

WEANING MANAGEMENT STUDY

D.G. Landblom and J.L. Nelson

Stress, trauma, weight loss, and an undesirable amount of sickness characterize the events experienced by a calf that has just been weaned. These events are stimulated by a multitude of changes that a freshly weaned calf must adjust to; the first and most traumatic being the calf's loss of association and protection provided by its mother. In addition, when the calf is weaned directly into a drylot, it must also adjust to changes in its environment, feed type and physical form, as well as in many cases, dusty lots and water type.

The purpose of this trial is to evaluate three different methods of weaning that range from an abrupt separation of cow and calf and placement in drylot, to a transitional step by step weaning in which all changes don't occur simultaneously. Stress may be minimized and continued strong gains may be experienced using a transitional scheme. Using a 30-40 day backgrounding period, any carry over effects will be measured.

The following three comparisons are being evaluated:

1. Conventional drylot weaning (control).
2. Short term pre-wean creep feeding (28 days) followed by drylot weaning with creep feed.
3. Short term pre-wean creep feeding (28 days) followed by weaning on native range pasture with creep feed for 2 weeks before being moved to drylot with creep feed.

Twenty-six Hereford and Angus X Hereford cow-calf pairs ranging in age from 3 to 11 years were used in each of the treatments briefly described above. In 1982, the pre-weaning creep feeding period ran from September 29th to October 27th.

Group I – Conventional Weaning (control) grazed native range with no supplementation except minerals until weaning on October 27th. At weaning, the calves were separated from their mothers, weighed, and transported by trailer to drylot holding pens where they were started on a low energy/high roughage complete mixed ration as shown in Table 1.

Group II – Calves in this treatment grazed native range and had access to a self-fed creep ration consisting of 62% dry rolled oats, 33% dry rolled barley, 5% molasses and Vitamins A and D. When weaned on October 27th, the calves were weighed, and transported by trailer to drylot where they were given free-choice chopped mixed hay in the bunk-line and had free choice access to the same self-fed creep feed ration fed on pasture. The creep ration was fed using portable wooden creep feeders.

Group III – Pasture weaning characterized this treatment. The cows and calves grazed native range and the calves had access to creep feed during the pre-weaning period. Creep feed composition was the same as that used in Treatment II. On weaning day for Groups I and II, Group III was moved to a 40 acre ungrazed native pasture that had been set aside. Cows in this group remained with their calves for one week, which allowed the calves' time to adjust to their new surroundings, and to find the water source, mineral feeder, and creep feeder. After this short adjustment period, the cows were removed; calves weighed and turned out to continue grazing and eating creep feed for an additional two weeks. Following the two week grazing, they were reweighed, placed in drylot, given access to the same self-fed creep ration fed on pasture, and fed chopped mixed hay free choice in the bunk line.

After the pasture weaned group was in the drylot environment for 10 days, calves in all treatments were switched to a complete mixed ration containing 45% dry rolled oats, for a 39-day growing period.

While initial weights were being taken on pasture, the calves were vaccinated with a 7-way vaccine to protect them from diseases associated with clostridium organisms. Final weights were taken following an overnight feed and water shrink.

Composition of as fed rations are shown in Table 1, and consumption and economics are shown in Table 2.

Weight changes were monitored at selected intervals throughout the experiment. A summary of weight fluctuations by interval is given in Table 3 for the 30-day period following weaning. Table 4 contains a summary of pre-weaning, post-weaning (30 day), short backgrounding, and combined results.

Summary:

1. No unusual physical problems were encountered with conventionally weaned and creep fed calves moved directly to drylot at weaning. Although not a big problem, cows from calves weaned on pasture managed to work a gate loose and get back along side to set aside pasture and had to be driven back. Strong fences and considerable distance between cows and weaned calves is very important.
2. Short term (28 days) late fall creep feeding aided in reducing weaning stress as measured by total weight gain and interval weight changes.
3. Calves weaned conventionally lost significantly more weight during the first week following weaning. By two weeks post-weaning daily feed intake and body weight gain had increased significantly and leveled off by three weeks post-weaning time.

4. Cost per pound of gain was very similar among different methods. Calves creep fed on pasture and weaned into drylot with creep ration were the most efficient, gaining 111 pounds during the period at a cost of 33¢ per pound of gain. Conventionally weaned calves gained 102 pounds at a cost of 35.5¢ per pound of gain. Pasture weaned calves gained slightly slower, 95 pounds, at a cost of 38.4¢ per pound of gain. Calves pasture weaned utilized less total pounds of processed feed, but also gained slower and were slightly less efficient than their drylot confined counterparts. While their overall gains were slower, the large initial weight loss followed by heavy fills measured in Group I were not experienced in Group III. In terms of weight loss immediately after weaning, Group II was intermediate.
5. Illness among calves was encountered in all treatments, and ranged from one case of hardware disease and two cases of coccidiosis to scattered cases of upper respiratory illness. It should be noted that no illness was detected in calves weaned on pasture until they moved into the drylot environment.
6. This trial will be continued to measure effects of yearly variation.

