

The Economics of Raising Dairy Heifers

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Dairy replacement heifers represent the future production of a dairy herd. The goal of the replacement program is to have an adequate supply of replacement heifers so that the number of milk cows in the herd remains at a constant or increasing level and the overall cash flow of the dairy is adequate.

Dairy heifers may be obtained by buying from other producers or custom heifer growers, contracting heifers to be raised and later purchased or returned to the original owners or raising heifers on the farm. The cost of raising dairy heifers varies dramatically, and the economics of raising heifers depends on several financial decisions. There are many sources of dairy heifer budgets, but these budgets should be modified with specific values for a given operation before any decision concerning the financial implications is reached.

Regardless of the source of dairy replacement heifers, the heifers should be of high genetic potential for high yields of milk; healthy and free of disease and parasites; reasonable in terms of condition and size, being neither too fat nor too skinny nor too small, for their age (goal = 1,200 to 1,250 pounds after calving at 24 months of age); and reasonable in cost, whether grown on the home farm, contract grown or purchased from another source. Generally, it is important for each heifer to meet all

of these goals or the return to the producers may be less than optimal. If heifers are custom grown, each of these goals should be addressed in the contract.

Factors Affecting How Heifers Are Raised

There are factors that should be considered in making the proper decision to raise your own heifers, purchase them or contract them to be raised by a custom heifer raiser. Custom heifer growers often can raise heifers for less total expense than heifers reared on the home farm.

Beyond the financial considerations, producers need to consider issues related to biosecurity, the loss of control of management of the heifers and cash flow considerations at various times during the growth of heifers. Moreover, the economic



If possible, it is best to start growing calves of high genetic merit that received colostrum shortly after birth to increase their resistance to diseases.

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Facilities for young calves can affect the costs of rearing calves. Usually more expensive facilities decrease labor costs. Shown are (1) a single calf hutch, (2) a group calf hutch, (3) an open calf barn and (4) a closed calf barn.

feasibility of raising heifers is often determined by fixed costs related to rearing the heifers. Some producers may already have buildings and equipment available to raise the heifers, and additional purchase of facilities is not required. In such cases, these decreased fixed costs, which usually amount to approximately 10 percent of the cost of raising dairy replacement heifers, may allow the producer to raise his own heifers more economically than contracting or purchasing them.

One additional financial factor in determining heifer raising cost and its feasibility is the amount of available cash. Baby calves or young heifer calves may be sold to enhance cash flow on dairy farms in times of low milk prices, especially if heifer prices tend to be elevated. However, when such a decision is made, the producer needs to allocate an appropriate percentage of the monthly milk check to later purchase replacement animals as needed.

Generally 30 to 40 percent of the lactating herd will be replaced each year. If all heifers are retained from the milking herd, the maximum number available for replacement each year will be 35 to 40 percent of the herd. If a herd is expanding rapidly, additional heifers may have to be purchased to sustain the expansion of the milking herd. Many factors, however, may determine the actual number of replacement animals available and needed, such as death rate in small calves and the management of the heifer enterprise in addition to the health and management of the milking and dry cows.

One advantage of raising heifers on the farm includes maximum control of the heifers, which reduces the biosecurity risk associated with

replacement heifers. Additionally, the parentage and genetics of the animals is known. Disadvantages include additional labor required for the heifers and the amount of time taken away from the milking herd. Also, additional facilities may be required if they are not already on the dairy operation. The total costs to raise a dairy heifer should allow a return to capital and charges for home labor.

The primary advantage of purchasing heifers as needed is that it frees capital, facilities and labor so that the dairy producer can specialize on the milking herd. However, disadvantages of purchasing heifers include the availability of quality replacement heifers, the biosecurity risk associated with bringing animals into the herd, the time required to acquire heifers and often the risk of paying higher prices for the heifers. Historically, heifers of high quality are sometimes limited in supply.

The advantage of contracting heifers for rearing to a custom heifer grower is that it frees facilities and labor to specialize on the milking herd. Additionally, the genetics of the animals are known. Generally, there is decreased biosecurity risk compared to purchasing heifers, although the risk may vary. Another advantage of contract raising heifers is that the custom grower may purchase the animals but then the original owner retains the first right of rejection to buy when they are heavy springers. Contracting can increase the present overall cash flow of the dairy and availability of capital if the grower pays for the heifers and the original owner pays later when the heifers are near calving. However, if the contract raiser is paid a monthly or periodic fee, the outflow of cash may be depleted more rapidly than if you were raising the heifers yourself.

Another disadvantage of contract raising heifers is the loss of management control and quality of the management, unless very strict guidelines are outlined in the contract for rearing the heifers.



Pasture is usually the less expensive method of feeding heifers. Shown is a system of intensive grazing using electric fences to increase use of pasture.

Occasionally, there will be conflicts in management decisions between the contract raiser and the owner of the heifers. It also is very important to specify penalties if terms of the contract are not met as the **costs per pound** of growth decreases when the heifers grow. However, the **costs per day** may vary as baby calves and older heifers are usually the greatest. It also is important to monitor the body condition or fatness of heifers since heifers that are fat at puberty have less potential for mammary development and future milk production. A small percentage of heifers within a large group will be too fat or thin because of differences in health, genetics and feeding. The goal is to grow heifers at 1.6 to 2.0 pounds per day, depending on age, without accumulating excessive fat.

