



## Buying and Feeding the Family Milk Cow

*Allen Young*, Extension Dairy Specialist

### Buying the Cow

Buying a family cow can be an important decision because once it has been purchased, you've committed yourself to its care twice a day, 365 days per year.

Your first decision is what breed of cow to buy. This can be a daunting task because there are so many different breeds and everyone has their own bias as to which is the best. The best answer is to pick the one that would be best under your conditions. Below is a list of the six recognized breeds in the U.S. and some of their characteristics. Keep in mind that you may not have all of them available in your area. For example, Holstein and Jersey cows are readily available in Utah and the other breeds are more difficult or not available.

#### Holstein

- Black and white color; most common breed
- Average of 23,675 lb milk per year (~2753 gal; 9 gal/day) with 3.63% butterfat
- Relatively large breed (~1500 lb)
- Higher producing than other breeds

Details and pictures can be found at:

<http://139.78.104.1/breeds/cattle/holstein/index.htm>  
<http://www.thedairysite.com/breeds/dairy/22/holstein/overview>

#### Jersey

- Colors include various shades of fawn and dark brown, with or without white markings

- Second most common breed
- Average 16,306 lb milk per year (~1896 gal; 6.2 gal/day) with 4.62% butterfat
- Small-size cow (~950 lb)

Details and pictures can be found at:

<http://139.78.104.1/breeds/cattle/jersey/index.htm>  
<http://www.thedairysite.com/breeds/dairy/23/jersey/overview>

#### Ayrshire

- Red and white color
- Average 16,900 lb milk (~1965 gal; 6.4 gal/day) with 3.8% butterfat content
- Medium-sized cow (~1200 lb)

Details and pictures can be found at:

<http://139.78.104.1/breeds/cattle/ayrshire/index.htm>  
<http://www.thedairysite.com/breeds/dairy/19/ayrshire/overview>

#### Brown Swiss

- Preferred color is a shade of brown, but can range from silver brown to dark brown
- Average 19,385 lb milk (~2254 gal; 7.4 gal/day) with 4% butterfat
- Relatively large, docile breed (~1500 lb)

Details and pictures can be found at:

<http://www.ansi.okstate.edu/breeds/cattle/brownswiss/index.htm>  
<http://www.thedairysite.com/breeds/dairy/31/brown-swiss/overview>

## Guernsey

- Shade of fawn with white markings
- Average 14,667 milk (~1705 gal; 5.6 gal/day) with 4.4% butterfat
- Medium-sized cow (~1150 lb)

Details and pictures can be found at:

<http://139.78.104.1/breeds/cattle/guernsey/index.htm>

<http://www.thedairysite.com/breeds/dairy/21/guernsey/overview>

## Milking Shorthorn

- Colors are red, white and roan
- Averages 16,098 lb milk (~1872 gal; 6.1 gal/day) with 3.55% milk fat
- Medium to small size cow; (~1400 lb) bull calves can be used as draft animals

Details and pictures can be found at:

<http://www.ansi.okstate.edu/breeds/cattle/milkingshorthorn/index.htm>

<http://www.thedairysite.com/breeds/dairy/36/dairy-shorthorn/overview>

When considering a breed, consider choosing a cow from the smaller breeds because it takes less feed to maintain the animal. Generally, smaller breeds give less milk volume, but will probably be higher in fat and protein. This can be an advantage if you want to make dairy products such as cheese.

Commercial prices for a lactating cow can be \$1500 (Holstein) to \$2500 (Jersey). You can probably find one that hasn't started to lactate for a cheaper price, but you then have to be able to manage the birth and raising of a calf. Buying an animal is a "buyer beware" type of market, so talk to someone who knows what they are doing.

Once you have decided on a breed, good judgment is necessary in picking the right animal. Here is a checklist of things to look for:

1. The cow must be tuberculosis and brucellosis free. An animal bought out-of-state must have a Certificate of Veterinary Inspection from the state of origin.

2. Make sure the animal appears healthy and alert.
3. Examine the udder. It should be pliable and soft. Make sure the milk does not show indications of mastitis (inflammation of the udder).
4. Feet should be trimmed and legs should be straight and strong.
5. The cow should be within a few weeks of calving or have just calved. Don't buy a cow that is about to go dry (assuming you are not willing to wait for milk) and is not pregnant. If you have to get her pregnant, it will be 9 months before she will calve and come into full milk production again.

Milk production of a cow is not a flat line, but changes over time (Fig. 1). In early lactation, milk production increases until about 2 months, then drops slowly until you quit milking in preparation for another calf. To get maximum production and use of the cow, she should be bred each year. Once she is confirmed pregnant, she should continue to be milked for another 7 months, and then you quit milking the animal for 2 months. This is called giving her a dry period and is necessary for the mammary gland to rejuvenate itself before she calves again and begins the next lactation.

## Feeding the Cow

Feeding the cow is the most expensive part of owning the animal. The cow has to eat a ration that will provide for its needs plus produce milk. Prices for feed vary considerably, but you can easily spend \$5.50 to \$7.00 per cow per day.

## Water

**Water is the most important nutrient you can give an animal.** Lactating cows will drink up to 30 gallons of water per day depending on season of year and milk production (milk is ~87% water). Water should be supplied free choice for maximum utilization and milk production. If water is fed with pails, lukewarm water is preferred, but it should always be clean and drinkable (i.e., clean the bucket often).

