



Raising Dairy Herd Replacements

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Having good replacements for the cows that leave the milking herd each year is one of the keys to maintaining and increasing herd production. One of the decisions facing dairymen is whether to raise or purchase replacement heifers. To raise replacements requires additional facilities, feed, and labor. However, dairymen can make the maximum genetic gain more economically by using sires selected for PTA - milk and calving ease and raising their own replacements.

Feed costs account for over one-half of the cost of raising a replacement heifer. The feed costs associated with different stages of growth are shown in Table 1.

Labor requirements are most intensive during the first three months of age. Subsequently, only routine labor is needed for feeding, tending, and observing the heifers.

A minimum investment is needed in buildings and facilities except for baby calves. Baby calves need dry, draft-free facilities that can range from individual calf hutches to a central dairy barn.

Budget Information

The total column includes all costs including noncash costs including operator labor, depreciation, and interest.

Machinery costs include fuel used for observing heifers when on pasture, while building repairs include costs of repairing buildings and fences. Interest on variable costs is computed on one-half of the total variable costs at the current interest rate.

Depreciation on buildings and equipment is calculated on an original investment of \$300 per head with a life of 20 years. Interest on buildings and equipment is calculated on one-half the original investment at the current interest rate. Insurance and taxes are assumed to be 1.75 percent of the original investment. Interest is also charged on the average investment (\$150 in year one and \$500 in year two) in the heifer.

The return per heifer assumes 90 percent of the heifers are sold or brought into the herd for production and 10 percent are sold as culls or nonbreeders. The cost of a purchased calf or the value of a home-raised calf is subtracted to obtain the net return per heifer.

Table 1. Feed Requirements

Feed Requirement	Birth to 6 Mos.		6 to 12 Mos.		12 to 24 Mos.	
	Amount	Value	Amount	Value	Amount	Value
Milk Replacer* @\$100.00 per cwt.	25 lbs.	\$ 25.00				
Calf Starter @ \$17.00 per cwt.	250 lbs.	42.50				
Calf Grower @\$14.00 per cwt.	250 lbs.	35.00				
Grain @ \$5.20 per cwt.			600 lbs.	\$ 31.20	950 lbs.	\$ 49.40
Protein @ \$10.75 per cwt.			160 lbs.	17.20	440 lbs.	47.30
Alfalfa Hay @ \$85.00 per ton	500 lbs.	21.25	1,200 lbs.	51.00	3,700 lbs.	157.25
Silage @ \$23.25 per ton			2,500 lbs.	29.05	6,800 lbs.	79.05
Pasture @ \$15.40 per mo.					3 mos.	46.20
Salt and Minerals @ \$22.00 per cwt.	10 lbs.	2.20	20 lbs.	4.40	50 lbs.	11.00
FEED COST PER PERIOD		\$ 125.95		\$ 132.85		\$ 390.20
TOTAL FEED COSTS (Birth to 24 Mos.)		\$ 649.00				

*Some producers use extra colostrum and waste milk to decrease cost.

COST-RETURN PROJECTION—DAIRY HERD REPLACEMENT

	EXAMPLE Total	YOUR FARM Total
VARIABLE COST PER HEIFER:		
1. Feed—to 24 months of age (Table 1).....	\$ 649.00	_____
2. Labor (15 hrs × \$10.80 per hr)	162.00	_____
3. Veterinary, drugs, and supplies	6.50	_____
4. Breeding costs for A.I. services	18.00	_____
5. Transportation and marketing costs	_____	_____
6. Fuel, oil, and repairs	8.50	_____
7. Building repairs	3.50	_____
8. Interest on 1/2 of variable costs @ 10%	42.38	_____
A. TOTAL VARIABLE COSTS	\$ 889.87	_____
FIXED COST PER HEIFER:		
9. Depreciation on buildings and equipment.....	\$ 15.00	_____
10. Interest on buildings and equipment ¹ @ 10%	15.00	_____
11. Insurance and taxes on buildings and equipment @ 1.75%	5.25	_____
12. Interest on average investment in heifer @ 10%	65.00	_____
B. TOTAL FIXED COSTS	\$ 100.25	_____
C. TOTAL COSTS PER HEIFER: (A + B)	\$ 990.12	_____
RETURNS PER HEIFER		
13. Spring heifer: 0.9 head × \$1,125	\$ 1,012.50	_____
14. Non-breeder or cull: 0.1 headd × 1,300 lbs @ \$55.00	71.50	_____
15. Calf purchased or raised	-125.00	_____
16. Less death loss: 15% of Line 15	-18.75	_____
D. GROSS RETURNS PER HEIFER	\$ 940.25	_____
E. RETURNS OVER VARIABLE COSTS (D – A)	\$ 50.38	_____
F. RETURNS OVER TOTAL COSTS (D – C)	\$ -49.87	_____
G. ASSET TURNOVER (D ÷ INVESTMENT) ²	49.49%	_____
H. NET RETURN ON INVESTMENT ((F + 8 + 10 + 12) ÷ INVESTMENT) ²	3.82%	_____

¹ Total column is one-half the investment in buildings and facilities at an interest rate of 10 percent.

² Investment equals total investment in dairy heifer and value of buildings and facilities for the two-year period.

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