Table 1. Creep Feed and Complete Mixed Rations Used

| Creep Feed | | | |
|---------------------------------------|--------------------|------------------------------|------------------------------|
| Dry Rolled Grain Mixture: | | | |
| Oats, % | 62 | | |
| Barley, % | 33 | | |
| Molasses, % | .5 | | |
| Vitamin A, IU/lb. | 5,000 | | |
| Vitamin D, IU/lb. | 500 | | |
| Mixed Ration: | Base Ration | 1st Change | 2nd Change |
| Mixed Hay, % | 74 | 64 | 54 |
| Dry Rolled Oats, % | 25 | 35 | 45 |
| T.M. Salt, % | .5 | .5 | .5 |
| Di cal, % | .5 | .5 | .5 |
| Vitamin A, IU/lb. | 5,000 | 5,000 | 5,000 |
| Complete Mixed Growing Ration: | | | |
| Mixed Hay, % | 54 | | |
| Dry Rolled Oats, % | 45 | | |
| T.M. Salt, % | .5 | | |
| Di cal, % | .5 | | |
| Vitamin A, IU/lb. | 5,000 | | |
| | 100% | | |

**Table 2. Feed Consumption and Economics among Calves Comparing
Three Weaning Management Methods**

| | Control Conventional Weaning | Pasture Creep Drylot Weaning W/Creep | Pasture Creep Pasture Weaning W/Creep Drylot W/Creep |
|--------------------------------------|---|---|---|
| Number Head | 26 | 25 | 26 |
| Creep Feed before weaning, lbs. | | 1422 | 2154 |
| Lbs./Head | | 56.9 | 82.8 |
| Total Creep Cost, \$ | | 68.28 | 103.66 |
| Creep Cost/hd., \$ | | 2.73 | 3.99 |
| Creep on Pasture after weaning, lbs. | | | 1654 |
| Lbs./Head | | | 63.6 |
| Total Creep Cost, \$ | | | 81.70 |
| Creep Cost/hd., \$ | | | 3.14 |
| Pasture Cost/hd., \$ | | | 3.20 |
| Drylot Phase: | | | |
| Mixed Hay, lbs. | | 1735 | 922 |
| Cost/head, \$ | | 2.08 | 1.06 |
| Creep feed, lbs. | | 6518 | 2060 |
| Cost/head, \$ | | 12.19 | 3.72 |
| Mixed Ration, lbs. | 24941 | 12742 | 14192 |
| Cost/head, \$ | 36.31 | 19.65 | 21.37 |
| Total Cost, \$ | 36.31 | 36.65 | 36.48 |
| Total Gain, lbs. | 102 | 111 | 95 |
| Cost/lb. Gain, ¢ | 35.5 | 33.0 | 38.4 |
| Treatments: | 1 lung cong. 2 coccidiosis | 2 lung cong. 1 hardware disease | 2 lung cong. |

Table 3. Weight Gains at Selected Intervals during the 30-Day Period Following Weaning on October 27th

| | Selected Intervals | | | Average 30-Day Post Weaning Gain |
|---|--------------------|---------|---------|--|
| | Nov. 3 | Nov. 16 | Nov. 26 | |
| Days between each weighing | 7 | 13 | 10 | 30 |
| Treatment I: | | | | |
| Conventional-weaning (Control) | -2.06 | 3.36 | .01 | 1.11 |
| Treatment II: | | | | |
| Pasture creep-Drylot wean with creep | -.15 | 2.75 | -.01 | 1.15 |
| Treatment III: | | | | |
| Pasture creep/Pasture wean with creep/ Drylot with creep | ^{1/} | .77 | 1.61 | .97 |

^{1/} Weaned on pasture one week after Groups II and III.

Table 4. Weight Gains among Calves Using Three Weaning Management Methods

| | Pre-Weaning Gain | 30-Day Post-Weaning Gain | Post Weaning Backgrounding | Combined Gains |
|--|------------------|--------------------------|----------------------------|----------------|
| Days | 28 | 30 | 39 | 97 |
| Conventional-weaning (Control) | 1.26 | 1.11 | .91 | 1.05 |
| Pasture creep Drylot wean with creep | .64 | 1.15 | 1.47 | 1.14 |
| Pasture creep Pasture wean with creep Drylot with creep | .86 | .97 | 1.18 | .97 |