ULTRASONIC MEASURES OF BACKFAT DEPTH AND RIBEYE AREA FOR STEERS GRAZING RYE-RYEGRASS AT THREE STOCKING RATES

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Background. Visual estimates of body condition scores (BCS) use degree of fatness to predict existing and future nutritional requirements for an array of livestock class, sex, and functions. One of the most widely acceptable uses of BCS is that for estimating reproductive function. With recent developments in ultrasound technology and computer software, real-time ultrasound has use in predicting carcass compositional traits, genetic selections, etc. A cooperative experiment between USDA/ARS Booneville, Arkansas and TAMU-Overton was initiated to determine the effect of stocking rate (SR) of rye-ryegrass pastures on compositional traits of steers prior to feedlot fattening. Winter-born Angus x Brahman (AxB) and Simmental-sired steers from both AxB and Brahman x Hereford dams were weaned late-Sep, backgrounded on pasture, hay, and supplement until initiation of grazing pastures in early Dec, 1998. Steers were scanned ultrasonically between the 12th and 13th ribs at initiation and termination (May 12, 1999) from low (LO), medium (ME), or high (HI) SR, 1.5, 2.1, or 2.7 steers/acre, respectively. These scans allowed for estimates of backfat (BF) and ribeye area (REA). Companion reports present pasture, feedlot, and carcass data.

Research Findings. Both BF and REA measures decreased linearly with increasing SR Fig. 1). Steers grazed on LO stocked pastures had more external fat and larger REA than steers which grazed at either ME or HI SR. This negative linear relationship was expected since final body weights ranged from 1066 lbs (LO), 904 lbs (ME), and 701 (HI) stocked pastures. The more important information was how BF compares with REA. An index-calculation that converts BF to a relative area basis (BF:REA) estimated BF at 8.6% (LO), 6.6% (ME), and 5.8% (HI) (Fig. 1). Steers on LO stocked pastures had more deposition of BF relative to deposition of tissue in the REA.

Application. The LO stocked pastures resulted in heavier steers with higher BCS which suggested these calves could be finished in the feedlot at a reduced number of days. Feed efficiencies in the feedlot, however, may compensate for reduced conditioning at the time of feedlot entrance. Implementation of stocking strategies requires estimates of gain, final weight, BCS, continued ownership, cost of gain on pasture *vs* feedlot costs per lb gain, carcass quality, extent of financial risk, etc. The use of ultrasound data can allow for better predictions of carcass attributes and information upon which to base management decisions.
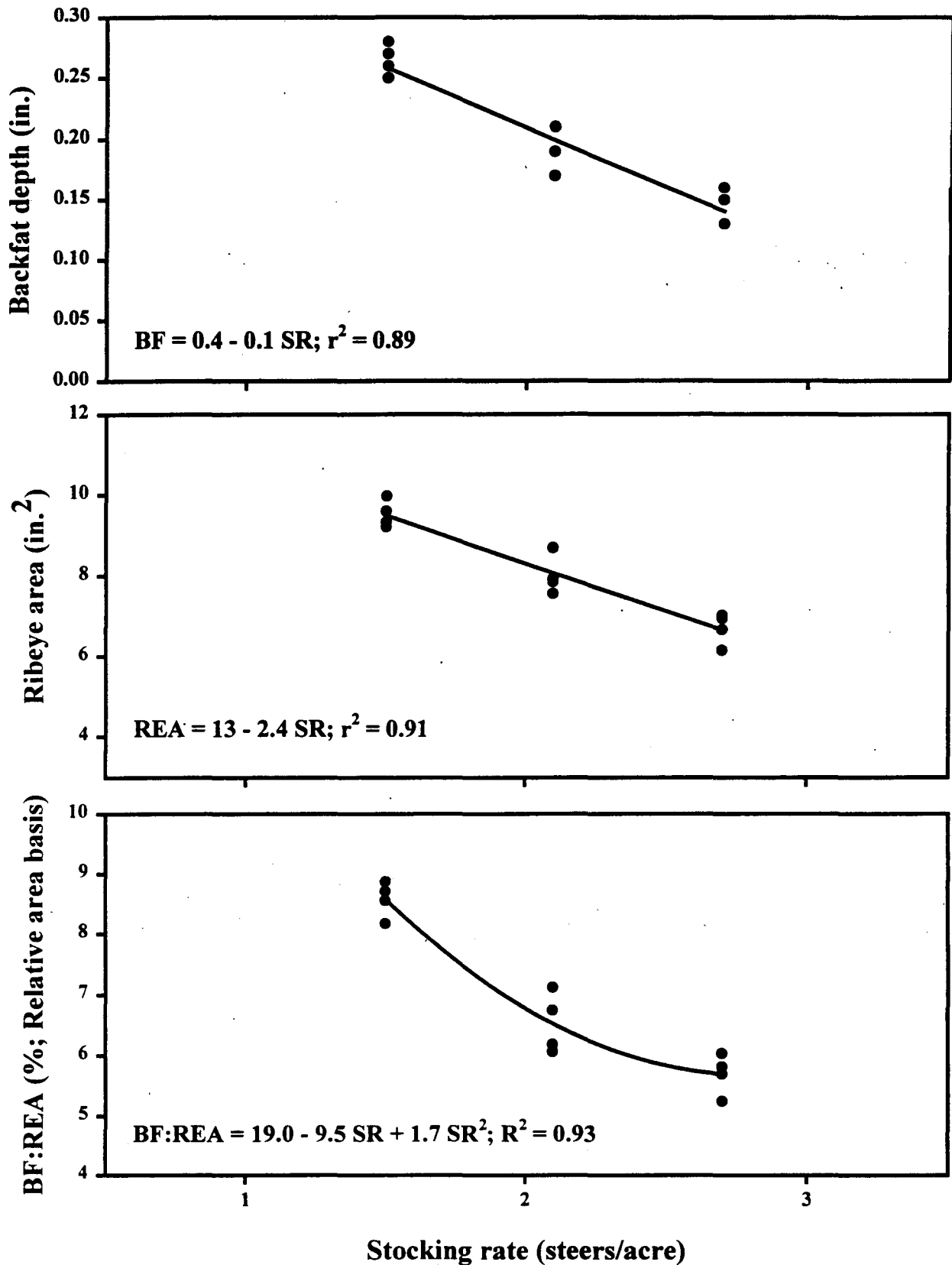
Fig. 1. Trends in backfat depth, ribeye area, and BF:REA (percentage backfat relative to ribeye area) as stocking rate increases for rye-ryegrass pastures.