

Before You Go Into Dairying

Barry Steevens and R.E. Ricketts

Department of Animal Sciences, University of Missouri-Columbia

Jim Rook and Robert Ruchlow

Area Dairy Specialists, University of Missouri-Columbia

When you begin dairying, you should realize that you are making a long-term commitment. If you are planning to enter the dairy business, you need to evaluate available resources and the management skills required for a profitable enterprise. Consider your experience, your interest, management ability, financing, available labor, milk market, feed resources and available facilities.

Are you suited for dairying?

A successful dairy operation demands timeliness and total commitment by the entire family. Dairy cows are creatures of habit. They need to be milked twice daily at approximately 12-hour intervals, and the milking routine is seven days a week all year long. In comparison to other agricultural enterprises, dairying is an intensive agricultural enterprise requiring considerable attention and management.

Is your farm suited for dairying?

It is important that the farm be able to furnish most of the roughage or that adequate roughage is available for purchase in the area. Roughage should consist of high-quality legumes such as alfalfa, red clover, corn or sorghum silage. In many instances, the grain can be purchased. You will need to provide approximately 9 tons of hay equivalent and 3 tons of grain per dairy cow and replacement. This hay equivalent may be divided to provide 5 tons of hay and 12 tons of corn silage. Table 1 gives an estimation of productivity of crops in Missouri. These estimations are only approximate because conditions vary considerably throughout the state.

Table 1. Approximate productivity of crops in Missouri as reported by the mail-in record program.

| Crop | Tons/acre |
|-------------|-----------|
| Corn silage | 12.7 |
| Alfalfa | 3.5 |

| | |
|--|---------------------|
| Mixed hay | 2.0 |
| Other hay | 1.4 |
| Cropland pasture (hay equivalent) | 1.0 |
| Noncropland pasture (hay equivalent) | 0.9 |
| | Bushels/acre |
| Corn | 90 |
| Milo | 87 |
| Soybeans | 36 |
| Wheat | 44 |
| Example: A 40-cow dairy would need 103 acres of alfalfa hay if that was the only forage for one year (365 days). | |
| 40 cows x 9 tons = 360 tons | |
| 360 tons ÷ 3.5 tons/acre = 103 acres | |
| If all the corn is to be raised, an additional 40 acres will be necessary. | |
| 40 cows x 3 tons x 0.8% corn in concentrates x 2,000 pounds/ton ÷ 56 pounds/bushel ÷ 90 bushels/acre. | |

Table. 2. Information on Missouri dairy farms participating in the 1980 mail-in record program.

| | Size of herd | |
|---------------------------|--------------|-----------|
| | 50 cows | 70 cows |
| Milk sold/cow (pounds) | 13,400 | 12,854 |
| Milk sold/person (pounds) | 321,000 | 480,000 |
| Milk sold/farm (pounds) | 925,647 | 1,247,002 |

| | | |
|----------------------|-----|-----|
| Total acres operated | 418 | 620 |
|----------------------|-----|-----|

Farmsteads should be located on a well-drained area with a slope of 1-1/2 to 3 percent. Adequate slope is necessary for good drainage and ease of manure handling.

Evaluate the soil type carefully. It will determine the number of acres needed for forage production. You may need 3 to 4 acres of excellent land and 4 to 8 acres of marginal land per cow unit if you plan to raise some or all of your forage. Add an additional 1-1/2 acres per cow if you will be producing your own grain.

Traditionally, dairy farmers have sought to produce most of the forage for their cows, but as land and machinery costs have risen, more dairy farmers have chosen to dry lot their cows and operate with a minimum acreage of farmland. Nevertheless, it is important to determine whether a sufficient supply of quality forage is available prior to establishment of small acreage dry lot dairy operations.

Your local University Extension center and Natural Resources Conservation Service can provide more detailed information on area soils and productivity.

Water supply

You will need about 50 to 75 gallons of potable water per cow per day. A properly cased and sealed well or a pond and filtering system meeting local health requirements may be used. Information on water requirements can be obtained from your local health sanitarian or milk plant field representative.

Is there a market for my milk?

