

Iowa Produced Amino Acid Fertilizers may have Biostimulant Effect

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Iowa State researchers Shane Brockhoff and Nick Christians are helping an Iowa company, Ajinomoto Heartland Lysine, LLC, study the effects of its' amino acid containing fertilizer upon turfgrass growth and stress tolerance. The fertilizer, marketed as AJIFOL GreenNcrease, was found to increase shoot density of creeping bentgrass in an initial study conducted by Shane Brockhoff and Dr. Christians in late Summer 2008. They compared several amino acid containing fertilizers with urea and an untreated control as foliar applied nutrients to 'Penncross' creeping bentgrass maintained at both green height (0.16 inches) and fairway height (0.40 inches).

The trial began in mid-August and treatments were applied every two weeks until late-October to equal 0.0625 lbs N per 1,000 square feet per application. The researchers found no differences among the treatments in phytotoxicity, dollar spot, total nitrogen in clippings or rootmass. Treatments that provided nitrogen resulted in more clipping dry weight compared with the untreated control, but there was no difference among the nitrogen treatments. Shoot density was measured in grass plugs and results showed GreenNcrease application increased shoot density by 60% compared with urea. The urea treatment was statistically the same compared with the untreated control. A stress treatment designed to mimic wear by rolling the grass with a heavy roller 100 times was applied and shoot density was re-measured twelve days later. Even after wear treatment, grass treated with GreenNcrease had 45% greater shoot density compared with the controls. Christians has speculated the effect may be due to phytohormone stimulation of buds causing increased shoot production. After a review of the patentability of the findings, additional work is now being planned to verify the effect.

Ajinomoto Heartland Lysine, LLC, produces amino acids lysine and threonine in Eddyville, Iowa using corn as a base feedstock. AJIFOL GreenNcrease is a specialty fertilizer being developed which contains residual ingredients from the production process that includes amino acids, sugars, betaine, ammonium sulfate, and other minerals.