

Integration of Cool- and Warm-Season Grass Pasturing Systems into Cattle Finishing Programs

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Introduction

In a previous report (ISRF01-10), we reported on a study that demonstrated that fall-born steer calves pastured on bromegrass for either portions of or all of the grazing season and then finished in drylot, outperformed calves placed directly into the feedlot in terms of profit/head at harvest. Areas consisting of highly productive soils, interdispersed with highly erodible land, are well suited for this kind of production practice. Production systems of this nature are quite consistent with the concepts of sustainable agriculture. In an effort to capture more grazing potential, it was decided to incorporate warm-season grasses into the pasture program so that forage production would be enhanced during the hot summer months of July and August when cool-season grasses may become nearly dormant. Therefore, the objective of this multi-year study was to compare steer calves provided a combination of cool- and warm-season grass pastures with calves provided cool-season grass pastures only and followed by all calves being finished in drylot. Growth performance and carcass composition, were compared among treatments.

Materials and Methods

The multi-year study involved 116 fall-born Hereford and Angus crossbred calves each year. The calves were obtained April 15 following weaning and a preconditioning program. Following a two-week acclimation period in drylot on ground mid-bloom alfalfa hay, the calves were assigned to treatments by weight and color pattern. The bromegrass pasture consisted of 24 paddocks, each 1.7 acres in size. Each grazing treatment of 28 steers (except for 32 steers placed on warm grass pastures) was

rotated among paddocks at 3- to 4-day intervals early in the season and at about 2-day intervals later in the season. Nitrogen was applied to the pasture in late April at the rate of 100 lb/acre and again in mid-August at the rate of 80 lb/acre. Four treatments were applied at the start of the tests on May 1. One treatment consisted of placing calves on bromegrass pasture until mid-October, at which time they were removed and finished in drylot. Another treatment consisted of placing calves on bromegrass pasture until approximately July 1, at which time they were moved to drylot for finishing. A third treatment involved placing calves on bromegrass pasture until mid-June, at which time they were moved to warm-season pastures until being returned to bromegrass pasture from mid-August until mid-October when they were placed in drylot for finishing. While on warm-season pasture, steers were placed four to a group and rotated every two weeks among 16 one-acre paddocks that consisted of either big bluestem with or without a mixture of 15 interseeded legumes or switchgrass with or without the legume mixture. A total of 40 lb of nitrogen/acre was applied to the warm-season pastures without the legume mixture. The final treatment consisted of placing 28 steers directly into drylot at the start of the tests. An 82% concentrate diet containing whole shelled corn, ground alfalfa hay, and a protein-vitamin-mineral supplement with ionophore and molasses was provided *ad libitum* daily in drylot. On pasture, calves were provided supplement blocks containing ionophore. All calves were implanted with a growth promotant at the start of the tests and again approximately 100 days prior to harvest.

Daily feed intake in drylot was recorded and cattle were weighed at 28-day intervals to obtain average daily gains, feed consumption, and feed conversion. When cattle within a treatment

averaged about 1,250 lb, they were harvested and data were obtained for backfat thickness, ribeye area, % KPH fat, yield and quality grades. Collectively, these data will allow for an evaluation of feedlot and carcass performance as influenced by the four treatments. Further

evaluation using steer purchase and selling prices, plus fixed and variable costs, provided assessment of economic difference among treatments. All data will be accumulated, analyzed, and reported in a future report when the last trial is complete.

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