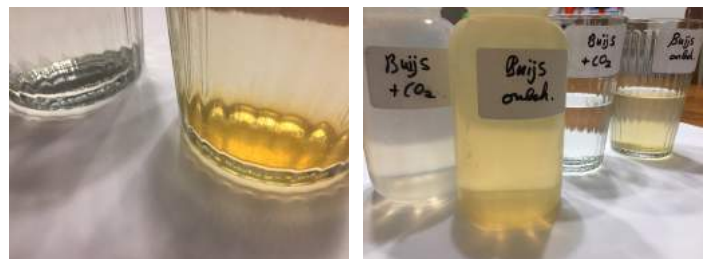
- pH regulation and lowering pH-value of water
- better adsorption of irrigation water
- balanced pH of turfgrass, soil and irrigation water
- reduction of algae and mineral deposition (iron, calcium, etc.) in pipe systems and nozzles
- CO₂ is an important power source for plants and stimulates photosynthesis
- better bonding of Ca, Mg, Cu and Fe ions in water

Indirect influence CO₂ on irrigation water

- 10-30% watersaving due to more waterefficiency
- More efficient usage of nutrients and fertilizers
- Better availability of trace elements
- Better growing circumstances due to more active soil life and microbial activity
- More biomass, root mass, high quality sugars, faster and better germination of seeds
- Leaching of Na⁺ from root zone in sodic and saline-sodic soils
- less heat stress due to optimized hydration



"Increased levels of H₂CO₃ in calcareous sodic and saline-sodic soils result in enhanced dissolution of calcite thereby providing adequate levels of Ca²⁺ for better leaching of sodium. Water works!"



- **Left glass and container above**
WaterXTR™ treated ferrous irrigation well water.

- **Right glass and container above**
Untreated ferric irrigation well water.

- **Left under**
Untreated brackish irrigation surface water.

- **Right under**
WaterXTR™ treated brackish irrigation surface water.

"Our turfgrass is more vital and vigorous with 20% less water!"





Optimized irrigation water with CO₂:

- Effective hydration of plants due to better absorption;
- Less soil run off and evaporation due to better absorption;
- More effective leaching of sodium in top layer soil;
- Higher density and more vigor turfgrass;
- Beter availability moisture, minerals and nutrients;
- Less heat stress and more water efficiency plants;
- 10-30% water saving.



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Goyer Golf & Country Club 4/8/2016 Green 5 non-treated and green 6 treated water. Both chemical-free maintained!

