# AN ALTERNATIVE SUPPLEMENTATION SCHEDULE WITH AND WITHOUT LASALOCID FOR WINTERING BEEF COWS

J.J. Wagner[1], K.S. Lusby[2] and J. Rakestraw[1]

## Story in Brief

Feeding low levels of protein supplement with and without lasalocid during late summer, early fall and May was compared to a conventional mid-November through April supplementation schedule. Thirty-six lactating Hereford and 17 lactating Angus cows, bred to calve in spring of 1983, were allotted to three supplemental protein treatments: control (supplemented from mid-November through April 26, 1983), protein (supplemented in small amounts in late summer, early fall and May as well as from November to April 26) and protein plus lasalocid (supplemented like the protein treatment but with 200 mg lasalocid/head/day added to the supplement). During late summer and early fall, cows fed protein or protein plus lasalocid gained more ($P<.01$) weight and condition than control cows (52.0 lb, .42 units and 54.9 lb, .42 units versus 26.7 lb and -.15 units). Early supplementation maintained higher ($P<.05$) milk production (5.64 and 5.47 lb versus 3.87 lb, respectively). Forage intake estimates in fall were not significantly effected by treatment. From November 10 until January 4, cows on the control treatment were fed 1 lb/head/day more supplement than cows on the early protein or lasalocid treatments. From November 10 until calving and from calving until April 26, 1983, weight and condition changes were similar for all treatments. From April 27 to May 24, 1983, protein and protein plus lasalocid cows tended to gain more weight than unsupplemented control cows (17.1 and 22.3 lb versus .4 lb, respectively). Cows fed the lasalocid supplement lost 30 lb less ($P<.06$) weight from August 4, 1982 to May 24, 1983 than the control or protein cows. Feeding small amounts of protein during late summer and early fall, may efficiently increase cow weight and condition entering the winter. Likewise, feeding small amounts of protein during May, may efficiently increase cow weight and condition entering the summer. The addition of 200 mg lasalocid/head/day may reduce winter weight loss by cows grazing dormant range.

## Introduction

Timing of supplemental feeding of the cow herd has changed very little during the past several years. Typically, oil seed meal-based protein supplements are fed to spring calving cows grazing dormant winter range from mid-November until late April. Feeding protein supplement to range cows has been shown to increase both forage digestibility and intake. Feeding low levels of protein in late summer and early fall increased weight gains by stocker cattle grazing native range. Lasalocid, a polyether ionophore, improves average daily gain and feed efficiency in feedlot and stocker cattle. The effects of lasalocid on cow performance are unknown.

The objectives of this study were: (1) to determine the effect of feeding small amounts of supplemental protein, during late summer, early

[1]Graduate Assistant [2]Associate Professor, Animal Science

fall and late spring on cow weight and condition change, milk production and calf gain, (2) to see if the added weight and condition of early supplemented cows could reduce the total yearly supplement required and (3) to determine the effects of lasalocid on cow performance during late summer, fall, winter and spring.

## Materials and Methods

Thirty-six lactating Hereford (948 lb) and 17 lactating Angus (829 lb) cows, bred to calve in the spring of 1983, were stratified by breed, weight, condition score and expected calving date and allotted to three supplemental protein schedules on August 4, 1982 (Table 1). From August 4 until November 9, 1982, cows on the protein or protein plus 200 mg lasalocid treatment received .6 lb of a soybean meal based supplement/head/day (Table 2). Control cows were fed in a more conventional manner and did not receive supplement until November 10. Daily supplement levels fed to the control groups from November 10 to January 4, 1983 were adjusted biweekly to insure that all groups calved in similar body condition. Since Angus cows tended to be in poorer condition than Hereford cows, Angus cows were fed more supplement than Hereford cows in

**Table 1. Supplementation schedule.**

| | Supplement Intake[a] | | | | | |
|---|---|---|---|---|---|---|
| | Control | | Protein | | Protein+Lasalocid[b] | |
| Date | Angus | Hereford | Angus | Hereford | Angus | Hereford |
| Aug. 4-Nov. 9, 1982 | 0 | 0 | .6 | .6 | .6 | .6 |
| Nov. 10-Jan. 4, 1983 | 3.5 | 3 | 2.5 | 2 | 2.5 | 2 |
| Jan. 5 - calving | 5 | 3 | 4 | 3 | 4 | 3 |
| Calving-Apr. 26, 1983 | 5 | 4 | 5 | 4 | 5 | 4 |
| Apr. 27-May 24,1983 | 0 | 0 | .6 | .6 | .6 | .6 |
| Aug. 4, 1982-Apr. 26, 1983[c] | 740 | 549 | 696 | 553 | 696 | 553 |
| Aug. 4, 1982 - May 24, 1983[c] | 740 | 549 | 713 | 570 | 713 | 570 |

[a]Pounds per head per day.
[b]200 mg lasalocid per head per day.
[c]Total lb per head.

