

Drylot Backgrounding and Finishing Beef

Department of Agricultural Economics



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Rodney Jones
Agricultural Economist
Livestock Production

Production Level

Costs per unit and net returns in livestock production are highly dependent on production levels. The following estimated budget includes two different production levels. Production levels vary for a number of reasons including livestock quality or genetics, weather, input levels, and management. The two production levels included in this estimated budget reflect production variability due to weather and management as opposed to the quality of the livestock, since livestock values are held constant. Budgeting at multiple production levels can help producers examine the financial risk of a livestock enterprise that is directly related to production risk.

This beef backgrounding and finishing budget includes a below-average column as well as an above-average column for both steer and heifer feeding. Performance varies due to differences in average daily gain and feed conversions. The values assumed are included in Table 1 and are deviations from long-term averages.

Costs

Operating costs vary in the short run and can differ on a per-head basis from one feeding cycle to the next. The feed requirements used in this budget include additional roughage and grain to allow for waste. Feeding conditions will vary throughout the feeding period, which will alter projected weight gain. If poor feeding conditions are encountered, weight gains will be less than those projected. For this budget, steers and heifers are assumed to be backgrounded on a ration consisting of sorghum silage, grain sorghum, and supplement, and switched to a finishing ration consisting of alfalfa, corn, grain sorghum, and supplement. An allowance for shrink is included in the average daily gain and feed conversion estimates. Hundredweight produced is adjusted for death loss and shrink. Average daily gain may vary depending on the breed of the animals, the ration fed, and the time of the year.

Farm Management Association summary reports are used as a basis for estimating variable costs such as labor, veterinary, drugs, repairs, fuel, oil, and utilities. These cost items may vary considerably between individual producers. Each column shows interest on one-half the variable cost plus the cost of the purchased animal for the length of the feeding period. Producers who do not rely on borrowed funds should consider the interest charge as an opportunity cost of their own capital.

Ownership costs do not vary from one feeding period to the next, and are incurred by virtue of owning equipment and

facilities. Facility and equipment requirements consist of feed-storage facilities, feeding facilities, corrals, handling equipment, and watering systems. A salvage value of 35 percent is assumed at the end of useful life for facilities and equipment. In each column, interest was calculated on one-half the original cost of facilities and equipment.

This budget uses projected 2004 input and output prices for illustrative purposes. Producers should use their own prices when using this budget. The break-even price is sensitive to changes in feed and feeder prices.

Table 1. Factors Used for Cost-Return Budget

Item	Above Avg. Steer	Below Avg. Steer	Above Avg. Heifer	Below Avg. Heifer
Backgrounding Phase				
Days on feed	90	111	88	109
Average Daily Gain	2.2	1.8	2	1.6
Feed Conversion (as fed)	18.5	19.5	19	20
Purchase weight	550	550	475	475
Purchase price (\$/cwt)	93.73	93.73	91.44	91.44
Ration:				
81.5% sorghum silage, 14% grain sorghum, 4.5% supplement				
Finishing Phase				
Days on feed	142	156	144	161
Average Daily Gain	3.35	3.04	2.95	2.64
Feed Conversion (as fed)	7.9	8.7	8.25	9.05
Sale weight	1225	1225	1175	1175
Sale price (\$/cwt)	74.59	74.59	74.59	74.59
Ration:				
51% corn, 34% grain sorghum, 12% alfalfa 3% supplement*				

	Value per head
Investment in facilities	\$175.00
Life of facilities	20 yrs
Investment in equipment	\$155.00
Life of equipment	10 yrs
Salvage value on facilities and equipment	35%
Interest rate on facilities and equipment	7.00%
Insurance rate on facilities and equipment	0.25%
Tax rate on facilities and equipment	1.50%
Interest rate on variable costs and purchased livestock	7.00%
Labor hours	1.6
Labor price per hour	\$10.00

* Supplement includes soybean meal, vitamins, minerals, and an ionophore.

