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GUIDE

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Before You Go into Dairying

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When you begin dairying you should realise that you are making a long-term committment. 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 to Dairying?

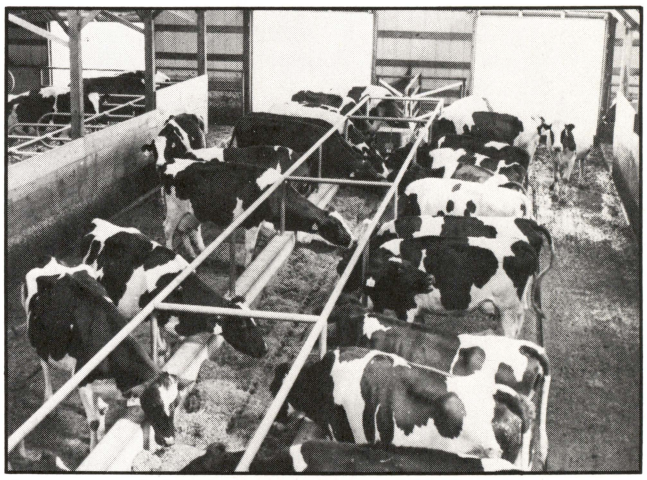
A successful dairy operation demands timeliness and total comitment by the entire family. Dairy cows are creatures of habit. They need to be milked twice daily at approximately 12-hour intervals, and the milking routine is seven days a week all year long. In comparison to other agricultural enterprises, 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 to purchase in the area. Roughage should consist of high quality legumes such as alfalfa, red clover, corn or sorgum 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 up 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.

Farmsteads should be located on a well drained area with a slope of 1½ 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



A successful dairy operation calls for a long-term commitment.

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 1½ 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 farm land. 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 extension office and soil 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

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
Non cropland pasture (Hay equivalent)	.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 × 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 × 3 tons × .8% corn in concentrates × 2,000 pounds/ton ÷ 56 pounds/bushel ÷ 90 bushels/acre.

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 of 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. Larger 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.

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

- Under estimating 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.

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

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

Building Requirements for Dairying

The facilities required for a dairy include the milking center, feed processing or handling center, the feeding system, a housing 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 which 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 equiment. 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 pick up.

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 silage. 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

1. Participate in a dairy herd improvement record program (DHIA).

2. Use artificial insemination. Select sires with a predicted dollar value (PD$) in excess of $160 (1981 figure).

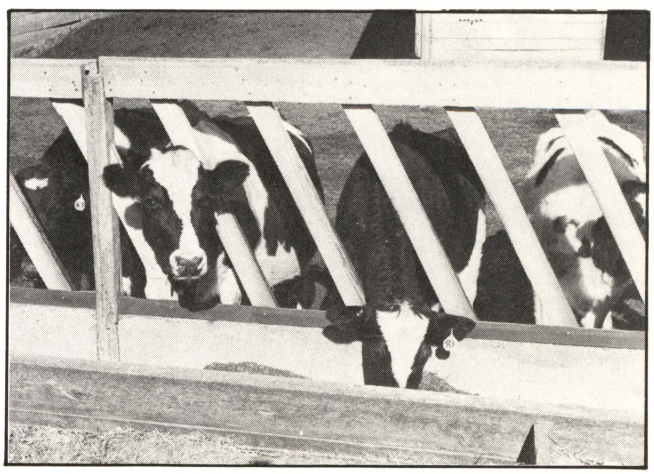
3. Have a farm record accounting system.

4. 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 the animals' age and stage of gestation, genetic producing ability and cost.

Bred heifers are most often free of disease, particularly



Feed costs are the largest expense in a dairy operation.

mastitis. They suffer less stress from hauling and adjust easier 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 extension specialist, local milk market field representative and the local health sanitarian. They will provide information on the selection of a site for a milking parlor, the design and approval of a milk barn plan, getting approval for handling waste disposal, getting approval of the water source, and the installation of 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 have been resolved.

Similar steps and a permit is 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 soil 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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