**Table 2. Supplement composition.**

| Ingredient | Percent (as fed) |
|---|---|
| Soybean meal | 87.5 |
| Limestone | 1.5 |
| Dicalcium phosphate | 10.0 |
| Potassium chloride | 1.0 |

an attempt to attain similar body condition scores for both breeds. Control Hereford and Angus cows received 3 and 3.5 lb supplement per head per day, respectively. Hereford and Angus cows, following the early supplement regimes, were fed 2 and 2.5 lb supplement per head per day. From January 5 until calving, all Hereford cows received 3 lb supplement per head per day. Angus control cows received 5 lb per head per day while the early supplemented Angus cows were fed 4 lb per head per day. From calving until April 26, all Angus cows were fed 5 lb per head per day. Hereford cows received 4 lb per head per day. During May, the same feeding regimes as previously described for the period from August 4 to November 9 were followed.

During the 294-day trial, all cattle grazed together in pastures of native tallgrass range in north central Oklahoma. The predominant forage species were little bluestem, switchgrass, big bluestem and Indian grass. Cattle were gathered from pastures at 8:00 a.m., three days each week and fed their supplements individually in covered feeding stalls. Supplement levels were prorated to accommodate feeding three times per week. Cattle were weighed and scored for body condition (1=very thin, 9=very fat) after an overnight shrink (16 hr) at 14-day intervals throughout the trial.

Average daily milk production was estimated on August 4 and October 12 using the calf weigh-suckle-weigh technique. Forage intake was estimated in September and March utilizing chromium dilution to determine fecal output and IVDMD of hand clipped forage samples as an index for forage digestibility.

## Results and Discussion

Weight and body condition changes for cows during the trial are shown in Table 3. During late summer and early fall, cows receiving supplement or supplement plus lasalocid gained more ($P<.002$) weight and body condition than unsupplemented control cows (52 lb and .42 units, 54.9 lb and .42 units versus 26.7 lb and -.15 units, respectively). Forage intake estimates (Table 4) were not different between treatments. However, a feed conversion estimate of approximately 2.3 lb of supplement for each additional pound of gain suggests that forage intake and/or digestibility of late summer and early fall was increased due to early supplementation.

Fall milk production estimates and 1982 weaning weights are presented in Table 4. Cows that were fed protein supplement or protein supplement plus lasalocid maintained higher ($P<.05$) milk production than unsupplemented cows (5.64 and 5.47 lb versus 3.87 lb, respectively). This difference, however, was not reflected in calf gain as weaning weights in 1982 were similar for all treatments (400 lbs).

From November 10 until January 4, 1983, cows that had received supplement during late summer and early fall were fed 1.0 lb/head/day less supplement (Table 1) in order for them to calve in about the same condition as control cows. By calving, total supplement fed to all three treatments was approximately equal, and average condition score at calving was 5.0 for the control and early protein groups and 5.3 for the lasalocid treatment. From November 10 until just prior to calving, weight and body condition losses were not significantly different for all treatments (-5.7 lbs and .02 units for the control cows, -21.7 lb and -.47 units for the early protein cows, and -8.7 lbs and -.33 units for the lasalocid cows).