In Missouri, there are two markets based on milk quality standards: Grade A and Manufacturing Grade milk. Manufacturing Grade milk receives a lower price than Grade A: however, the facility requirements are generally not as high as those for producing Grade A milk. For higher milk profits, consider designing the facilities required to meet Grade A milk market standards. You can get information on Grade A requirements from your local dairy field representative or University Extension specialist.

Labor requirements

Use of family labor is essential for a successful dairy. Approximately 65 hours per cow will be required annually, but this does not include the labor required for farming or harvesting crops. The labor requirement for a 60 cow herd requires 500 eight-hour days or 1-1/3 people working 365 days per year. Usually, one person can take 45 cows. Consider

whether either the husband or wife will be working off the farm, and whether both will be available to assist with the farm labor.

Capital requirements and cash flow

Capital requirements are the most critical considerations in the dairy business. According to 1981 figures, your debt load may range from \$1,500 to \$6,500 per cow. Debt capacity depends upon level of production and efficiency. Again according to 1981 figures, realistic ranges of investment may be from \$2,500 to \$4,000 per cow.

Be sure to investigate many sources of financing: local banks, the Farm Home Administration, Production Credit, the Federal Landbank, private individuals and insurance companies.

It is important to determine long-term financing and short-term operating capital requirements. You will need operating capital for purchase of feed, fuel, supplies, seed, fertilizer and many other day-to-day expenses.

To make budget estimations, use 12,000 to 14,000 pounds of milk per cow per year for Holstein cows. Do not overestimate milk production.

In general, the debt repayment capacity should not exceed 25 to 30 percent of the gross milk sales. This includes interest plus principle payments on the debt. Debt repayment capacity improves with good management practices and higher production levels. Larder herd size also may improve repayment capacity if the management and labor resources are available.

Data from the Missouri Dairy Herd Improvement (DHI) program illustrates the importance of high levels of milk production (see Table 3). Herds producing at 14,000 pounds of milk or greater show higher income over feed costs.

Table 3. Relation of production to income, Missouri DHI, 1980.

| Production milk | Pounds/cow fat | Number of herds | value of product, \$ | Grain fed | Feed costs | Income/feed costs, \$ |
|------------------------|-----------------------|------------------------|-----------------------------|------------------|-------------------|------------------------------|
| 6,487 | 254 | 6 | 738 | 3,276 | 369 | 369 |
| 9,195 | 334 | 19 | 1,049 | 4,583 | 503 | 546 |
| 10,268 | 378 | 51 | 1,194 | 4,643 | 509 | 686 |
| 11,371 | 424 | 114 | 1,331 | 5,135 | 584 | 747 |
| 13,008 | 478 | 140 | 1,512 | 5,568 | 600 | 912 |

| | | | | | | |
|--------|-----|-----|-------|-------|-----|-------|
| 14,304 | 525 | 142 | 1,672 | 5,920 | 644 | 1,027 |
| 15,303 | 572 | 111 | 1,798 | 6,279 | 682 | 1,116 |
| 17,079 | 645 | 74 | 2,006 | 6,590 | 722 | 1,284 |

Be sure to allow sufficient time in planning the financial part of the dairy business. Some common financial mistakes dairy farmers make are:

- Underestimating costs when building. Add 15 to 20 percent to your final cost estimation when building a barn.
- Over-extending during times of good prices.
- Over-purchasing of short-term, high interest items such as machinery, autos or trucks.
- Falling behind in payment of the monthly feed bill.
- Failure to carefully evaluate each purchase. Purchases must improve the operation and add to the cash flow.

Building requirements for dairying

The facilities required for a dairy include the milking center, feed processing or handling center, the feeding system, a housing system and a manure handling system.

The most important facility is the milking barn, which includes the parlor, the bulk tank room, holding pen and the milking equipment. Newer parlors are frame-constructed units that require a sizable investment. According to 1981 figures, investments of \$35,000 to \$60,000 include the building, milking equipment and bulk tank. Many times, little advantage is gained by purchasing and installing older, used milking equipment. Depending upon the herd size, you might purchase a used bulk tank for getting started. Bulk tank capacity needs are estimated at approximately 25 gallons per cow based on every-other-day pickup.

