Cattle Temperament: Persistence of Assessments and Associations With Productivity, Efficiency, Carcass and Meat Quality Traits
(Café, et al. University of New England, Australia)

Relationships between temperament and a range of performance, carcass and meat quality traits in young cattle were studied in two experiments. In both experiments, growth rates of cattle were assessed during backgrounding on pasture and grain finishing in a feedlot. Carcass and objective meat quality characteristics were measured after slaughter.

In experiment 1, Brahman (n = 82 steer and 82 heifers) and Angus (n = 25 steers and 24 heifers) cattle were used. Temperament was assessed by measuring flight speed [m/s on exit from the chute] on 14 occasions, and by assessing agitation score during confinement in the chute (1 = calm to 5 = highly agitated) on 17 occasions over the course of the experiment.

In experiment 2, Brahman (n = 173) and Angus (n = 20) steers were used. Temperament was assessed by measuring flight speed on two occasions during backgrounding and on two occasions during grain feeding. At both sites, a hormonal growth promotant (Revalor-H) was applied to one-half of the cattle at feedlot entry, and the Brahman cattle were polymorphic for two calpain-system markers for beef tenderness.

- Temperament was not related to tenderness gene marker status in Brahman cattle and was not modified by the growth promotant treatment in either breed.
- The Brahman cattle had greater individual variation in, and greater correlations within and between, repeated assessments of flight speed and chute score than did the Angus cattle.
- Correlations for repeated measures of flight speed were greater than for repeated assessments of chute scores, and the strength of correlations for both declined over time.
- Average flight speed or chute scores for each experiment were more highly correlated than individual measurements, indicating that the average values were a more reliable assessment of cattle temperament than any single measure.
- In Brahman cattle, increased average flight speed or chute scores were associated with significant reductions in backgrounding and feedlot growth rates, feed intake and time spent eating, carcass weight and objective measures of meat quality.
- In Angus cattle, the associations between temperament and growth rates, feed intake and carcass traits were weaker than in Brahmans, although the strength of relationships with meat quality were similar.
**Review: Update on Preconditioning Beef Calves Prior to Sale by Cow-Calf Producers**  
(Thrift and Thrift, University of Kentucky and University of Florida)  
The Professional Animal Scientist. 2011. 27:73-82

Preconditioning is designed to reduce incidence of bovine respiratory disease by increasing the immunity of the calf in preparation for the stress of weaning and shipping as calves move from their birth location through the stocker and feedlot phases of the beef production cycle. Results summarized from various studies indicate buyers paid more for preconditioned relative to non-preconditioned calves (premium values ranged from $1.43 to $6.15/cwt for studies that assessed statistical significance of values); however, premiums paid for preconditioned calves do not necessarily result in increased net profit for cow-calf producers (net profit values ranged from −$89.92 to $53.71/calf). To realize the greatest monetary benefit from preconditioning, cow-calf producers should develop a reputation for integrity and market calves through special preconditioning sales.

**Note:** Data from the 2010 Livestock Market Survey says buyers paid $4.88/cwt more for preconditioned calves compared to nonpreconditioned calves.

**Effect of Duration of Progesterone-Releasing Device (Controlled Internal Drug-Release Insert) Treatment on Reproductive Performance in Beef Cows**  
(Gunn, et al., University of Idaho)  
The Professional Animal Scientist. 2011. 27:147-151

The objective of this experiment was to determine the effect of reducing the duration of progesterone-releasing device (CIDR) treatment, in a CIDR-based timed AI synchronization protocol on AI pregnancy rate and overall pregnancy rates in primiparous and multiparous, suckled beef cows. British crossbred cows (n = 138) were paired by parity, days postpartum, age and body weight and were assigned to one of two treatments: 1) cows (n = 68) received a CIDR (d −7) for 7 d, PGF2α (25 mg) at CIDR removal (d 0), GnRH (75 µg) 56 h after CIDR removal, and immediate AI on d 3 (CIDR7) or 2) cows (n = 70) received a CIDR (d −5) for 5 d, PGF2α at CIDR removal (d 0), GnRH 56 h after CIDR removal, and immediate AI on d 3 (CIDR5). All cows received AI by a single inseminator. Cows were exposed to bulls 15 days after timed AI.

Pregnancy status was determined by ultrasonography 32 and 70 days after AI.

- Treatment had no effect on AI pregnancy rates (54.4 and 57.1% for CIDR7 and CIDR5, respectively).
- Overall pregnancy rate was also unaffected by treatment protocol (79.4 and 77.1% for CIDR7 and CIDR5, respectively).
- Age, body weight and body condition score did not have an effect on AI pregnancy rates and overall pregnancy rate.
- Days postpartum had a significant effect on AI pregnancy rates (30% for <60 days postpartum vs. 80% for >60 days postpartum) and overall pregnancy rate (50% for <60 days postpartum vs. 82% for >60 days postpartum).

Results indicate that reducing the duration of CIDR treatment from 7 to 5 days in a CIDR-based timed AI protocol did not influence AI pregnancy rates and overall pregnancy rate in suckled beef cows.