**Table 3. Cow weight and condition change.**

| Time Period | Treatment[a] Control | Protein | Protein+Lasalocid |
|---|---|---|---|
| Aug. 4-Nov. 9, 1983 | | | |
| Weight change, lb | 26.7[d] | 52.0[c] | 54.9[c] |
| Condition[b] change, units | -.15[d] | .42[c] | .42[c] |
| Nov. 10-calving | | | |
| Weight change, lb | -5.7 | -21.7 | -8.7 |
| Condition change, units | .02 | -.47 | -.33 |
| Calving-April 26, 1983 | | | |
| Weight change, lb | 4.2 | -2.2 | 1.1 |
| Condition change, units | -.04 | -.04 | -.07 |
| April 27-May 24, 1983 | | | |
| Weight change, lb | .4 | 17.1 | 22.3 |
| Condition change, units | -.1 | -.07 | -.09 |
| Aug. 4-April 26, 1983 | | | |
| Weight change, lb | -94.9 | -113.6 | -88.7 |
| Condition change, units | -.26 | -.39 | -.21 |
| Aug. 4-May 24, 1983 | | | |
| Weight change, lb | -94.5[f] | -96.5[f] | -66.4[e] |
| Condition change, units | -.36 | -.46 | -.30 |

[a] Least squares means adjusted for cow breed, initial weight, initial condition and calving date.

[b] 1=very thin, 9=very fat.

[cd] Means in same row with different superscripts differ ($P<.002$).

[ef] Means in same row with different superscripts differ ($P<.06$).

Differences in weight and body condition changes between treatments from shortly after calving until April 26 were not significant. All cows essentially maintained their post calving weight until April 26. In addition, total weight and condition changes from August 4 until April 26 were not significantly different (-94.9 lb and -.26 units, -113.6 lb and -.39 units and -88.7 lb and -.21 units for the control, early protein and lasalocid groups, respectively). Forage intake estimates (Table 4) in March were not significantly different between treatments. Cows on all treatments consumed about 19 lbs of forage daily.

During May, cows that were fed protein supplement or supplement containing lasalocid tended to gain more weight than unsupplemented control cows (17.1 and 22.3 lb versus .4 lb, respectively). For the entire season from August 4 to May 24, 1983, cows fed 200 mg lasalocid lost less ($P<.06$) weight than cows on the control or altered supplementation schedule (-66.4 lb versus -94.5 and -96.5 lb, respectively).

Calf average daily gain from calving until May 24 and calf weaning weights in 1983 were not effected by treatment (Table 4). At weaning, calves from the control, altered protein and lasalocid treatments weighed 329, 336 and 335 lb, respectively.

**Table 4. Milk production, calf weight and fall and winter forage intake.**

| Item | Treatment | | |
|---|---|---|---|
| | Control | Protein | Protein+Lasalocid |
| Milk production:[a] | | | |
| Aug. 4, 1983, lb | 6.50 | 6.67 | 5.74 |
| Oct. 10, 1983, lb | 3.87[c] | 5.64[b] | 5.47[b] |
| Oct.-Aug., lb | -2.63[c] | -1.03[b] | -.27[b] |
| Calf weaning weight, 1982, lb | 413 | 392 | 396 |
| Calf ADG (calving-May 24, 1983), lb[d] | 1.5 | 1.5 | 1.6 |
| Calf weaning weight, 1983, lb[d] | 329 | 336 | 335 |
| Forage intake:[e] | | | |
| Oct., 1982, lb | 22.3 | 23.6 | 24.4 |
| Mar., 1983, lb | 20.4 | 17.4 | 18.7 |

[a] Least squares means adjusted for breed of cow, calf age, calf breed, calf sex and calf weight.

[bc] Means in same row with different superscripts differ ($P<.05$).

[d] Least squares means adjusted for breed of cow, calf age, calf sex, initial cow weight and condition.

[e] Least squares means adjusted in October for breed of cow, cow weight and cow condition, and in March for breed of cow, cow weight, cow condition and calving date.

## Conclusions

Providing part of the yearly protein supplement in small amounts to cows during late summer and early fall can efficiently increase cow weight and condition prior to winter. Higher levels of milk production appear to be maintained although calf weight is not increased due to early supplementation. By April 26, after all cows had received similar amounts of supplement, any advantage gained in cow weight and condition appears to be lost as weight and condition losses were similar for both supplementation schedules (-94.9 lb for the control cows and -113.6 lb for the early protein cows). The feeding of .6 lb protein supplement or .6 lb protein supplement containing lasalocid/head/day increased weight gains in May over the control cows by 16.7 and 21.9 lb, respectively. For the entire period, from August 4 to May 24, 1983, timing of supplemental protein feeding did not effect total weight change (-94.5 for the control and -96.5 for the altered supplementation group). The addition of 200 mg lasalocid to the altered supplementation schedule appears to reduce ($P<.06$) weight loss by 30 lbs during the entire season.