# Changes in cytokinins and antioxidant activity in response to increasing soil temperatures in creeping bentgrass. (C05-wang172237-Poster)

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## Abstract:

This study was designed to investigate endogenous cytokinin levels and antioxidant enxyme activities in response to increasing soil temperatures in creeping bentgrass (Agrostis palustris Huds). Two creeping bentgrass cultivars, Penn A4 and Putter, were exposed to soil temperatures ranging from 20 to 35 C while air temperature was maintained at 20 C. Leaf cytokinin content and antioxidant enzyme activities declined with the duration and level of soil temperatures above 25 C. The decline in ZR and iPA content started after 20 days at 27 C of soil temperature for Putter and at 35 C for Penn A4. Superoxide dismutase and catalase activity started to decrease when soil temperature was increased to 27 C for Putter and 31 C for Penn A4 at 23 days of treatment, while lipid peroxidation increased. The decline in cytokinin content and antioxidant activity with increasing soil temperatures indicated that high soil temperature induced leaf senescence even shoots were maintained at the optimal air temperature.

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Cytokinins, creeping bentgrass, heat stress