

milk production (NM), poor litter size, and CD ( $P < 0.0033$ ). Moreover, sows mainly culled at parity 0, 1, and 2 ( $P < 0.0024$ ). Besides CD and RS, LA and NP were the primary reason for parity 1 and 2 culls, respectively. In conclusion, SD, LA, CD, and NP sharply decrease sow lifetime production. AB9, RS, NP, and NM mainly occurred in gilts, weaning, gestating, and lactating sows, respectively. Low parity sows had more risks of CD, RS, LA, and NP.

**Key Words:** culling pattern, lifetime production, sow

---

**150 Administering an appeasing substance to *Bos indicus*-influenced beef cattle at weaning and feedlot entry.** Allison Millican<sup>1</sup>, Reinaldo F. Cooke<sup>2</sup>, Alice Brandão<sup>3</sup>, Thiago Schumacher<sup>4</sup>, Osvaldo Souza<sup>5</sup>, Thais Castro<sup>6</sup>, Bruno Cappellozza<sup>7</sup>, <sup>1</sup>Texas A&M University, <sup>2</sup>Texas A&M University, <sup>3</sup>Texas A&M University, <sup>4</sup>São Paulo State University (UNESP), <sup>5</sup>São Paulo State University (UNESP), <sup>6</sup>Nutricorp, <sup>7</sup>Nutricorp

Bovine appeasing substance (BAS) is expected to have calming effect in cattle experiencing stressful situations, including weaning and feedlot arrival. In Exp. 1, 186 *Bos indicus*-influenced calves (73 heifers, 133 bulls) were weaned at  $211 \pm 1$  d of age (d 0). Upon weaning, calves were ranked by sex and body weight (BW), and assigned to receive BAS (Nutricorp, Araras, SP, Brazil;  $n = 94$ ) or water (CON;  $n = 92$ ). Treatments (5-mL) were topically applied to the forehead of each animal. Calf BW was recorded and samples of blood and tail-switch hair collected on d 0, 15, and 45. Calves that received BAS had greater ( $P < 0.01$ ) average daily gain (ADG) from d 0 to 15, and BW on d 15 compared with CON. Overall ADG and BW on d 45 were also greater ( $P < 0.05$ ) in BAS vs. CON. Plasma concentrations of haptoglobin were less ( $P < 0.01$ ) in BAS vs. CON cattle on d 15, whereas cortisol concentrations in plasma and tail-switch hair did not differ between treatments ( $P > 0.16$ ). In Exp. 2, 140 *B. indicus*-influenced bulls (~27 mo of age) were transported from a cow-calf ranch to a commercial feedlot (d -1), and maintained on a single pasture for 24 h. On d 0, bulls were ranked by BW and assigned to receive BAS ( $n = 70$ ) or CON ( $n = 70$ ) as in Exp. 1. Bulls receiving BAS had greater ( $P = 0.04$ ) ADG from d 0 to 15, but less ( $P < 0.01$ ) ADG from d 15 to 45 compared to CON. No other treatment effects were detected ( $P > 0.18$ ). Therefore, BAS administration to beef cattle at weaning or feedlot entry had immediate benefits to ADG, which were sustained for 45 d in weaned calves but not in feedlot cattle.

**Key Words:** appeasing substance, beef cattle, stress

---

**152 Effects of mineral supplementation on performance and serum mineral status in beef steers grazing annual ryegrass.** J D. Rivera<sup>1</sup>, Rhonda C. Vann<sup>2</sup>, <sup>1</sup>MSU-MAFES White Sand Branch Beef Unit, <sup>2</sup>Mississippi Agricultural and Forestry Experiment Station, Mississippi State University

Thirty six crossbred (predominantly English with some *Bos indicus* influence) beef steers (initial BW  $264.8 + 35.8$  kg) were blocked by BW and used in a completely random design to examine the effects of mineral supplementation on performance and serum mineral status in beef cattle grazing annual ryegrass pastures for 84 d. All cattle were withheld from mineral for approximately 60 d prior to the initiation of the study and were allowed to graze dormant bahiagrass pastures (*Paspalum notatum*), and also had access to bahiagrass hay. On d -1, cattle were weighed and stratified by BW into Light ( $n = 6$  pastures) and Heavy ( $n = 4$  pastures) blocks and returned to their dormant warm season pasture. On d 0, cattle were weighed, a 10 mL blood sample was collected for serum mineral status and cattle were moved to their respective 1.2 ha annual ryegrass treatment pastures. Treatments were randomly assigned to pasture and consisted of CON (no complete mineral supplementation), or MIN (free choice access to a complete beef mineral.) Cattle grazed annual ryegrass for 84 d, after which a final BW was collected as well as a second 10 mL blood sample. Data were analyzed as a mixed model with weight block a random effect and treatment a fixed effect and pasture was the experimental unit. Supplementing MIN tended ( $P = 0.06$ ) to increase total weight gain at d 84 and increased ( $P = 0.01$ ) ADG (1.61 vs. 1.67 kg/d for CON and MIN, respectively). Additionally, feeding MIN resulted in increased serum Co, Zn, and Se ( $P = 0.01$ ) but resulted in no differences in serum Fe and Cu ( $P > 0.10$ ). Feeding MIN resulted in greater performance and increased some serum mineral levels, however the lack of response in serum Cu to MIN bears further examination.

**Key Words:** beef cattle, minerals, annual ryegrass

---

**148 Residual feed intake and body weight gain relate to feeding behavior in Nelore bulls: Implications for performance and maintenance requirements.** Ana Clara B. Menezes<sup>1</sup>, Sebastião Valadares Filho<sup>2</sup>, Pedro Benedetti<sup>3</sup>, Marcos Pacheco<sup>4</sup>, Pauliane Pucetti<sup>5</sup>, Breno Silva<sup>6</sup>, Diego Zanetti<sup>7</sup>, Fabyano Silva<sup>8</sup>, Mário Paulino<sup>9</sup>, Mário