

**SUPPLEMENTING YOUNG COWS FOR REPRODUCTION
CORONA RANGE AND LIVESTOCK RESEARCH CENTER
RESEARCH SUMMARY, 1995-2004**

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Background: The goal of this research has been and continues to be to increase pregnancy rates of 2- and 3-year-old cows while decreasing days to first estrus. In other words, we would like to increase the number of cows cycling before breeding. Supplements used in these studies contained 30 to 36% crude protein (CP) and can be grouped into three categories: 1) traditional cottonseed meal-based cubes (TRADITIONAL, fed 7 years), 2) bypass protein cubes where 50% of CP is bypass, supplied as feather meal plus animal protein product (BYPASS, fed 7 years), and 3) bypass protein cubes plus propionate salt (PROPIONATE, fed 4 years). Supplements were fed at a rate of 2 to 2.5 lb/head/day fed twice weekly (7 to 8.75 lb/head/feeding). In normal years, cows were fed until the start of the breeding season; cows were fed through the first 21 to 30 days of the breeding season in drought years.

Research Summary: Pregnancy rates, days to first estrus, 24-hour milk production, and calf adjusted 205-day weaning weights over the research period are summarized in Table 1.

Table 1. Pregnancy rates, days to first estrus, 24-hour milk production, and calf adjusted 205-day weaning weights for young cows fed three different postpartum supplements from 1995-2004 (see text for details) at Corona Range and Livestock Research Center.

Item	Supplement		
	TRADITIONAL	BYPASS	PROPIONATE
Pregnancy rate, %	86	87	90
Days to first estrus	96	86	87
24-hour milk production, lb	12.8	14.9	14.6
Calf 205-day weaning weight, lb	407	482	454

Economic Analysis: To compare supplementation strategies, we predicted hypothetical results for three 100-cow herds fed either TRADITIONAL, BYPASS, or PROPIONATE supplement. Assumptions of this analysis included a 70 day postpartum feeding period where cows were fed 2 lb/head/day. TRADITIONAL calves were assumed to be 205 days old at weaning, and calf average weight per day of age was assumed to be 2.2 lb. All calves were valued at \$1.00/lb at weaning. Table 2 summarizes this economic analysis.

Summary: Even though feed cost for the year were higher for the cows in the BYPASS and PROPIONATE groups, their calves had potential to be heavier at weaning because cows fed BYPASS and PROPIONATE bred back sooner than cows fed TRADITIONAL. This resulted in an increase in income when BYPASS and PROPIONATE were compared to TRADITIONAL.

Table 2. Economic comparison of 3 different postpartum supplements fed to young cows at the Corona Range and Livestock Research Center. Bypass and propionate supplements are compared to traditional.

Item	Supplement		
	TRADITIONAL	BYPASS	PROPIONATE
Supplement cost/ton, \$	230	245	345
Feed cost/cow, \$	16.10	17.15	24.15
Calf age at weaning, days	205	215	214
Calf weaning weight, lb	451	473	471
Lb calf weaned/cow exposed	388	412	424
Calf value at weaning, \$	388	412	424
Calf income difference, \$	---	24	25
Feed cost difference, \$	---	1.05	8.05
Net income difference, \$	---	22.95	27.95