

# NC STATE UNIVERSITY

## DAIRY HEIFERS

Budget 10-7  
November-05

Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay.

ITEM	UNITS	PRICE	QUANTITY	TOTAL VALUE	VALUE/HEAD*	YOUR VALUE
		\$		\$	\$	\$
<b>GROSS REVENUE:</b>						
1. Springing heifers		1,600	49.7	79,493	1,600	_____
2. Cull heifers			2.6	1,111	22	_____
3. Total revenue				80,605	1,622	=====
<b>OPERATING EXPENSES:</b>						
4. Day old calves	Head	200	58.0	11,600	233	_____
5. Milk replacer	lb.	0.95	2,801.4	2,661	54	_____
6. Concentrates	Tons	186.55	51.7	9,645	194	_____
7. Byproducts fed	Tons	0.00	0.0	0	0	_____
8. Hay	Tons, as fed	70.00	213.3	14,930	300	_____
9. Corn silage	Tons, as fed	25.00	375.9	9,399	189	_____
10. Pasture	Tons, as fed	0.00	0.0	0	0	_____
11. Bedding		5.00	145.7	728	15	_____
12. Vet and medication	Head	0.00	0.0	1,094	22	_____
13. Breeding	Head	35.00	49.7	1,739	35	_____
14. Utilities, fuel and oil	Head			3,009	61	_____
15. Supplies and Misc.				893	18	_____
16. Repairs				2,125	43	_____
17. Death loss and culling				3,313	67	_____
18. Interest on operating capital				4,320	87	_____
19. Total operating expense				65,456	1,317	_____
20. Returns over operating expenses				15,148	305	_____
<b>OWNERSHIP EXPENSES:</b>						
21. Specialized cattle facilities machinery and equipment				9,160	184	_____
22. Returns to land, overhead, labor and management				5,989	121	_____
23. Labor for livestock	Hours	9.50	1,489.9	14,154	285	_____
24. TOTAL COST				88,770	1,787	_____
25. Returns to land, overhead and management				-8,166	-\$164	_____
<b>SUMMARY</b>						
26. Total cost per head, including initial calf value and net of cull sales					\$1,764	_____
27. Cost per head excluding initial value of calf					\$1,509	_____
28. Cost per pound of gain					\$1.23	_____
29. Cost per head per day					\$2.32	=====

\* Calculated as the total value divided by the number of heifers available at the end of the raising period.

NOTE. This budget assumes that heifers are transferred to a transition feeding group 3 weeks before calving. These costs are not included in the budget.

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Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay.

TABLE 5A: Initial investment in specialized buildings and equipment, and annual ownership costs for rearing dairy heifers

ITEM	HEIFER SHARE	LIFE YEARS	INITIAL COST	SALVAGE VALUE	DEPRECIATION	INTEREST	INSURANCE	PROP. TAXES	TOTAL
	%	YEARS	\$	\$	\$	\$	\$	\$	\$
Rate Charged, percent						7.50%	1.00%	0.60%	
1. Calf housing	100%	10	4,125	0	413	155	21	12	600
2. Cattle housing & feed bunk	100%	15	16,500	0	1,100	619	83	50	1,851
3. Fence-line feed bunk with concrete pad	100%	15	4,400	0	293	165	22	13	494
4. Fencing	100%	15	1,650	0	110	62	8	5	185
5. Water supply	100%	15	825	0	55	31	4	2	93
6. Horizontal silo	40%	15	19,250	0	513	289	39	23	864
7. Hay storage	100%	20	18,750	0	938	703	94	56	1,791
8. Corral	100%	15	2,475	0	165	93	12	7	278
9. Pickup truck	30%	8	22,000	4,034	674	293	39	23	1,029
10. Tractor	60%	20	19,700	6,151	406	582	78	47	1,112
11. Large round bale handler	50%	10	500	0	25	9	1	1	36
12. Silage/feeder wagon	35%	12	10,400	825	279	147	20	12	458
13. Nutrient management	100%	15	3,300	0	220	124	17	10	370
14. Other	0%	1	0	0	0	0	0	0	0
<b>Total</b>			<b>\$123,875</b>	<b>\$11,010</b>	<b>\$5,191</b>	<b>\$3,271</b>	<b>\$436</b>	<b>\$262</b>	<b>\$9,160</b>

**SENSITIVITY ANALYSIS**

The tables show A) Returns to land, overhead and management, a profit measure, and B) Cost per head, under various assumptions about costs and returns. Specifically, the cost and returns shown in the enterprise budget are believed to be fairly representative of North Carolina conditions but there is a wide variation in heifer raising systems and in farm performance among farms. Also, costs and the value of heifers change from year to year. Table a shows the effects of revenue and costs that are higher and lower than for the basic budget. Similarly, Table B shows the effects of total raising costs that are higher and lower.