COST-RETURN PROJECTION — DRYLOT BACKGROUNDING AND FINISHING BEEF

	Steers		Heifers		Your Farm
	Above Ave.	Below Ave.	Above Ave.	Below Ave.	
RETURNS PER HEAD					
1. Market animal:					
steers: (See Table 1)	\$ 913.73	\$ 913.73			
heifers: (See Table 1)			\$ 801.84	\$ 801.84	
2. Less cost of animal:					
steers: (See Table 1)	515.52	515.52			
heifers: (See Table 1)			434.32	434.32	
3. Less death loss (1.5 percent of line 1)	13.71	13.71	12.03	12.03	
4. Other income					
A. GROSS RETURN PER HEAD	\$ 384.51	\$ 384.51	\$ 355.50	\$ 355.50	
COSTS PER HEAD					
5. Pasture	\$	\$	\$	\$	
6. Sorghum silage	24.28	25.59	21.82	22.97	
7. Alfalfa hay	16.96	18.68	19.58	21.47	
8. Grain sorghum	70.14	76.29	75.78	82.32	
9. Corn	86.12	94.84	99.40	109.04	
10. Supplement	29.08	31.21	29.13	31.27	
11. Other feed					
12. Labor	16.00	16.00	16.00	16.00	
13. Veterinary, drugs, supplies	13.75	13.75	13.75	13.75	
14. Marketing costs	7.00	7.00	7.00	7.00	
15. Hauling					
16. Utilities, fuel, oil	5.00	5.00	5.00	5.00	
17. Facilities and equipment repairs	8.50	8.50	8.50	8.50	
18. Professional fees (legal, accounting, etc.)	2.00	2.00	2.00	2.00	
19. Miscellaneous	4.50	4.50	4.50	4.50	
20. Depreciation on facilities and equipment	15.76	15.76	15.76	15.76	
21. Interest on facilities and equipment ¹	15.59	15.59	15.59	15.59	
22. Insurance and taxes on facilities and equipment ..	5.78	5.78	5.78	5.78	
B. SUBTOTAL	\$ 320.46	\$ 340.49	\$ 339.59	\$ 360.95	
23. Interest on purchased livestock					
+ 1/2 Operating Costs	29.65	34.64	26.41	31.30	
C. TOTAL COSTS PER HEAD	\$ 350.11	\$ 375.12	\$ 366.01	\$ 392.25	
D. RETURNS OVER TOTAL COSTS (A – C)	\$ 34.40	\$ 9.38	\$ –10.51	\$ –36.76	
24. Hundredweight produced	6.57	6.57	5.84	5.84	
25. Feed cost per hundredweight	34.51	37.56	42.08	45.74	
E. AVERAGE SELLING PRICE NEEDED PER CWT:					
(C + 2) ÷ (net selling weight) ²	\$ 71.74	\$ 73.81	\$ 75.58	\$ 78.06	
F. ASSET TURNOVER ((1 + 4 – 3)) ÷ INVESTMENT) ³	106.45%	106.45%	103.34%	103.34%	
G. NET RETURN ON INVESTMENT					
[(D + 21 + 23) ÷ INVESTMENT] ³	9.42%	7.05%	4.12%	1.33%	

¹Original cost of facilities and equipment plus salvage value divided by 2, times an interest rate of 7 percent.²Net selling weight = selling weight - (death loss% × selling weight).³Investment equals total cost of purchased animal and value of facilities and equipment.Publications from Kansas State University are available on the World Wide Web at: <http://www.oznet.ksu.edu>.Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit Rodney Jones, *Drylot Backgrounding and Finishing Beef*, Kansas State University, October 2003.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-593

October 2003

It is the policy of Kansas State University Agricultural Experiment Station and Cooperative Extension Service that all persons shall have equal opportunity and access to its educational programs, services, activities, and materials without regard to race, color, religion, national origin, sex, age or disability. Kansas State University is an equal opportunity organization. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, George E. Ham, Interim Director.