Effects of Temperature Drop and Water Phase on Creeping Bentgrass and Annual Bluegrass. (C05-hamilton132925-Oral)

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Abstract:

The objective of this experiment was to determine the effect of carbohydrate concentration, water phase, and temperature drop on the survival of unhardened creeping bentgrass and annual bluegrass. Carbohydrates were reduced by placing plants in a lowlight environment for three weeks prior to the beginning of the experiment. Water phase treatments were water, slush and an untreated control (air) was also used. The two temperature drop rate treatments were 0.25 degree C hour-1 and 1 degree C hour-1, and temperatures were dropped from -1 to -4 C. Following the temperature drops, the temperature was raised to 4 C and percent survivals determined. Plants in the low-irradiance carbohydrate treatment had significantly lower survival rates than plants in the high-irradiance treatment, 25% and 58%, respectively. The slush and water treatments significantly reduced survival as compared to the air treatment. There was no significant difference in plant survival between the two temperature drop rate treatments. Low

TNC concentrations and the presence of water decreased the survivability of unhardened creeping bentgrass and annual bluegrass when exposed to subfreezing temperatures.

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