## Effects of Extended Photoperiod on Heat Tolerance of Creeping Bentgrass. (C05huang150022-Oral)

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## Abstract:

High temperature is a major factor limiting cool season grass growth. The objective of this study was to investigate whether extended photoperiod could alleviate heat injury and whether the effects are associated with changes in endogenous cytokinin levels and carbohydrate metabolism for creeping bentgrass exposed to heat stress. Penncross was exposed to 33 C with three different photoperiods: 14, 18, and 22 hours daily for 32 days. Root growth, turf quality, tiller density, shoot extension rate, cytokinin content, and carbohydrate contents in leaves increased with increasing photoperiod. Extended photoperiod also improved canopy net photosynthetic rate and daily total amount of carbon assimilation, but reduced daily total amount of carbon loss or consumption through dark respiration. These results demonstrated that extended photoperiod could alleviate heat injury in creeping bentgrass, which was associated with the improvement of cytokinin production and carbohydrate availability.

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