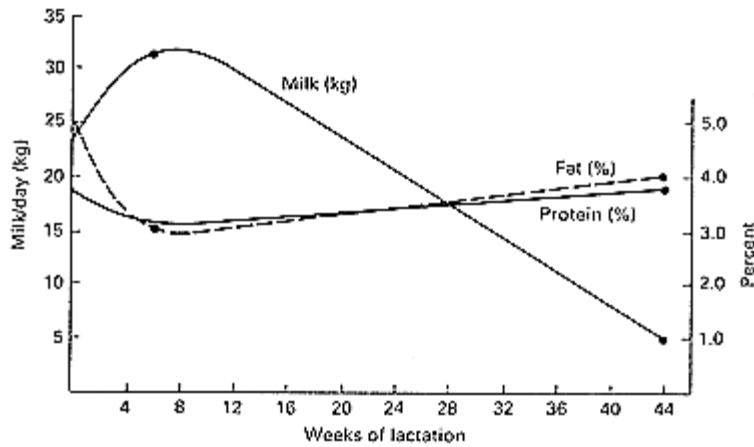


Figure 1. Milk production of a cow is not a flat line, but changes over time

Proper feeding will keep the cow in good condition and allow her to produce milk up to her genetic ability. Great care is needed to ensure the proper balance of protein, energy and minerals at a minimum cost.

A cow's body has four functions which must be met during the year.

1. Body maintenance
2. Milk production
3. Pregnancy
4. Growth (first and second lactations)

These functions are met by feeding roughages such as hay and corn silage and concentrates such as grain and beet pulp.

## Roughages

Hay is probably the easiest roughage to handle when feeding the family cow. Roughages provide fiber. Cows need some fiber in their diet to prevent digestive upsets and because the rumen microbes can digest it better than non-ruminants. It generally is preserved by drying and contains about 90% dry matter (what's left after the moisture is removed).

It is essential to get high quality hay. Hay can vary considerably in quality depending on the variety, stage of maturity and method of curing. In general, early-cut hay, which is green and leafy, is superior to stemmy, bleached, late-cut hay regardless of variety. The best hays to feed are legumes such as alfalfa and clover because they usually contain higher energy and protein. If you only have one or

two cows, it is easier and cheaper to buy the hay than grow it yourself.

Corn silage is an excellent feed and produces much more feed per acre than other crops. With corn, more value of the crop is saved than with any other crop system. Corn silage is made by chopping the entire corn plant (ears and stalks) into small pieces. Then it is stored in an air-tight (i.e., anaerobic) silo where it ferments and remains preserved by the "pickling/fermenting" process. Corn silage should be about 30 to 35% dry matter. Thus, you would feed about 3 pounds of silage in place of each pound of hay. However, corn silage cannot be grown or stored efficiently for a small herd of cows. The initial investment in equipment and storage facilities is prohibitive for part-time farmers.

If you have enough land, you can meet some of your cow's roughage needs by pasturing. You will need about 1 to 3 acres of pasture per animal. The area should be divided into plots and rotated to make the most efficient use of the feed. Usually, a pasture maintains enough roughage for the animal until mid-summer; then the grasses start to dry up. More land area will be needed to meet the grazing needs of the animal or supplemental hay should be considered. In our climate, winter feeding of roughages is your only option.

## Concentrates

A high-producing cow cannot consume enough roughage (hay, corn silage, or pasture) to meet her nutritional needs, so concentrates (grain) have to be

fed in addition to the forages. A rule of thumb is that a cow will eat 2 to 2 ½ pounds of hay for each 100 pounds of body weight. Then grain makes up the remaining portion of the ration. For example, a 1,000 pound cow would need 20 to 25 pounds hay.

A rule of thumb for feeding grain is feeding 1 pound of grain for every 3 pounds of milk produced. Dairy grain usually contains 16 to 20 percent protein. If good quality hay is fed, then 16% is adequate. If hay is poor, then consider feeding 20% protein along with 5 or 6 pounds of beet pulp per day. Below is a guideline for feeding grain:

Table 1.

Pounds of milk produced	Pounds of grain
0	0
10	2-3
20 (2.3 gal)	5-6
30	10
40 (4.6 gal)	14
50	20
60	25

Milk is typically measured by weight, not volume; 1 gal milk = 8.6 lbs.

Therefore, a 1,000 pound cow producing 20 lb milk will eat 20 to 25 pounds of good quality hay or 50 to 60 lbs of corn silage PLUS 5 – 6 pounds of grain every day. If feeding just corn silage, be careful your cow doesn't get too fat.

As mentioned before, 4 to 8 weeks after calving the cow will reach a peak in production. After this, production will slowly decline so the amount of grain fed is decreased. Then after about 10 months, the cow is dried off – assuming she is pregnant by about 3 months after calving.

At that time she is no longer fed grain unless the hay is very poor quality. At approximately 2 to 3 weeks before her calving date, she should slowly be reintroduced to grain so that she can get ready for her next lactation.

## Other Nutrients

Minerals are also important nutrients which the cow needs for production. Usually, proper grain feeding will supply most of the necessary minerals. Salt should also be offered. It is a good idea to feed salt which contains trace minerals in the granular form on a regular basis.

Owning an animal can be a satisfying and enjoyable activity; however, it also carries with it an obligation to provide for its needs in an appropriate manner. It is a 365/24/7 job that doesn't stop for holidays or weekends. It can also be expensive, so make sure it meets your needs and budget before beginning. Be sure your zoning laws allow for the animal and don't be afraid to ask for help. If you need help or information, your county Extension agent can be a great resource.

**Acknowledgment:** This publication was adapted from a similar publication written by John Porter, University of New Hampshire (1982).

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