



Current Report

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Spreadsheet Program To Estimate Returns From Creep Feeding

Keith S. Lusby, Extension Beef Cattle Specialist
Donald R. Gill, Extension Animal Nutritionist
Oklahoma State University

This spreadsheet program can be used to calculate the costs and returns from creep feeding. It was originally written using VISICALC but can easily be converted to other spreadsheet software. Creep feeding is a practice that is highly dependent on factors such as season, forage quality and quantity, milk production of the cows, etc. Suggestions for various input items are given in this current report. Before using greatly different inputs, users should consult qualified extension specialists.

Creep Feeding

Creep feeding is the practice of providing nursing calves access to supplemental feed. Conventional creep feeds have been mixtures of corn, milo, oats, molasses and roughage sources such as alfalfa pellets or cottonseed hulls. The creep feeds are typically fed free-choice with daily intakes ranging from 3 to 6 lb/head/day depending on forage availability and calf age. Under the economic conditions that have prevailed during the past few years, creep feeding has seldom been profitable for commercial cow-calf operations. Feed costs have simply been too high in relation to the value of added gain from creep feeding. Many purebred breeders creep feed their calves because the size and appearance of purebred animals is important to buyers. Commercial cattlemen, however, must analyze creep feeding on the basis of the costs and returns of increasing weaning weights of calves.

Factors Affecting the Profitability of Creep Feeding

Price spread is an important factor that must be considered before implementing any management practice that increases sale weight of calves. The price paid per pound of calf usually decreases as the weight of the calf increases. There have been periods when cattle feeders have paid more per pound for heavy calves than for lighter weight calves, but the predominant pattern has been for higher prices per pound for the lighter weights. If a practice such as creep feeding increases the weight of a calf to the extent that some decrease in the price per pound is seen, the effect is to reduce the value of the added weight. In other words, if 400 lb calves sell for \$70/cwt and 450 lb calves sell for \$68/cwt, the added

weight between 400 and 450 pounds is not worth \$70/cwt. The program described here takes price spread into account and calculates the value of added gain.

The other major factor to consider in a creep feeding program is the efficiency of conversion of creep feed to added weaning weight. Remember that there will be a weaning weight without creep. In general, the higher the level of nutrition of the calf without creep, the poorer the conversion of creep to added gain. If calves are nursing heavy milking cows and are grazing excellent forages, they are likely to be gaining very nearly at their full potential. Added feed in the form of creep cannot increase the rate of gain to any extent, and therefore, the calves will substitute creep feed for forage that they would have otherwise consumed.

The best conversions of creep to added gain will occur when calves are receiving suboptimal levels of nutrition. Such conditions are found when calves nurse poor milking cows and/or when forage conditions are poor, usually in late summer, fall and winter. Estimates of conversions of grain-based creep feeds, fed free-choice at daily intakes of 4-6 lb/head/day, are shown below. These estimates are derived from research trials in Oklahoma and other states. If producers have more reliable estimates for their individual situations, these estimates should be substituted.

Estimated conversions of 1b creep:1b of added gain:

Grain-based creep feeds:

winter	5:1 to 9:1
early summer	10:1 to 15:1
mid to late summer	9:1 to 12:1

Recent research in Oklahoma has shown that limit-fed high protein creep feeds can produce very efficient weight increases in nursing calves. Work with spring-born calves grazing native range with their dams from late July through September and with fall-born calves grazing bermudagrass with their dams during June and July increased weaning weights with an efficiency of 2.25 to 2.75 lb of cottonseed meal per pound of added weaning weight. Soybean meal could be substituted for cottonseed meal depending on supply and price. High protein creep feed will work when forage protein is low and when forage supplies are adequate. The mode of action of added protein is to increase forage intake and digestibility. Adequate forage must be available. It is probably not feasible to feed more than 1.5 pounds/head/day of high protein creep feed. Most of the increased forage intake and digestibility is achieved with the first 1 to 1.5 pounds of supplement, and after that, additional protein is used as an energy source.

The technique used to limit feed high protein creep to calves has involved adding salt to either cottonseed meal or soybean meal. Typically, meal is fed alone for a period of 7 to 10 days during which time the calves find the creep feeding area and begin to consume creep. The desired 1 lb/head/day intake level is usually achieved within 2-3 weeks with a salt level of about 10 percent. Commercial creep feeders may be used although "whirlwind" type mineral feeders with rubber pans work well.