**A. RETURNS TO LAND, OVERHEAD AND MANAGEMENT:**

		<b>REVENUE</b>		
		Base Budget		
		-10%		+10%
<b>EXPENSE</b>	-10%	-\$7,349	\$711	\$8,772
	Base	-\$16,226	<b>-\$8,166</b>	-\$105
	+ 10%	-\$25,103	-\$17,043	-\$8,982

**B. TOTAL COST PER SPRINGING HEIFER RAISED, EXCLUDING THE VALUE OF THE HEIFER CALF:**

<b>TOTAL COST</b>		
Base Budget		
-10%		+10%
\$1,358	\$1,509	\$1,659

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Stage 1. Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay.  
Birth to weaning

ITEM	UNITS	PRICE \$	QUANTITY	VALUE \$	YOUR VALUE \$
<b>GROSS REVENUE:</b>					
1. Weaned heifer calves	Head	300	53.4	16,008	_____
2. Cull heifers	Head	0	0.0	0	_____
3. Total revenue				16,008	=====
<b>OPERATING EXPENSES:</b>					
4. Day old calves	Head	200	58.0	11,600	_____
5. Milk replacer	lb.	0.95	2,801.4	2,661	_____
6. Calf starter feed	lb.	0.18	2,334.5	420	_____
7. Concentrate feed	lb.	0.00	0.0	0	_____
8. Hay	Tons, as fed	0.00	0.0	0	_____
9. Pasture	Tons, as fed	0.00	0.0	0	_____
10. Other feed		0.00	0.0	0	_____
11. Bedding	Cwt.	5.00	40.0	200	_____
12. Vet and medication	Head	6.00	53.4	320	_____
13. Misc.	Head	2.00	53.4	107	_____
14. Utilities, fuel and oil	Head	7.50	53.4	400	_____
15. Supplies	Head	5.00	53.4	267	_____
16. Repairs				83	_____
17. Death loss and culling				928	_____
18. Interest on operating capital				111	_____
19. Total operating expense				17,097	_____
20. Returns over operating expenses				-1,089	_____
<b>OWNERSHIP EXPENSES:</b>					
21. Specialized cattle facilities machinery and equipment				600	_____
22. Returns to land, overhead, labor and management				-1,690	_____
				0	_____
23. Labor for livestock	Hours	9.50	186.8	1,774	_____
24. TOTAL COST				19,472	_____
25. Returns to land, overhead and management				-\$3,464	_____
<b>SUMMARY</b>					
26. Total cost per head, this stage, including initial calf value, net of sales				\$365	_____
27. Cost per head excluding initial value of heifer				\$148	_____
28. Cost per pound of gain for this stage				\$2.46	_____
29. Cost per head per day for this stage				\$3.51	_____
30. Average daily gain, lb/head/day				1.43	_____

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Stage 2. Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay. Weaning to 6 months

ITEM	UNITS	PRICE	QUANTITY	VALUE	YOUR VALUE
		\$		\$	\$
<b>GROSS REVENUE:</b>					
1. Heifer calves	Head	500	52.8	26,413	_____
2. Cull heifers	Head	0	0.0	0	_____
3. Total revenue				26,413	=====
<b>OPERATING EXPENSES:</b>					
4. Weaned calves	Head	300	53.4	16,008	_____
5. Calf starter feed	lb.	0.18	3081.5	555	_____
6. Grower concentrate	Tons	144.46	17.7	2,554	_____
7. Other concentrate feed	Tons	0.00	0.0	0	_____
8. Hay	Tons, as fed	70.00	22.7	1,588	_____
9. Other Hay	Tons, as fed	0.00	0.0	0	_____
10. Corn silage	Tons, as fed	0.00	0.0	0	_____
11. Pasture	Tons, as fed	0.00	0.0	0	_____
11. Bedding	cwt.	5.00	105.7	528	_____
13. Vet and medication	Head	5.00	52.8	264	_____
14. Misc	Head	2.00	52.8	106	_____
15. Utilities, fuel and oil	Head	7.50	52.8	396	_____
16. Supplies	Head	2.00	52.8	106	_____
17. Repairs				539	_____
18. Death loss and culling				160	_____
19. Interest on operating capital				519	_____
20. Total operating expense				23,323	_____
21. Returns over operating expenses				3,090	_____
<b>OWNERSHIP EXPENSES:</b>					
22. Specialized cattle facilities machinery and equipment				2,595	_____
23. Returns to land, overhead, labor and management				495	_____
24. Labor for livestock	Hours	9.50	308	2,927	_____
25. TOTAL COST				28,845	_____
26. Returns to land, overhead and management				-2,432	_____
<b>SUMMARY</b>					
27. Total cost per head, this stage, including initial heifer value, net of cull sales				\$546	_____
28. Cost per head excluding initial value of heifer				\$243	_____
29. Cost per pound of gain for this stage				\$0.97	_____
30. Cost per head per day for this stage				\$1.74	_____
31. Average daily gain, lb/head/day				1.79	_____

