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Biofeed Products Reduce Sodium, Improves Deep Root Growth and Water Penetration (Glendale, Arizona) USA

ABSTRACT

In June 2009, a salt reduction study was held to determine the efficacy of Biofeed products in buffering and releasing sodium for improved water penetration, and subsequent leaching from Arizona's calcined-clay that is most common in the greater Phoenix, Arizona area. An AQUATERR EC 300 soil probe was used to measure the before and after treatments in-situ. Three other turf areas were not treated to provide control plots to ensure real-world comparison.

BACKGROUND

Southwestern soils are plagued with high salt levels due to poor drainage, as the clay particles have a high affinity or attraction to the full spectrum of ions and cations, and these easily tie-up into the clay matrix making it highly insoluble. In this binding process, calcium, magnesium and sodium accumulate, and toxic soil conditions result in poor drainage that further aggravates the sodium accumulation.

APPLICATION

A soil analysis was conducted using the AQUATERR instrument to determine sodium levels, and revealed toxic levels in excess of 165 (uF) Micro-Siemens. In addition, the drainage was so poor that the irrigation system could only operate for 10-15 minutes with extreme run-off. It was determined that two Biofeed products should be applied to biologically break the physically and chemically compacted soil conditions, buffer and solublize the accumulated salts, and provide available bio-nutrition for the turf grass. Therefore, a combination of SOIL-PLUS™ and TURF-PLUS™ were applied at labeled rates, and deep watering was done following each application.

RESULTS

During the treatment period the following results were documented:

- The turf responded with greener growth after 10 days following the first treatment.
- Following the 2nd treatment, the water absorption improved and 35-45% less water run-off was observed, and as a result much less water ran down the gutter adjacent to the turf areas.
- The turf showed tremendous recovery and new growth within 60 days.
- Two weeks after the 3rd treatment (120 days), the turf had developed a dense, deep green appearance, yet clippings were much less than expected.
- The AQUATERR Instrument showed a 50% decrease in SODIUM levels (uF) 84.0 Micro-Siemens.
- Two weeks following the 5th treatment, the turf was entering dormancy yet held a deep green color.
- The AQUATERR instrument revealed that the soil SODIUM LEVELS DECREASED TO 41.8 (uF) Micro-Siemens. Root development increased to 8"-10", and higher than normal soil moisture was measured at levels of 30" below the surface.
- The Control plots were managed without Biofeed products and remained unchanged.