

Evaluating Forage Preservatives & Inoculants in Alfalfa Bermudagrass Baleage

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Forage preservatives and inoculants can be a valuable tool in harvested forage systems. However, some Southeastern producers are interested in utilizing preservatives earlier in the process with in-field application during or immediately following mowing. This application method is thought to decrease dry down time of forage and may in turn improve forage quality. Additionally, utilization of forage inoculants to improve fermentation and aerobic stability of baleage has shown inconsistent results in the southeast. This study was conducted in 2022 utilizing the third (June) and fourth (July) cutting of alfalfa-bermudagrass in Tifton, GA. The objective of the study was to evaluate the use of a propionic acid forage preservative and *L. Buchneri* plus *P. Pentosaceus* combination forage inoculant on field dry down time and forage nutritive value. Experimental design was a randomized complete block with four replications. Treatments evaluated were Preservative (P+), Inoculant (I+), Both (P+, I+), or neither (NP, NI). Forage cores were collected from two bale packages for analysis of forage nutritive value: (1) large, individually wrapped round bales sampled at 6 months post-harvest and (2) mini silos sampled at harvest, 8 weeks, and 6 months post-harvest. The mini silos utilized small plastic storage bags sealed into larger air-tight bags to mimic large bale fermentation. Forage nutritive value was determined using NIRS analysis. There was no difference in dry down time between treatments. Likewise, forage nutritive value parameters Crude Protein (CP) and In-vitro True Dry Matter Digestibility (IVDMD) were not different among treatments ($p > .07$). Increased NDF and ADF values were found for P+ treatments ($p < .01$). Application of propionic acid increased NDF and ADF by 1.4 and 0.9%, respectively. This preliminary data suggests that utilizing propionic acid preservatives alone or in combination with forage inoculants does not decrease dry down time of forage to target moisture or improve forage quality in alfalfa bermudagrass baleage.