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# Iowa Produced Amino Acid Fertilizers May Have Biostimulant Effect

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## Iowa Produced Amino Acid Fertilizers May Have Biostimulant Effect

### **Abstract**

Iowa State researchers are helping an Iowa company, Ajinomoto Heartland Lysine, LLC, study the effects of amino acid containing fertilizer on 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 in late summer 2008. Several amino acid containing fertilizers were compared with urea and an untreated control as foliar applied nutrients to Penncross creeping bentgrass maintained at both green height (0.16 in.) and fairway height (0.40 in.).

### **Keywords**

RFR A9054, Horticulture

### **Disciplines**

Agricultural Science | Agriculture | Horticulture

## Iowa Produced Amino Acid Fertilizers May Have Biostimulant Effect

### RFR-A9054

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Iowa State researchers are helping an Iowa company, Ajinomoto Heartland Lysine, LLC, study the effects of amino acid containing fertilizer on 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 in late summer 2008. Several amino acid containing fertilizers were compared with urea and an untreated control as foliar applied nutrients to Penncross creeping bentgrass maintained at both green height (0.16 in.) and fairway height (0.40 in.).

The trial began in mid-August and treatments were applied every two weeks until late-October to equal 0.0625 lb N per 1,000 square ft/application. The researchers found no differences among the treatments in phytotoxicity, dollar spot, or 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 12 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 planned to verify the effect.

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