

“Effect of Bioactivated Base actosol® on Solu-Cal Performance on Root Development, Turf Quality, and Nutrient Levels, in St. Augustine Turf

The use of humates to increase root development, plant quality, and improve available nutrients in the soil to the plant has been tested by various university researchers on commercial turf, horticultural, and agronomic crops. The purpose of our study was to evaluate the potential of enhancing Solu-Cal performance when used in combination with a foliar application of Bioactivated Base actosol® sprayed on the pelletized Solu-Cal lime.

Introduction

On November 14, 2011, a test was initiated on established St. Augustine turf. The turf had been fertilized in October with 15-15-15. The following treatments were applied based on a 100 sq.ft /treatment and (based on a 6 pound/1000 sq ft maintenance rate of Solu-Cal) and replicated three times.

1. Solu-Cal .6#/100 sq.ft alone (Check)
2. Solu-Cal .6#/100 sq.ft plus 20 ml of actosol® (6%) sprayed (1:40) on pelletized final product
3. Solu-Cal .6#/100 sq.ft plus 20 ml actosol® (6%) sprayed (1:20) on the pelletized final product

The product was uniformly applied to each plot and water in after application.

OBSERVATION/DATA

On January 3, 2012 the plots were evaluated for plant quality, root development and nutrient retention.

Root quality: Results from the study showed that a combination of Solu-Cal with actosol at the lower rate (1:20) significantly improved root performance. (Table 1.) . It was observed that the fresh weight of the root mass of the actosol® plus Solu-Cal was 50grams vs. 18g for the Solu-Cal treatment along. The combination produced healthier roots and more feeder roots thus giving us a better quality turf. We also noted an improved top turf growth with the higher application of actosol.

Plant Retention	Solu-Cal (check)	Solu-Cal plus actosol (1:40)	Solu-Cal plus actosol (1:20)
Organic matter	1.0	1.1	1.4
Phosphorous	307ppm	299ppm	247ppm
Potassium	31ppm	16ppm	16ppm
Calcium	705ppm	566ppm	436ppm
Zinc	5ppm	3ppm	2ppm
Iron	157ppm	118ppm	74ppm
Mn	17ppm	4ppm	3ppm
S	72ppm	68ppm	51ppm
SS	.71ms/cm	.65ms/cm	.57ms/cm

The results from the soil analysis support that actosol improves nutrient uptake into the plant by making more nutrients available to the plant. As the concentration increased of actosol® with the Solu-Cal so did better root development and top growth of the turf (See photos) and lowering of the nutrients in the soil which are being utilized by the plant and not being tied up with other nutrients in the soil.

CONCLUSION

Use of actosol® has shown that when used in combination with Solu-Cal that it improves plant growth, quality, and makes nutrients more available to the plant. Further studies are needed to show how subsequent applications of these two products can have on season long growing of turf and potentially reduce the need for less fertilizer.

Table 1.