Base your selection of milking equipment on current requirements, availability and personal preference. Your local milking equipment dealer is a very important consideration in the selection since you will be needing routine maintenance. You might also visit with local dairy farmers about different installations before making a selection.

The dairy housing system should complement the feeding system. It also may depend upon the method you choose to harvest and store forage. Enclosed-type free stall barns cost slightly more than semi-enclosed units; however, they offer certain advantages during the winter.

A small dairy of less than 40 cows may get by with minimal facilities. However, as dairy

units grow in size, the confining or semi-confining of cows requires more adequate housing and feeding systems.

Consider how you will store your hay and sage. Work at the Southwest Research Center in Mount Vernon shows great savings in hay quality and value by providing roofed hay storage. Bunker-type silos for storing silage require a lower initial investment per ton than do tower silos; however, they have additional requirements for feeding.

Essential management and production practices

- Participate in a dairy herd improvement record program (DHIA).
- Use artificial insemination. Select sires with a predicted dollar value (PD\$) in excess of \$160 (1981 figure).
- Have a farm record accounting system.
- Provide a balanced nutrition program. Feed costs will be the largest expense in a dairy operation. Costs of purchased concentrates are influenced by forage quality. A correctly formulated ration will have the greatest return per dollar invested. A balanced nutrition program should consist of forage analysis and formulating the concentrate ration to supply the remaining nutrients needed for production. Ration should be formulated for high producing cows; i.e. 75 pounds milk per day. Give special attention to feeding cows for peak lactation production, because peak lactation production level influences consistency for the rest of the lactation period. Research suggests that the daily milk production at peak lactation multiplied by 200 will give an estimation of 305-day lactation record. For example, if a dairy cow is producing 80 pounds of milk per day at peak lactation, you can figure that she will produce 16,000 pounds in a 305-day record under normal management.

Purchasing cows

When selecting cows, consider their age and stage of gestation, genetic producing ability and cost.

Bred heifers are most often free of disease, particularly mastitis. They suffer less stress from hauling and adjust more easily to a new herd situation. Also, bred heifers have certain investment and tax advantages. However, they will produce slightly less milk during first lactation, about 80 percent of a mature cow.

Purchased cows should have the potential to produce at least 15,000 pounds of 3.5 percent milk. Only DHI tested herds have this type of production information. The extra price you pay for years of superior breeding will be a sound investment. It is possible to purchase

animals through a herd dispersal or through a well respected cattle dealer. Use caution in buying animals at local sale barns since they often serve as an outlet for other dairy farmers' problem animals.

Compliance with health regulations

All Grade A milk is produced under the approval supervision of the State Department of Health. One of the first things a new dairy farmer should do is visit with the area University Extension specialist, local milk market field representative and the local health sanitarian. They will provide information on selecting a site for a milking parlor, designing and approving a milk barn plan, getting approval for handling waste disposal, getting approval of the water source, and installing milking equipment.

The approval and signature of the local health sanitarian is required to sell Grade A milk. When the milk barn has been completed and sanitation requirements met, a Grade A permit will be issued. The local health sanitarian will visit and inspect facilities periodically. Milk will be tested in a laboratory to determine whether it meets local health standards. The local health sanitarian does have the authority to suspend a Grade A permit if it is determined that existing facilities, conditions or milk quality do not meet Grade A requirements. If so, the Grade A permit will be suspended until the management or production problems has been resolved.

Similar steps and a permit are required for the production of Manufacturing Grade milk. These requirements are handled by the State Department of Agriculture.

A checklist

- Contact as many resource people as possible. These persons should include University Extension specialists, financial representatives, the Natural Resources Conservation Service, local dairy farmers and milk plant field representatives.
- Visit successful dairies.
- Develop a cash flow statement.
- Secure a milk market.
- Develop a plan for your milking and housing facilities.
- Contact your local health sanitarian for approval of barn plan, location, waste disposal and water supply or approval of existing facilities.
- Establish a method for purchasing animals.
- Plan your feeding program.
- Be sure to keep your banker informed of your progress.

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