

# Strategic Supplementation: Supplementing Young Cows for Reproduction



## Research Summary, 1995 - 2007



### BACKGROUND

#### RESEARCH GOAL:

- Increase pregnancy rates of 2- and 3-year old cows
- Decrease days to first estrus of 2- and 3-year old cows
  - Increase number of cows cycling before breeding
- Supplements contained 30 to 36% CP
  - Traditional cottonseed meal-based cubes (fed 10 years)
  - Bypass protein cubes – 50% of CP is bypass, supplied as feather meal plus animal protein product (fed 7 years)
  - Bypass protein cubes plus propionate salt (fed 7 years)
- Feeding rate and frequency
  - 2 to 2.5 lb/head/day, fed twice weekly (7 to 8.75 lb/head/feeding)
- Duration of postpartum supplementation
  - Cows fed until start of breeding season in normal years
  - In drought years, cows fed through first 21 to 30 days of breeding season
    - Cow in 2006 were fed until the last week of breeding



### RESEARCH SUMMARY

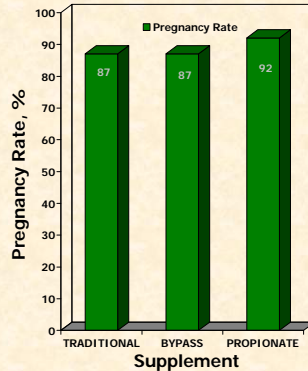


Figure 1. Pregnancy rates of young cows fed 3 different postpartum supplements.

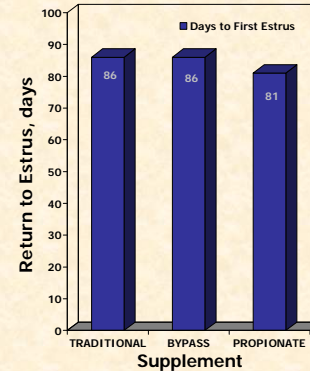


Figure 2. Days to first estrus of young cows fed 3 different postpartum supplements.

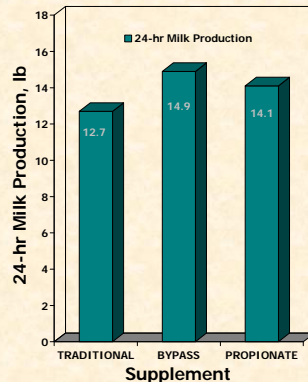


Figure 3. 24-hr milk production of young cows fed 3 different postpartum supplements.

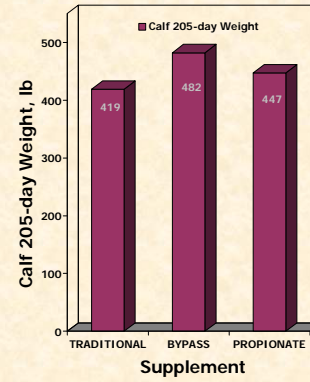


Figure 4. Calf adjusted 205-day weaning weights for young cows fed 3 different postpartum supplements.

### ECONOMIC ANALYSIS

- To compare supplementation strategies, we predicted results for cows fed either TRADITIONAL or PROPIONATE supplement
- Assumptions:
  - All calves valued at \$1.16/lb at weaning

Table 1. Economic comparison of 2 different postpartum supplements fed to young cows at CRLRC. Bypass and propionate supplements are compared to traditional.

| Item                       | TRADITIONAL | PROPIONATE |
|----------------------------|-------------|------------|
| Supplement cost/ton        | 318         | 528        |
| Feed cost/cow \$           | 28.62       | 42.66      |
| Calf weaning weight        | 435         | 438        |
| Lb calf weaned/cow exposed | 384         | 412        |
| Calf value at weaning \$   | 445.44      | 477.92     |
| Calf income difference \$  | --          | 32.48      |
| Feed cost difference \$    | --          | 14.04      |
| Net income difference \$   | --          | 18.44      |

Table 2. Comparison of reproductive performance, milk production, and weaning weight for young range cows at Corona Range and Livestock Research Center in supplementation experiments.

| Year | d to first estrus | 24-h milk prod lb | Adj. 205-d WW lb | Pregnancy rate % |
|------|-------------------|-------------------|------------------|------------------|
| 1995 | 93                | 14.7              | 528              | 97               |
| 1996 | 86                | 10.5              | 464              | 98               |
| 1997 | 101               | 13.4              | 510              | 81               |
| 1998 | 97                | 11.4              | 484              | 59               |
| 1999 | 63                | 16.5              | 504              | 93               |
| 2000 | 107               | 12.3              | 352              | 80               |
| 2001 | 121               | 14.1              | 427              | 86               |
| 2003 | 58                | 16.8              | 530              | 96               |
| 2004 | 77                | 18.9              | 530              | 95               |
| 2005 | 70                | --                | 482              | 89               |
| 2006 | 70                | 12.3              | 350              | 94               |
| 2007 | 81                | 14.0              | 480              | 96               |