Heifer Budgets

Over several years, the total cost of rearing replacement heifers is greater than the cost of purchasing the heifers. However, these total costs include fixed costs such as equipment and buildings and other facilities that may already be on the dairy. In addition, family labor is often used to rear the heifers and, in many situations, may be unpaid. Also, some dairy operations will use the heifers as a means of obtaining a return from home grown feed when additional feed is available other than what is needed for the milking and dry cows. These are all issues that must be addressed in looking at a heifer rearing budget.

For example, if the cost to rear a heifer is \$1,500 per heifer, it may be a better use of a dairy producer's resources to rear the heifer for \$1,500 rather than pay \$1,400 to purchase a heifer or to reimburse a custom heifer raiser for his expenses. Additionally, other concerns such as biosecurity and control over the management practices for rearing the heifers have an economic value; however, this value is difficult to determine but makes a potential monetary gain from purchasing heifers or using a contract heifer grower less feasible.

Following are examples of the costs from three states for raising dairy replacement heifers for the large breeds. These are expressed as total costs from 0 to 24 months although some heifers will calve later. Older heifers at calving increase the costs of the budget. Additionally, one state (Pennsylvania) has budgets for

heifers in 50 percent pasture and 50 percent confinement or 100 percent confinement. Please note that calves values in the budgets are only 50 percent or less of today's values. The differences in a pasture and confinement operation are the lower feed costs and normally lower capital equipment costs because the heifer is taken to the feed rather than taking the feed to the heifer. However, land costs and labor may be greater compared to a confinement operation.

In summary, the table indicates the total cost of rearing dairy replacement heifers. However, all of these costs may not be pertinent to a particular operation. Each producer should look at the budget and determine his expenses in rearing replacement heifers. Additionally, producers need to consider issues of biosecurity, loss of control of the management of heifers and cash flow when deciding to either raise them on the farm, buy heifers from others or contract his heifers to be raised by a custom heifer grower.

Feed is a major cost of rearing heifers. Forage can be from (1) pasture, (2) hay, (3) grass haylage, (4) corn silage, (5) alfalfa hay or a combination of these with (6) commodities to extend the use of the primary forage.

1



2



3



4



5



6



**Sample Dairy Heifer Budgets for Large Breeds with Pasture or Confinement –
Birth to Freshening (0-24 months)**

Items	Qty ¹	Budget ^{1,2} A	Budget ^{1,3} B	Budget ⁴ C	Budget ⁵ D
Variable costs					
Baby calf purchase	1	\$150.00	\$150.00	\$137.52	\$150.00
Mortality costs	1	\$10.50	\$10.50	\$26.16	\$30.00
Feed					
Milk replacer (lbs)	40	\$30.00	\$30.00		
Calf starter (cwt)	8	\$112.00	\$112.00		
Heifer grain mix (cwt)	14.8	\$162.80	\$242.00		
Hay (tons)	1.6	\$184.00	\$345.00		
Silage (tons)	4.3	\$137.60	\$224.00		
Heifer on pasture only					
Heifer grain mix (cwt)	1.8	\$16.20			
Pasture (tons)	8.6	\$154.80			
Hay (tons)	0.4	\$46.00			
Silage (tons)	1.2	\$38.40			
Total feed costs		\$881.80	\$953.00	\$555.12	\$630.07
Labor (hours)	35	\$210.00	\$210.00	\$262.80	\$156.00
Vet and medicine	1	\$13.00	\$13.00	\$22.08	\$12.00
Breeding	1	\$32.00	\$32.00	\$19.44	\$30.00
Utilities	1	\$22.00	\$22.00	\$46.80	\$25.00
Bedding/facilities (tons)	1.1	\$40.70	\$40.70	\$21.12	\$31.97
Misc. and supplies/other	1	\$39.00	\$39.00	\$143.04	\$75.01
Interest		\$125.91	\$132.32	\$108.24	\$128.24
Total variable cost		\$1524.91	\$1602.52	\$1342.32	\$1268.29
Fixed costs					
Equipment		\$37.00	\$37.00	\$56.64	\$40.00
Building		\$38.00	\$38.00	\$53.28	\$40.00
Management		\$25.00	\$25.00	\$21.60	\$44.80
Overhead				\$37.20	
Total fixed costs		\$100.00	\$100.00	\$168.72	\$124.80
Total costs		\$1624.91	\$1702.52	\$1511.04	\$1393.09

¹From Pennsylvania State University, <http://www.das.psu.edu/teamdairy/special/>

²50% pasture, 50% confinement

³100% confinement

⁴From Michigan State University and *Hoard's Dairyman*, primarily confinement, Better Cows from Better Heifers, A Supplement to *Hoard's Dairyman*, September 25, 2001, W. D. Hoard and Sons Company, Fort Atkinson, WI

⁵From Sustainable Dairy Systems Manual, University of Kentucky and University of Tennessee, feeding with annual pastures supplemented with hay and concentrate, <http://economics.ag.utk.edu/dairy.html>

Printed by University of Arkansas Cooperative Extension Service Printing Services.

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