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Dairy-Beef Production

Production of high-quality dairy-beef is relatively new to the beef industry and depends almost entirely on Holstein bull calves. Until recently, most Holstein calves were sold for veal. However, the high-quality meat produced when these animals are fed high-energy diets and harvested at a young age (12 to 14 months) has become popular with consumers.

Dairy-beef production lends itself well to small-scale and part-time farming operations and also can be an auxiliary enterprise for dairy operations. Existing facilities can be used to feed and house the steers, and farm-grain feeds can be used. In addition, this enterprise is easy to enter when profit projections are favorable and to exit when unfavorable. The main disadvantage of a dairy-beef enterprise is the limited availability of calves that have started eating grain feeds.

Because dairy cow numbers in Pennsylvania have been declining in recent years, it is important that dairy-beef producers secure a good source of calves.

Marketing

Producers should carefully research local markets and develop marketing strategies before beginning a dairy-beef operation. Although many large U.S. beef-packing companies readily purchase finished dairy-type steers, the requirements of the beef market require that the steers have been fed the proper diet. Dairy-beef commands lower prices because carcass yields are lower than conventional beef breeds. Over the past few years, however, dairy-beef carcasses marketed

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from young animals fed high-energy diets have been priced closer to their true value. The price difference is due in part to the lower dressing percentage (percentage of liveweight that is in the carcass) and a higher percentage of bone in dairy-beef carcasses compared to traditional beef cattle.

Purchasing Calves

Young dairy calves are usually sold through local auctions at 2 to 5 days of age. Most dairy-beef or veal-calf producers rely on livestock brokers to assemble uniform groups of calves for feeding. Most of these calf starting operations are veal operations that are diversifying into dairy beef calves or are part of the calf-raising enterprise on the dairy farm.

Health Program

In addition to vaccinations, internal and external parasite treatment programs should be planned. Dairy-beef operations usually have fewer problems with internal parasites than traditional beef-feeding programs. Calves are normally housed in individual pens until they reach 9 to 10 weeks of

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age. When calves are delivered to the farm, the following practices are important:

- Make sure that the receiving barn is clean and well ventilated.
- Start the calves on feed or water with electrolytes immediately after their arrival.
- Plan a health maintenance program with a veterinarian who can diagnose illnesses and treat animals promptly.

Producers should also consult a veterinarian to determine a vaccination program that is appropriate for the area in which the farm is located. Vaccinations are critical for the starter calf during the first 9 to 12 weeks, but they also reduce potential health problems for the feeder in the growing and finishing phases.

Nutrition

Starter calves should be fed a milk replacer for about 45 days before weaning. Producers should be sure to use only a high-quality milk replacer because there can be wide variations in quality. In addition, a high-quality, palatable grain mix should be fed at all times to dairy-beef calves but particularly during the early stages of growth. Because grain mixes are usually less expensive than a milk replacer, it is generally more profitable to transfer the calves to grain as soon as possible.

Producing an acceptable-quality carcass from dairy-beef steers requires feeding the animals a high-energy ration and marketing them at an early age (12 to 14 months) and acceptable weight (1,150 to 1,300 pounds). A high-energy (usually high-grain) ration must be fed to the dairy-beef steer throughout its lifetime. Recent Penn State studies indicate that corn silage also can be used to a limited extent (up to 50 percent of the ration's dry matter from about 400 to 700 pounds of body weight), but a relatively high intake of grain should be maintained throughout both the growing and the finishing phases. Because of higher ratios of feed to weight gain than that of traditional beef breeds, dairy-beef steers usually will not produce an economical carcass if slaughtered beyond 18 months of age.

Housing

Most dairy-beef starter calves are housed in individual stalls at least 24 inches wide until they are 9 to 10 weeks of age. After that the calves can be maintained in larger group pens of up to 25 animals. Larger groups often have a less-uniform growth rate, and it is more difficult for producers to observe and treat the variety of illnesses that might affect the calves. Using an "all-in, all-out" system gives producers the opportunity to thoroughly clean and disinfect the entire barn where the calves are maintained. If at all possible, the producer should not deviate from the all-in, all-out system because retaining some of the calves in the barn will not allow thorough cleaning and diseases can be more readily transmitted from one group of calves to the next.

Dairy steers require more housing and shelter than conventional beef breeds of the same age. Footing is very important because dairy-beef steers are fed for nearly a year. Unbedded concrete or slatted floors can result in lameness. The barn where the cattle are housed should have at least one open side and sliding panels or curtains on the closed side to allow for proper ventilation. One of the most common causes of respiratory problems in cattle is not cold temperatures but high humidity due to inadequate ventilation in the housing area.

Producers also should have a biosecurity system for people and animals entering the barn. Visitors or personnel working in the barn should use footbaths, and dogs, cats, and rodents should be prevented from entering areas where the calves are maintained or the feed is stored and mixed.