USING THE PROGRAM

The screen display for this spreadsheet is shown in Table 1. The user needs to input the following:

1. Expected weaning weight without creep
2. Pounds of creep to be fed/head/day
3. The cost/ton of creep feed
4. The expected conversion of creep to added gain. Suggested values listed at the bottom of the program.
5. The interest rate to be paid for creep feed and misc. costs
6. Cost for misc. items such as equipment, fuel, labor, etc.
7. The expected prices for calves at sale time. This is important because it will affect the value of added weight as previously discussed.

No other values can be changed. If the user attempts to change a calculated value, the equation that generates the value will be erased. Some spreadsheets allow the user to "protect" equations so that they cannot accidentally be erased. If this option is available, it should be used. As inputs are keyed in, the program automatically updates all calculations. A "lookup" function allows the program to search the price structure table and select the sale price listed for calves of the new weight.

Based on the costs of the creep feeding program, including interest on feed and misc. expenses, and the new sale price of creep-fed calves, additional values that are useful in analyzing a creep feeding program are generated. Included are costs of added gain, value of added gain and returns from creep feeding. Interest, as calculated in the program, includes interest charges for feed and misc. expenses, and charges interest for the entire creep feeding period.

A listing of equations used in the program is shown in Appendix 1. This listing is provided for users who wish to key in the program themselves.

Appendix 1. Program listing.

>G40:G37-G38	>G25:@LOOKUP(G23,G11...G16)
>G38:(G29+G30+G32)*G24	>E25:@LOOKUP(E23,G11...G16)
>G37:G26-E26	>G24:G23-E23
>G35:G29+G30+G32	>G23:E23+((E8/E12)*E9)
>G34:(G26-E26)/G24	>E23:E7
>G32:G31/G24	/W1
>G31:(G28+E14)*E9/365*(E13*.01)	/GOR
>G30:E15/G24	/GRM
>G29:G28/G24	/GC9
>G28:E8*E9*E10/2000	/X>A1:>A1:
>G26:G23*(G25/100)	
>E26:E23*(E25/100)	

TABLE 1

ROW	A	B	C	COLUMN D	E	F	G	H
1	OSU CREEP							
2	CREEP FEEDING ANALYSIS							
3	-----							
4	-----							
5	INPUTS:						Price structure	
6	Expected weaning weight						at sale weights	
7	without creep			=====	385	-----		
8	Pounds of creep fed/day			=====	1.00	Weight	Price	
9	Number of days creep is fed			=====	100	lbs	\$/cwt	
10	Cost of creep feed (\$/ton)			=====	200.00	=====		
11	Conversion of creep to added					300	70.00	
12	gain (see below)**			=====	2.50	350	69.50	
13	Interest rate (%)			=====	15.00	400	69.00	
14	Misc. costs, equip, labor,					450	68.50	
15	fuel, etc. (\$/head)			=====	1.50	500	68.00	
16						550	67.50	
17								
18	Numbers below are calculated. Do not attempt to change.							
19	-----							
20					No	With		
21					Creep	Creep		
22					-----	-----		
23	Expected weaning weight				385	425.00		
24	Added weaning weight (lb)					40.00		
25	Price at weaning (\$/cwt)				69.50	69.00		
26	Value of weaned calf (\$)				267.58	293.25		
27								
28	Total feed cost (\$)					10.00		
29	Cost of feed/lb of added weight (\$)					0.25		
30	Misc. costs/lb of added weight (\$)					0.04		
31	Interest cost/head (\$)					0.47		
32	Interest cost/lb of added weight (\$)					0.01		
33								
34	Value of added weight/lb (\$)					0.64		
35	Total cost/lb of added weight (\$)					0.30		
36								
37	Total value of added weight (\$)					25.68		
38	Total cost of added weight (\$)					11.97		
39						-----		
40	Returns from creep feeding (\$)					13.70		
41	-----							
42	-----							
43								
45	* * * * *							
46	* ** Expected conversions of 1b creep:1b of added gain ** *							
47	* High protein: 2:1 to 3:1 (1 lb/head/day feeding rate) *							
48	* *							
49	* Grain creep: (assumes free-choice intake of 4-6 lb/head/day) *							
50	* winter				5:1 to 9:1	*		
51	* early summer				10:1 to 15:1	*		
52	* mid to late summer				9:1 to 12:1	*		
53	* * * * *							
54								
55	Developed by Dr. Keith S. Lusby, Extension Beef Cattle Specialist, Dr. Donald R. Gill, Extension Animal Nutritionist.							
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