Foliar Application Effects on Leaf Thickness of Ultradwarf Bermudagrass and Creeping Bentgrass (2008)-University of Nebraska

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Research was conducted to determine if foliar nutrition would alter the leaf thickness of treated plants. While this would not be an expected response based on past research on turfgrass nutrition there have been unsubstantiated reports in the field of this perceived response. This perception also results in an additional perception that thicker leaves would result in slower ball roll. This perception exists in spite of previous research has shown that certain growth regulators will cause a leaf to thicken without a negative, and more often a positive, effect on ball roll.

Champion bermudagrass and Penn A4 creeping bentgrass were grown in a pot study in the greenhouse. Prior to data collection the pots were fertilized with either the Grigg foliar tournament program or a granular program with equal input of nutrients. Established pots were grown for 4 weeks under the appropriate treatment regime prior to data collection. Treatments were replicated 4 times and the experimental design was a randomized complete block.

Seven, 14 and 28 days after the final fertility treatment leaves were sampled for specific leaf weight, an indirect measure of leaf thickness. Leas f areas of 10 fully expanded leaf blades from each pot were determined with a LI-COR-3000 area meter. . Leaves were then dried at 600 C for 48hours and weighed. Specific leaf weight was calculated by dividing the dry weight by the leaf area. Higher leaf weight per unit area are indicative of thicker leaves.

Results:

At no time were significant differences exhibited for specific leaf weight between the granular or foliar application for either species . (Table 1, 2). Champion bermudagrass exhibited thicker leaves than Penn A4 creeping bentgrass. These data indicate the perception that foliar application results in thicker leaf blades is not valid.

Table 1. Specific leaf weight of Penn A4 creeping bentgrass post fertilization with granular or foliar nutrition.

Treatment	Specific Leaf Weight mg/cm^3		
Days After Treatment	*7*	*14*	*28*
Foliar	3.4	3.7	3.5
Granular	3.3	3.8	3.5
P>F	NS	NS	NS
NS = non- significant analysis of variance			

Table2. Specific leaf weight of Champion bermudagrass post fertilization with granular or foliar nutrition.

Treatment	Specific Leaf Weight mg/cm^3		
Days After Treatment	*7*	*14*	*28*
Foliar	4.1	4.3	4.3
Granular	4.3	4.2	4.4
P>F	NS	NS	NS
NS = non- signifcant	analysis of	variance	