

**Livestock Efficiency**  
**STRATEGIC SUPPLEMENTATION: SUPPLEMENTING YOUNG COWS FOR  
REPRODUCTION – RESEARCH SUMMARY, 1995-2004**

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**THE STORY IN BRIEF:** Our research goal is to increase pregnancy rates of 2- and 3-year-old cows, and further, to increase the number of those young cows cycling before the breeding season. This summary will describe supplements fed to young cows from 1995 through 2004 and discuss some of the results of these experiments. Supplements contained 30 to 36% crude protein and were fed twice weekly at a rate of 2 to 2.5 lb/head /day (7 to 8.75 lb/head/feeding). Traditional cottonseed meal-based cubes, bypass protein cubes, and bypass protein cubes plus propionate salt were evaluated and compared. Cows on all supplements had similar pregnancy rates, although cows fed bypass and bypass + propionate salt returned to estrus sooner than cows fed traditional cubes (Table 1). Economic analyses found that feeding bypass or bypass + propionate salt cubes has potential to increase net income by \$22.95 and \$27.95 per cow, respectively, when compared to traditional cubes (Table 2).

**THE PROBLEM:** Poor reproductive performance of 2- and 3-year-old cows is a challenge faced by cow/calf producers. Our research goal is to improve breed-back of young cows through supplementing biologically potent nutrients during the postpartum period.

**OBJECTIVES:** Our objectives are to evaluate postpartum supplements for their potential to improve reproductive performance of young postpartum range cows.

**DURATION:** 1995 – 2004

**APPROACH:** Supplements contained 30 to 36% crude protein and were fed twice weekly at a rate of 2 to 2.5 lb/head /day (7 to 8.75 lb/head/feeding). Traditional cottonseed meal-based cubes (fed for 7 years), bypass protein cubes (fed for 7 years) and bypass protein cubes plus propionate salt (fed 4 years) were evaluated and compared. Bypass protein cubes contained 50% of the crude protein as bypass, which was supplied as feather meal plus animal protein product. In normal years, cows were fed after calving until the start of breeding; in drought years, cows were fed through the first 21 to 30 days of the breeding season. To compare supplementation strategies, we predicted the hypothetical results for three 100-cow herds fed either traditional, bypass or bypass + propionate salt cubes. Assumptions for our economical analyses (Table 2) included that cows were fed for 70 days postpartum at a rate of 2 lb/head/day. To serve as a base, 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.

**RESULTS:** Cows on all supplements had similar pregnancy rates, although cows fed bypass and bypass + propionate salt returned to estrus sooner than cows fed traditional cubes (Table 1). Average milk production and weaning weight data are also presented (Table 1). Because cows fed bypass or bypass + propionate salt cubes cycled sooner, their calves have potential to be older and heavier at weaning. Economic analyses found that

feeding bypass or bypass + propionate salt cubes has potential to increase net income by \$22.95 and \$27.95 per cow, respectively, when compared to traditional cubes (Table 2).

**POTENTIAL APPLICATION:** Feeding bypass or bypass + propionate salt cubes has the potential to increase net income and improve reproductive performance of young postpartum range cows.

**EDUCATIONAL PLAN:** Research results will continue to be disseminated via Extension activities. We hope to gain acceptance of our concept by local feed companies.

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Table 1. Pregnancy rate, return to estrus, milk production, and calf weaning weight of for young cows fed three different postpartum supplements at the Corona Range and Livestock Research Center.

Item	Supplement		
	Traditional	Bypass	Bypass + Propionate
Pregnancy rate, %	86	87	90
Return to estrus, days	96	86	87
Milk production, lb/day	12.8	14.9	14.6
Calf 205-day weaning weight	407	482	454

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Table 2. Economic comparison of three different postpartum supplements fed to young cows at the Corona Range and Livestock Research Center. Bypass and bypass + propionate salt supplements are compared to traditional cottonseed meal-based cubes.

Item	Supplement		
	Traditional	Bypass	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
Lbs calf weaned/cow exposed	388	412	424
Calf value at weaning, \$	388	412	424
Calf income difference, \$	--	24	36
Feed cost difference, \$	--	1.05	8.05
Net income difference, \$	--	22.95	27.95