

**The Use of Plant Growth Regulators to Improve the Traffic Tolerance  
and Repair of Overseeded Bermudagrass**

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(ABSTRACT)

An active football season during the fall acclimation period tests the traffic tolerance of bermudagrass. Exogenous applications of synthetic cytokinins or cytokinin-enhancing plant growth regulators (PGRs), such as trinexapac-ethyl, may improve the traffic tolerance of 'Patriot' and 'TifSport' hybrid bermudagrasses (*Cynodon dactylon* var. *dactylon* x *Cynodon transvaalensis*). This study was designed to mimic the agronomic practices and traffic stresses experienced at Virginia Tech's Worsham Field. Starting in September 2005, treatments were applied with a differential-slip traffic simulator. Following a traffic treatment, plots received an application of one of three PGRs: 6-Benzyladenine (6-BA), 2-Chloro-4-pyridyl-phenylurea (CPPU) or trinexapac-ethyl (TE). Physiological and morphological responses such as total non-structural carbohydrates and turf density were measured. Previous researchers have shown that increased tissue cytokinins are related to increased tiller density, delay of senescence and enhanced photochemical efficiency. For these reasons, the application of cytokinin enhancing PGRs may have potential to increase bermudagrass traffic tolerance. Patriot's aggressive growth and excellent cold hardiness are predicted to result in better overall traffic tolerance and repair as compared to TifSport.