Local Regulations

All agricultural operations in Pennsylvania, including small and part-time farming operations, operate under the Pennsylvania Clean Streams Law. A specific part of this law is the Nutrient Management Act (also known as Act 38). Portions of this law may or may not pertain to your operation due to the number and/or size of animals you have. However, all operations may be a source of surface- or groundwater pollution. Because of this possibility, you should contact your local Soil and Water Conservation District to determine what regulations may pertain to your operation.

Risk Management

There are several risk management strategies you may employ for your operation. You should insure your facilities as well as your animals. This may be accomplished by consulting your insurance agent or broker. You may also insure your income through a crop insurance program called AGR-Lite. To use AGR-Lite you must have five years of Internal Revenue Service (IRS) Schedule F forms. You can then contact an agent who sells crop insurance and insure the income of your operation. For more on agricultural business insurance, see *Agricultural Alternatives: Agricultural Business Insurance*.

Sample Budget

Included in this publication is a sample budget that summarizes the costs and returns for a dairy-beef steer enterprise. Calves are purchased at 100 pounds and steers are sold at 1,300 pounds. Feed costs other than milk replacer include a starter mix and a finishing ration. This sample budget should help ensure that all costs and receipts are included in your calculations. Costs are often difficult to estimate in budget preparation because they are numerous and variable. Therefore, you should think of this budget as an approximation and make appropriate adjustments using the "Your Estimate" column to reflect your specific situation. More information on the use of livestock budgets can be found in *Agricultural Alternatives: Enterprise Budget Analysis*.

Sample Dairy-Beef Steer Budget

Calves bought at 100 pounds and sold at 1,300 pounds.

Item	Quantity	Unit	Price	Amount	Your Estimate
Receipts					
Finished steer (minus 3% death loss)	1,261	pound	$1.00	$1,261.00	_____
Total Receipts				$1,261.00	_____
Variable Costs					
Calf	1	head	$85.00	$85.00	_____
Feed costs					
Milk replacer	45	pound	$1.22	$54.90	_____
Starter mix	75	pound	$0.36	$27.00	_____
Corn	160	bushel	$5.50	$880.00	_____
Soybean meal	3.5	cwt	$17.50	$61.25	_____
Salt and minerals	50	pound	$0.29	$14.50	_____
Dicalcium phosphate	55	pound	$0.21	$11.55	_____
Corn silage	4	ton	$50.00	$200.00	_____
Hay	0.25	ton	$175.00	$43.75	_____
Total feed costs				$1,292.95	_____
Health program				$22.50	_____
Bedding (straw)	0.5	ton	$125.00	$62.50	_____
Electricity				$12.00	_____
Equipment and repairs				$12.00	_____
Insurance and taxes				$1.50	_____
Marketing and trucking				$10.00	_____
Miscellaneous				$3.00	_____
Interest on working capital				$64.63	_____
Total variable costs				$1,566.08	_____
Fixed Costs					
Labor	10	hr	$0.00	$0.00	_____
Building (includes stall barn)				$33.00	_____
Equipment charge				$42.00	_____
Total fixed costs				$75.00	_____
Total costs				**$1,641.08**	_____
Returns					
Returns over variable costs				$(305.08)	_____
Net returns				$(380.08)	_____

Due to the high volatility of commodity prices and input costs, be sure to make necessary adjustments to the budget using the "Your Estimate" column. You should monitor local commodity markets and contact local suppliers to determine current prices for all items contained in this sample budget.

Initial Resource Requirements for Dairy-Beef Production

- Land: minimal
- Labor: 10 hours
- Capital:
  - Calf: $84
  - Existing buildings, improvements, and fencing per animal: $75

For More Information

Books

Diggens, R. *Beef Production*. Prentice Hall Agriculture Series. Upper Saddle River, N.J.: Prentice Hall, 1983.

Field, T. G., and R. W. Taylor. *Beef Production and Management Decisions*. 4th ed. Upper Saddle River, N.J.: Prentice Hall, 2002.

Greaser, G. L., and J. K. Harper. *Agricultural Alternatives: Enterprise Budget Analysis*. University Park: The Pennsylvania State University, 1994.

Kime, L. F., R. W. Adamik, E. E. Gantz, and J. K. Harper. *Agricultural Alternatives: Agricultural Business Insurance.* University Park: The Pennsylvania State University, 2004.

More O'Ferrall, G. J. *Beef Production from Different Dairy Breeds and Dairy Crosses.* Current Topics in Veterinary Medicine. New York: Springer, 1982.

Thomas, H. S. *Storey's Guide to Raising Beef Cattle: Health/Handling/Breeding*. North Adams, Mass.: Storey, 1990.

Thomas, V. *Beef Cattle Production: An Integrated Approach*. Salem, Wis.: Waveland, 1992.

Periodicals

Beef
www.beef-mag.com

Web Sites

Penn State Department of Agricultural and Biological Engineering
www.abe.psu.edu/extension/factsheets/g/index.html

National Sustainable Agriculture Information Service
attra.ncat.org/attra-pub/beefprod.html

North Dakota State University
www.ag.ndsu.edu/pubs/beef.html

University of Nebraska, Lincoln
beef.unl.edu

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