DEFEND™

MACRO-SORB® TECHNOLOGIES LLC

SMS™ ADDITIVE SOLUTIONS

MACRO-RELIEF™ SALT STRESS RELIEVER

Macro-RELIEF™ increases stress tolerance of turfgrass caused by high salinity levels in the soil and/or irrigation. Macro-RELIEF works by providing plant available calcium along with L-amino acids to regulate osmotic potential within the plant, resulting in increased cell hydration.

Rate: Apply 3-6 oz. per 1000 sq. ft. every 7-14 days. Initial applications should be made prior too, or at the onset of salt related stress. During prolonged periods of high stress, apply 6 oz. per 1000 sq. ft. every 7-14 days. Apply with enough water to uniformly distribute Macro-RELIEF to turf canopy. To activate, water-in Macro-RELIEF with at least 0.125 inch of irrigation.

BYE-CARB™ SOIL FLUSH

SMS Bye-Carb™ is a specifically designed to combat the challenging growing conditions caused by high levels of soil bicarbonates. Formulated with SMS technology, Bye-Carb efficiently degrades bicarbonates across a wide range of soil conditions. Bye-Carb is non-corrosive, easy to use and offers high levels of safety for both turf and applicator.

Rate: Apply 32-64 oz. per acre every 14-28 days. Initial applications should be made prior too, or at the onset of bicarbonate build up. Apply with 60 – 80 gallon of water per acre. Water-in following Bye-Carb application with 0.25 – 0.5 inch of irrigation.

For additional product information, visit us at macrosorb.com or smsadditivesolutions.com

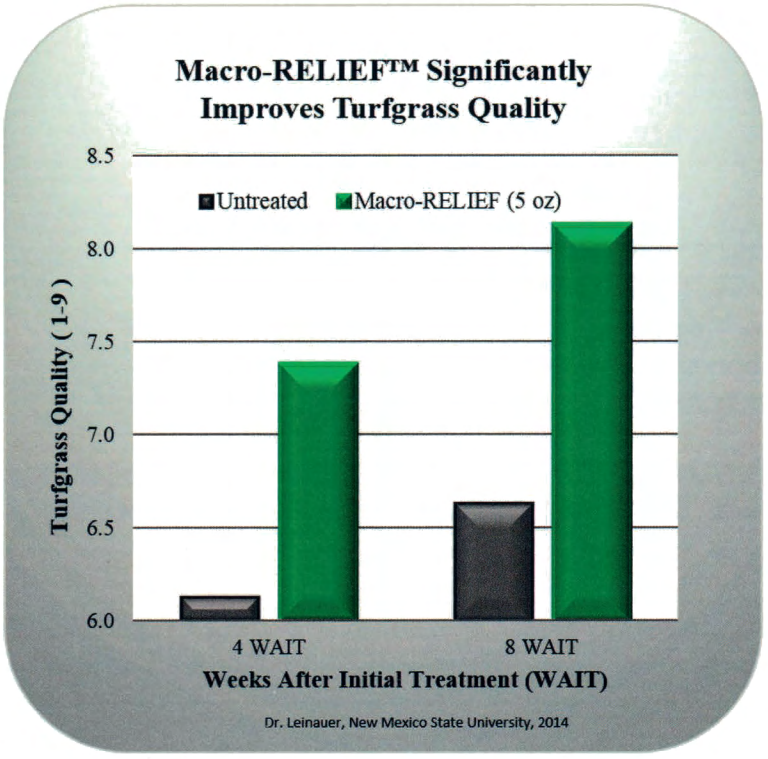
Turfgrass and Salinity

Defend against Salinity and Bicarbonate Issues with Macro-RELIEF™ *Salt Stress Reliever* and SMS Bye-Carb™ *Soil Flush*

High levels of soluble salts in the soil are detrimental to most turfgrass. Negative effects on turfgrasses are species dependent (Table 1) and are generally greater to germinating seedlings compared to mature plants. Excess salts can affect growth and development of turfgrass by osmotic inhibition of water uptake, or induced drought. Therefore, salinity stress is typically symptomatic of drought stress.

Sensitive (< 3 dS/m)	Moderately Sensitive (3 – 6 dS/M)	Moderately Tolerant (6 – 10 dS/m)	Tolerant (> 10 dS/m)
Annual bluegrass	Annual ryegrass	Perennial ryegrass	Alkaligrass
Colonial bentgrass	Creeping bentgrass	Tall Fescue	Bermudagrass
Kentucky bluegrass	Fine-leaf fescues	Zoysiagrass	Seashore paspalum
Rough bluegrass	Buffalograss	Creeping red fescue	St. Augustinegrass

Table 1. Salinity tolerance of turfgrass species, and ECe levels at which turfgrass will become symptomatic of stress.



Macro-RELIEF facilitates absorption of water and nutrients from the soil and into roots leading to improved turfgrass health and overall quality.