

## **EFFECTS OF PLANT GROWTH-PROMOTING RHIZOBACTERIA AND NITROGEN FERTILIZER ON STOCKPILED BERMUDAGRASS: YEAR 1**

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Plant growth-promoting rhizobacteria (PGPR) are non-pathogenic, soil inhabiting, beneficial bacteria that colonize the roots of plants. They are widely adapted to different environments and have been shown to increase root and top growth, drought tolerance, and mitigate against pests in turf-type bermudagrass. The purpose of this study was to evaluate two strains of PGPR (Blend 20 and DH44) as an alternative form of N fertilization for fall-stockpiled bermudagrass. In mid-August 2017, eighteen 10-ft<sup>2</sup> plots were mowed to a 1-inch stubble height prior to stockpiling. Treatments included: control, fertilizer, DH44, DH44 + fertilizer, Blend 20, and Blend 20 + fertilizer. Plots were clipped to a height of 1 inch in mid-November, December, and January to determine yield and nutritive value. Forage dry matter (DM) yield for Blend 20 + fertilizer, DH44, and Blend 20 (620, 600, and 593 lb DM/ac, respectively) were greater than the control (534 lb DM/ac). Blend 20 + fertilizer, control, and fertilizer treatments had the greatest effect on crude protein concentration (9.1, 9.5, and 10.1 %, respectively). All treatments had neutral detergent fiber concentrations between 75% and 77%, and acid detergent fiber concentrations between 35.5% and 37.5% with the exception of the control that had less of both fiber fractions. Percentage in vitro true digestibility decreased with the later harvests (46.1, 33.8, and 39.0%, for November, December, and January respectively). The results showed that PGPR-treated plots had increased DM yield and continued to produce more forage biomass through the winter without effecting the overall nutritive quality.

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