Strategic Supplementation: NMSU Small Supplement Impacts Feedlot Performance

BACKGROUND

- **RESEARCH GOAL:**
  - Evaluate the effects of differing approaches to prepartum nutrition on calf health and input costs from weaning through the feedlot phase
- SUPPLEMENTS
  - Fed 3 supplements contained 36% to 40% crude protein
    - Traditional cottonseed meal-wheat middlings based cubes
    - Small supplement- composed of 50% Corona Ranch mineral and 50% bypass proteins meal (feather and blood meal)
    - Manager's choice- traditional cottonseed fed when manager felt cow stress required supplementation
  - Feeding rate and frequency
    - Traditional -1 lb/head/day, fed three times per week (2.3 lb/head/feeding)
    - Small supplement – self fed, always available in mineral tubes
    - Manager's choice – fed at any rate when needed
  - Supplementation strategies designed to be reflective of applied practices. Due to variation in annual forage conditions and grazing constraints, the duration of the supplementation period varied by yr.
    - In yr 1, supplements were fed for 27 d (2002-2003)
    - In yr 2, 62 d (2003-2004)
    - In yr 3, 93 d (2004-2005)
  - In all yrs, supplementation ended 2 wks prior to the expected initiation of calving
- **Finishing Phase**
  - Steers were fed at a commercial feedlot (Double A Feeders, Clayton, NM)
  - Steers were received at the feedlot in mid-November each year
  - Steers were individually assigned to a marketing group using ultrasound technology and computer software (CPEC, Oakley, KS)
  - Steers were harvested between March and early July in a commercial facility (National Packing Co., Liberal, KS)

RESEARCH SUMMARY

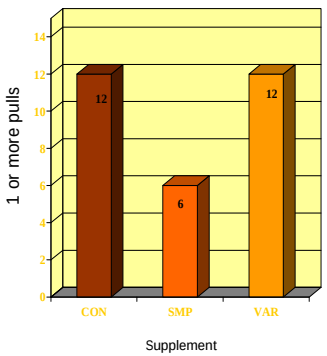

Figure 1. One or more pulls in the feedlot across the three supplements.

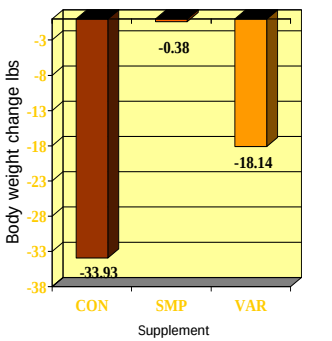

Figure 2. Feedlot net profit/hd across the three supplements.

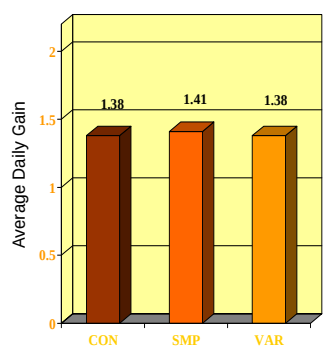

Figure 3. Average daily gain of steers in the feedlot

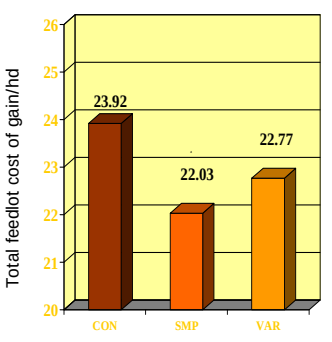

Figure 4. Total feedlot cost of gain/hd

RESEARCH ANALYSIS

- **SUMMARY**
  - Range cow prepartum supplementation may play an important role in calf well-being from birth to the feedlot. These results allude to a range of prenatal nutrition that will have no affect on pre and postnatal calf development and lifetime weight gain. Environmental stress during gestation and type of weaning preconditioning program might play a bigger role in calf performance than the range prenatal nutrition investigated in this study. However, this study did reveal that calves born from SMP supplemented dams were pulled fewer times and had the tendency to be more profitable implying that there maybe nutrient or ingredient formulations for prepartum supplements that when fed to range cows results in more favorable calf feeding outcomes.
- **TAKE HOME MESSAGE:**
  - **Prepartum supplementation may have an affect on calf development. Calves from dams fed the small supplement with blood meal/feather meal had higher ADG, rib-eye area, and net profit; while decreasing medicine cost and cost of gain in the feedlot. There is a definite trend that feeding cows SMP during gestation may have a huge impact on the feedlot industry.**