**Giving Beef Calves a Choice of Pasture Type Influences Behavior and Performance**  
(Boland and Scaglia, Virginia Polytechnic Institute and State University)  
The Professional Animal Scientist. 2011. 27:160-166

A study was conducted to determine the performance and behavior of spring-born Angus crossbred steer calves during the backgrounding period when grazing endophyte-free tall fescue or alfalfa monoculture paddocks or when given a choice between the two forages grown as adjacent monocultures in paddocks of 50% tall fescue and 50% alfalfa by area. Steers were fitted with pedometers that recorded percentage of time spent standing, lying or active and steps per day. These data were subsequently analyzed to estimate time spent grazing.

- Steers in the alfalfa spent more time grazing (39.1%) than did steers in tall fescue (36.5%), whereas steers in 50% tall fescue and 50% alfalfa pastures spent the least amount of time grazing (33.0%).
Consequently, steers in alfalfa monocultures took more steps (3,050/day) than did steers in tall fescue pastures (2,892/day), whereas steers in 50% tall fescue and 50% alfalfa pastures took the fewest steps (2,408/d).

Steers in tall fescue spent the greatest amount of time each day lying down (47.6%) compared with steers in 50% tall fescue and 50% alfalfa or alfalfa pastures (45.2 and 45.7%, respectively).

Steers grazing in the tall fescue and alfalfa monocultures spent less time standing still per day (15.4 and 14.8%, respectively) than did steers in 50% tall fescue and 50% alfalfa pastures (21.6%).

Steers grazing alfalfa had less average daily gain (1.37 lb) than did steers grazing tall fescue (1.81 lb) or 50% tall fescue and 50% alfalfa (1.87 lb) pastures.

The use of adjacent monocultures in pasture-based livestock production systems has the potential to improve animal performance by modifying grazing behavior as well as average daily gain.

Effect of Grazing, Stage of Maturity at Harvest and Glycerol Treatment on Wheat Harvested as Silage

(Gadberry, et al. University of Arkansas)
The Professional Animal Scientist. 2011. 27:257-261

The objective of this project was to examine the effect of grazing restriction, stage of maturity at harvest and addition of glycerol to wheat harvested as silage. The project design was a split-split plot, and the first treatment level was nongrazed wheat compared with wheat grazed just before first hollow stem. The secondary treatment structure was harvesting the wheat at anthesis versus soft dough maturity. The third treatment structure was applying glycerol to the wheat at 0, 5, 10 or 15% of dry matter before ensiling.

Nongrazed wheat produced more yield than did grazed wheat, and harvesting at soft dough produced more yield than did harvesting at anthesis.

The change in NDF, ADF and IVDMD was greater for nongrazed wheat from anthesis to soft dough maturity compared with grazed wheat.

Grazing had no effect on postensiling forage chemical composition.

Silage pH reached acceptable levels (4.0 to 4.2) but was not affected by plant maturity.

Glycerol addition, however, appeared to result in a slight improvement of IVDMD.

Residual Feed Intake, Body Composition and Fertility in Yearling Beef Heifers

(Shaffer et al. West Virginia University)

One hundred thirty-seven spring-born yearling beef heifers of British breed types were used to determine the relationships between residual feed intake and growth rate, body composition, mature size and fertility. Heifers were housed in a dry lot facility during the experimental period, and data were collected over a two-year period (yr 1, n = 67; yr 2, n = 70). Individual feed intake, body weight, body condition scores, hip height and ultrasonic measurements (subcutaneous rib fat, rump fat, LM area and intramuscular fat) of body composition were recorded. Individual feed intakes (lb of TDN consumed/day) were used to calculate residual feed intake, combining both years of data. Heifers averaged 387.0 days of age and 743 lb of body weight at initiation of the experiment. Mean ADG was 2.51 lb/day during the trial. Based on residual feed intake, with year of test and farm of origin included in the model as covariates, heifers were classified into groups: positive (1.63 lb of TDN/day) or negative (~1.61 lb TDN/day) for first analysis and high, medium or low (mean RFI = 2.34, ~0.02 and ~2.49 lb of TDN/day, respectively) subsequently.

An initial phenotypic relationship between residual feed intake and both subcutaneous rib fat and rump fat (r= 0.19 and 0.17, respectively) was sustained with subcutaneous rib fat (r = 0.27) and rump fat (r = 0.24) to trial conclusion.

No other correlations with residual feed intake were significant.
• Heifers classified as positive reached puberty earlier than those classified as negative (414 vs. 427 days of age), and possessed greater LM area per 100 kg of body weight at conclusion of the trial.

• Medium heifers exhibited less rump fat compared with either high or low heifers at trial initiation.

• Low heifers possessed less LM area (cm²) per 100 kg of body weight than high but did not differ from medium heifers at either the beginning or the end of test.

• Additionally, a negative linear relationship was observed between residual feed intake and age at puberty. Each 1-unit increase in residual feed intake corresponded to a decrease of 7.5 d in age at puberty, but did not affect pregnancy or conception rates.

Differences in body fat and rate of metabolism associated with residual feed intake could delay reproductive maturity.

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Arkansas Cooperative Extension Service is implied.