AGRONOMIC AND NUTRITIVE VALUE OF COOL-SEASON ANNUAL MIXTURES FOR BALEAGE PRODUCTION

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Baleage is a high moisture feed that is gaining popularity in the Southeast due to its consistent nutrient quality as well as its ability to be harvested at optimum maturity. The objective of this study was to compare the agronomic and nutritive value of two cool-season annual mixtures, wheat (*Triticum aestivum*) and T-Raptor (*Brassica rapa × napus*; T), or wheat and crimson clover (*Trifolium incarnatum*; C) with (I) or without (N) inoculant. The baleage was tested at 8 time periods after ensiling. There was no difference in ADF concentration among treatments, but day 120 after ensiling was greater ($P \leq 0.0024$) than all other sampling dates. There was no difference in NDF between forages and silage inoculant treatments or among days. Crude protein of C was greater ($P \leq 0.0001$) than T by 3.6 units. The pH of C was greater ($P \leq 0.001$) than T, but not different between I and N treatments. The pH did increase at day 120 due to the lack of long-term anaerobic stability but was within normal range at day 28. Lactic acid concentration interactions for forage and silage, and silage by day were not different ($P = 0.0372$, $P \leq 0.0001$ respectively). There was no difference ($P = 0.2633$) between forage treatments for acetic acid however, forage treatments differed ($P \leq 0.0001$) with I being greater than N (5.49 vs. 1.94 %, respectively). Acetic acid increased ($P \leq 0.0001$) across all days. Butyric acid concentrations were greater ($P \leq 0.056$) for C as a result of the buffering capacity as well as pH differences. These results suggest that silage inoculants in these mixtures are economically viable, but that these mixtures are suitable for baleage production and provide adequate forage quality to maintain animal performance.

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