Gamma aminobutyric acid (GABA) is a non-protein amino acid known to accumulate in plants under drought stress (Shelp et al., 2012). Several studies suggest that GABA often rapidly accumulates in plants in response to abiotic and biotic stresses including drought, salt, wounding, hypoxia, heat shock, and pathogen infection (Kinnersley and Turano, 2000). Whether GABA may influence the antioxidant response and impact turfgrass physiological responses to abiotic stress deserves investigation. The objectives of the study were to evaluate the effects of exogenous applications of GABA on the response of creeping bentgrass to drought stress conditions on a physiological basis and to evaluate the effects on hormonal, antioxidant and nutrient responses.

**Introduction:**

GABA treated plants performed better under drought compared to untreated plants based on results from growth physiology. We found significantly higher up-regulation of ABA (2 and 5 DAT), IAA (5 and 7 DAT) and SA (7 DAT) in drought stressed GABA treated plants compared to control. Exogenous GABA application has been shown to impart abiotic stress tolerance in plants including drought. Previous studies suggest that GABA could act as a signaling molecule and influence phytohormone regulation such as ABA, IAA and ethylene. (Lancien and Roberts, 2006). The results from the current study suggest that phytohormone regulation could play a major role in mitigating the drought stress response in GABA treated bentgrass.

**References**