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Stage 3. Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay. Six months to pre-breeding age

ITEM	UNITS	PRICE \$	QUANTITY	VALUE \$	YOUR VALUE \$
<b>GROSS REVENUE:</b>					
1. Open heifers	Head	750	52.3	39,224	_____
2. Cull heifers	Head	0	0.0	0	_____
3. Total revenue				39,224	=====
<b>OPERATING EXPENSES:</b>					
4. Growing heifers	Head	500	52.8	26,413	_____
5. Concentrate mix	Tons	196.89	16.0	3,153	_____
6. Other concentrates	Tons	0.00	0.0	0	_____
7. Byproducts fed	Tons	0.00	0.0	0	_____
8. Hay	Tons, as fed	70.00	28.1	1,966	_____
9. Other Hay	Tons, as fed	0.00	0.0	0	_____
10. Corn silage	Tons, as fed	25.00	225.7	5,642	_____
11. Pasture	Tons, as fed	0.00	0.0	0	_____
11. Bedding	cwt.	0.00	0.0	0	_____
13. Vet and medication	Head	5.00	52.3	261	_____
14. Misc	Head	2.00	52.3	105	_____
15. Utilities, fuel and oil	Head	19.50	52.3	1,020	_____
16. Supplies	Head	2.00	52.3	105	_____
17. Repairs				572	_____
18. Death loss and culling				264	_____
19. Interest on operating capital				1,322	_____
20. Total operating expense				40,823	_____
21. Returns over operating expenses				-1,599	_____
				0	_____
<b>OWNERSHIP EXPENSES:</b>					
22. Specialized cattle facilities				0	_____
machinery and equipment				2,393	_____
23. Returns to land, overhead, labor and management				-3,992	_____
24. Labor for livestock	Hours	9.50	458	4,347	_____
25. TOTAL COST				47,563	_____
26. Returns to land, overhead and management				-8,339	_____
<b>SUMMARY</b>					
27. Total cost per head, this stage, including initial heifer value, net of cull sales				\$909	_____
28. Cost per head excluding initial value of heifer				\$404	_____
29. Cost per pound of gain for this stage				\$0.90	_____
30. Cost per head per day for this stage				\$1.93	_____
31. Average daily gain, lb/head/day				2.14	_____

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Stage 4. Estimated annual revenue, operating expenses, ownership expenses and returns to land, overhead and management for rearing large breed dairy heifers to calve at 22-mo. at 1,350 lb., using corn silage and hay. Breeding to pre-calving

ITEM	UNITS	PRICE	QUANTITY	VALUE	YOUR VALUE
		\$		\$	\$
<b>GROSS REVENUE:</b>					
1. Springing heifers	Head	1600	49.7	79,493	_____
2. Cull heifers	Head	425	2.6	1,111	_____
3. Total revenue				80,605	=====
<b>OPERATING EXPENSES:</b>					
4. Open heifers	Head	750	52.3	39,224	_____
5. Concentrate mix	Tons	193.66	15.3	2,962	_____
6. Other concentrates	Tons	0.00	0.0	0	_____
7. Byproducts fed	Tons	0.00	0.0	0	_____
8. Hay	Tons, as fed	70.00	162.5	11,376	_____
9. Other Hay	Tons, as fed	0.00	0.0	0	_____
10. Corn silage	Tons, as fed	25.00	150.3	3,757	_____
11. Pasture	Tons, as fed	0.00	0.0	0	_____
11. Bedding	cwt.	0.00	0.0	0	_____
13. Vet and medication	Head	5.00	49.7	248	_____
14. Breeding	Head	35.00	49.7	1,739	_____
15. Utilities, fuel and oil	Head	24.00	49.7	1,192	_____
16. Supplies & misc.	Head	2.00	49.7	99	_____
17. Repairs				766	_____
18. Death loss and culling				1,961	_____
19. Interest on operating capital				2,479	_____
20. Total operating expense				65,803	_____
21. Returns over operating expenses				14,801	_____
<b>OWNERSHIP EXPENSES:</b>					
22. Specialized cattle facilities machinery and equipment				3,294	_____
23. Returns to land, overhead, labor and management				11,507	_____
24. Labor for livestock	Hours	9.50	537	5,105	_____
25. TOTAL COST				74,203	_____
26. Returns to land, overhead and management				6,401	_____
<b>SUMMARY</b>					
27. Total cost per head, this stage, including initial heifer value, net of cull sales				\$1,471	_____
28. Cost per head excluding initial value of heifer				\$659	_____
29. Cost per pound of gain for this stage				\$1.43	_____
30. Cost per head per day for this stage				\$2.57	_____
31. Average daily gain, lb/head/day				1.80	_____

This budget assumes that heifers are transferred to a transition feeding group 3 weeks before calving. These costs are not included in the budget.

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