Growth, Carbon Metabolism, and Water Use Efficiency of Tall Fescue and Zoysia during Deficit Irrigation. (C05-fu200913-Poster)

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Abstract:

Little is known about the influence of deficit irrigation on growth and physiology in turfgrass. 'Meyer' zoysiagrass and 'Falcon II' tall fescue growth, carbon metabolism, and water use efficiency were evaluated under a mobile rainout shelter at deficit irrigation levels of 20% to 100% of potential evapotranspiration (Etp). Tall fescue and zoysiagrass receiving 20% and 40% Etp had significantly lower canopy vertical growth rates and whole plant respiration (RESP) rates than turf receiving 100% Etp. Compared to well-watered turf, irrigation at 60% Etp reduced zoysiagrass RESP, but had no effect on tall fescue RESP. Canopy net photosynthesis was reduced at 20% Etp for tall fescue and at <= 60% Etp for zoysiagrass. Irrigation at 20% and 40% Etp reduced water use efficiency (WUE) in zoysiagrass, but it had higher WUE levels than tall fescue at any given irrigation level.

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