

## **Weaning Management Study**

By

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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 a drylot, to a 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.

Hereford and Angus X Hereford cows ranging in age from 3 to 13 years of age and their crossbred calves have been randomly assigned to each of the treatments described above. This investigation is in its' second year and began with the fall weaning of 1982 and was repeated the following fall in 1983. The study was started on September 29<sup>th</sup> of both years and weaning was done on October 27<sup>th</sup> one year and the 28<sup>th</sup> the next year.

During the thirty day period after weaning, the calves were weighed at 7 or 10 days intervals and their weight fluctuations recorded.

At the end of the thirty day monitoring period, the calves were switched from the experimental weaning rations to complete mixed rations and fed in a short backgrounding program to evaluate the long term effects that these different weaning methods might have.

Group I served as the control group and received minerals as their only supplement. When weaning, the calves were transported by trailer to drylot pens where they were started on complete mixed low energy with high roughage rations shown in Table 1.

Group II cows and calves grazed native range as did Group I but 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, they too were transported by trailer to drylot pens but the ration available was the self-fed creep ration just described and chopped mixed hay in the bunkline. The creep ration was fed in portable wooden creep feeders.

Group III calves were creep fed on native pasture exactly like the calves in Group II. When weaned, however, the calves remained on native range and self-fed creep rations for an additional two weeks and then were moved to drylot where they received the self-fed creep ration and chopped mixed hay in the bunkline as described for Group II.

When the trial was started in late September, all calves were booster vaccinated with a 7-way clostridium bacterin.

Ration composition used is shown in Table 1.

Feed consumed and economics of each phase of the investigation are shown by feeding year in Tables 2 and 3. These values have not been averaged to show fluctuations.

Fluctuations in daily gains among the various experimental groups are shown by calendar year in Table 4.

### **Summary:**

1. Weaning calves using any one of the methods being evaluated was done without complications. Calves weaned on pasture were not a problem. However, it must be noted that the cows were pastured a considerable distance from their freshly weaned calves.
2. Weight changes following weaning fluctuated substantially both within years and between years during the 30 day period after weaning. The conventionally weaned calves had the widest fluctuation. This group of calves lost weight during the first 5-7 days in drylot. Once they stopped bawling and really went to eating, they took on tremendous fills resulting in weight gains approaching 4 pounds per day. Calves that were given creep feed for 28 days before weaning bawled for their mothers, but were at the feeders more and walked the fenceline less. Based on the steady gains and less fluctuation in gains following weaning it is evident that the creep fed calves experienced less stress.
3. Calves weaned on pasture had the slowest gains but also demonstrated the least erratic gain pattern following weaning. This indicates that the customary practice of separating calves from cows and moving them immediately to a drylot environment is stressful in addition to the separation of calf and mother.

4. Illness followed an interesting pattern. No illness has been encountered in calves weaned on pasture until they were moved into drylot. Illness in all of the weaning methods has been limited, and in nearly all cases response to treatment was good. In one case, however, a control group heifer died of pneumonia.
5. Short term (28 days) fall creep feeding before weaning cost an average \$3.59 per calf. Creep feed consumption was 75 pounds and cost \$.0478 cents/pound. Only one experimental group remained on pasture after weaning and their average creep feed consumption increased to 87.7 pounds (range 63.6 to 112.1) for the additional two weeks spent on pasture. Feed for this period cost an average \$4.27 (range \$3.14 to \$5.39).

Calves creep fed on pasture and weaned directly into drylot with creep feed and chopped mixed hay in the bunkline posted the best overall performance gaining an average 16 pounds more during the entire study than the control group. Using a calf value of 65¢ per pound an average gross return of \$10.40 per calf can be realized from this system. The net return over creep feed for this group using this economic model would be \$6.81.

6. This study will be continued one more weaning season to see if differences measured the past two seasons continue.

**Table 1. Creep Feed and Complete Mixed Rations Used**

<b>Creep Feed</b>			
<b>Dry Rolled Grain Mixture:</b>			
Oats, %	62		
Barley, %	33		
Molasses, %	.5		
Vitamin A, IU/lb.	5,000		
Vitamin D, IU/lb.	500		
<b>Mixed Ration:</b>			
	<b>Base Ration</b>	<b>1<sup>st</sup> Change</b>	<b>2<sup>nd</sup> Change</b>
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
<b>Complete Mixed Growing Ration:</b>			
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 Fall 1982**

	<b>Control Conventional Weaning</b>	<b>Pasture Creep Drylot Wean- W/Creep</b>	<b>Pasture Creep Pasture Wean- W/Creep Drylot W/Creep</b>
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
<b>Drylot Phase:</b>			
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
<b>Treatments:</b>	1 lung cong. 2 coccidiosis	2 lung cong. 1 hardware disease	2 lung cong.

**Table 3. Feed Consumption and Economics among Calves Comparing Three Weaning Management Methods Fall 1983**

	<b>Control</b>	<b>Pasture Creep Drylot Wean- W/Creep</b>	<b>Pasture Creep Pasture Wean- W/Creep Drylot W/Creep</b>
Number Head	16	17	17
Creep Feed Before Weaning, lbs.		1400	1300
Creep Lbs./Head		82.4	76.5
Total Creep Cost, \$		67.38	62.57
Creep Cost/Head, \$		3.96	3.68
Creep Feed on Pasture after Weaning, lbs.			1906
Creep Lbs./Head			112.1
Total Creep Cost This Phase, \$			91.69
Creep Cost/Head, \$			5.39
Pasture Charge/Calf, \$			3.20
<b>Drylot Phase:</b>			
Mixed Hay, lbs.		2325	720
Cost/Head, \$		4.44	1.38
Creep Feed, lbs.		5655	1920
Cost/Head, \$		15.20	5.16
Complete Mixed Ration, lbs.	18217	11870	10330
Cost/Head, \$	44.73	27.98	24.36
Total Cost/Head All Phases, \$	44.43	51.59	43.17
Total Gain/Head, lbs.	137.0	159.9	135.6
Feed Cost/Lb. of Gain, \$	.3243	.3226	.3184
<b>Treatments:</b>	1 heifer died due to pneumonia		1 steer scoured

**Table 4. 1982 and 1983 Daily Gain Changes among Calves Weighed at Selected Intervals during the Month Following Weaning**

1982 Weaning	Selected Intervals			Average 30 Day Post Weaning Gain
	Nov. 3	Nov. 16	Nov. 26	
Days between each weighing	7	13	10	30
<b>Treatment 1:</b>				
Conventional-weaning (Control)	-2.06	3.36	.01	1.11
<b>Treatment II:</b>				
Pasture Creep-Drylot Wean With Creep	-.15	2.75	-.01	1.15
<b>Treatment III:</b>				
Pasture Creep/Pasture Wean with Creep/ Drylot with Creep	<u>1/</u>	.77	1.61	.97
<b>1983 Weaning</b>				
	Nov. 7	Nov. 17	Nov. 28	
Days between weighings	10	10	11	31
<b>Treatment 1:</b>				
Conventional-weaning (Control)	4.00	.38	2.11	2.16
<b>Treatment II:</b>				
Pasture Creep Feed Drylot Wean W/Creep	2.45	.55	3.18	2.10
<b>Treatment III:</b>				
Pasture Creep/Pasture Wean-Drylot with Creep	2.15	.20 <u>2/</u>	1.11	1.16

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

2/ Moved from fall pasture into drylot on Nov. 17<sup>th</sup>.