The 4-H Dairy Cattle Project: An Introduction
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Introduction
Dairy cattle produce large quantities of milk. Many dairy cows can produce as much as 15,000 pounds of milk in a year. Given that the average glass of milk is about eight ounces, it is quite easy to see that each cow produces enough milk for several people.

A 4-H dairy project is an exciting and educational opportunity for 4-H members. It is designed for 4-H members with an interest in dairy cattle and/or the production of milk and milk products such as butter, ice cream, cheese, and yogurt.

Selecting a Dairy Project
A club member who chooses a dairy cattle project feeds, cares for, fits, grooms, and shows a calf. However, in contrast to market project (steers, pigs, lambs, and goats) participants, dairy cattle projects are not sold at a county fair youth sale. Club members are able to return home with the cattle and continue to care for them to produce calves. These calves are then kept to show, sell to market, and/or sell to other club members for their projects. The milk produced is also sold.

Parts of a Dairy Cow
Selecting a calf to show is as important as the feed and care given to a calf once it comes home. A dairy project should begin with a healthy and high-quality calf.

Before one can identify and select a high-quality calf, it is necessary to know what such a calf looks like. The first step in this process is to learn the important parts of a dairy animal. The drawing on the following page illustrates these parts.

Dairy Cattle Terms
Understanding the vocabulary used by dairy cattle producers, exhibitors, and judges is also a necessary step in learning about dairy cattle selection and production. Knowing the terms listed on the next page will be of great assistance when communicating with people in the dairy cattle business.
angularity: sharpness, freedom from smoothness, and angular in build and conformation  

breed: a group of animals with common ancestry and with similar characteristics that are passed on from generation to generation  

breeder: the owner of animals that are mated  

bull: an uncastrated male calf  

butterfat: the natural fat portion (about 3.5 percent) of whole milk; it is the main ingredient of butter (a.k.a. milkfat)  

calf: a newborn, infant, or young dairy animal  

calving: the process of giving birth  

castrate: to remove the testicles  

colostrum: the first milk produced at calving time; it contains antibodies which help protect a newborn calf from disease and infection (a.k.a. mother's first milk)  

cow: a female that has had at least one calf  

crossbred: an animal with parents of different breeds  

dairy character: angularity, openness, leanness, freedom from excess tissue, and freedom from coarseness  

dam: the mother of a particular animal  

heifer: a female that has not produced a calf  

lactose: the type of sugar contained in milk (a.k.a. milk sugar)  

mammary system: the organs and glands
which make, secrete, and store milk (udder, milk veins, teats, etc.)

**milk-producing ability:** a relative measure of the amount of possible milk volume

**pedigree:** a record of an animal’s ancestors

**polled:** an animal that does not produce or grow horns

**purebred:** an animal with same-breed parents and that could be recorded in an association registry

**registered:** an animal whose name and assigned number have been recorded in the record books of its respective breed association; this record also includes the name and assigned numbers of the animal’s sire and dam

**sire:** the father of a particular animal

**udder:** the milk-producing and milk-holding gland

**Dairy Cattle Breeds**

There are several breeds of dairy cattle. Breed characteristics such as frame size, weight, color or colors, color pattern, presence or absence of horns, ear length, and hair length vary quite widely. Breeds also have a wide variation in characteristics that are hard to see and/or measure such as milk quality and quantity, mothering ability, growth rate, and fertility. When taking these and other factors into consideration, it becomes quite clear that there is no such thing as the “perfect breed.”

What does all this mean to a 4-H member? It means that the breed selected by a 4-H member is a choice based on personal preference because each breed has its strengths and its weaknesses. When making a choice, consider the following questions:

- Are the breeds being considered available?
- What are strengths and weaknesses of each breed being considered?
- Which breed fits the climate and environment?
- Are feedstuffs and feed resources readily available?
- What are the availability and size requirements of housing facilities?
- Which is preferred, a breed that produces a high volume of milk or a breed that produces milk with a higher percentage of butterfat?

In the United States, six breeds of dairy cattle comprise the vast majority of dairy herds. These six breeds are Ayrshire, Brown Swiss, Guernsey, Holstein, Jersey, and Milking Shorthorn. It is with these breeds that a Wyoming 4-H member would probably have the most success in locating a calf to use as a 4-H project. Each of these breeds will be discussed briefly so that a more informed decision on breed selection can be made.

**Ayrshire.** This breed originated prior to the 1800s in the county of Ayr in Scotland and was first imported to the United States in the 1820s. Ayrshires range in color from white to almost solid red with most of them being a spotted mix of red and white. Regardless of the color or color pattern, the most distinguishing characteristic of an
Ayrshire is the growth and design of its horns, which grow almost straight upward. A typical Ayrshire will weigh about 1,200 pounds, be quite hardy, and be a good grazer. Ayrshires are also noted for efficiency of milk production, providing an average annual production of about 12,000 pounds with approximately 4 percent butterfat. However, they tend to be more nervous than other breeds of dairy cattle.

**Brown Swiss.** This breed was developed in Switzerland and is known by different names in different countries: Bruna in Italy, Brunedes Alpes in France, and Pardo Suizo in Spain and Latin America. These cattle were first imported to the United States in 1869. In 1906, the Brown Swiss was declared a recognized dairy breed in the U.S., and in 1907 a classification for Brown Swiss was provided at the National Dairy Show.

The people of Switzerland also used Brown Swiss as beasts of burden because they are strong, sturdy, and large (weighting 1,300 to 1,400 pounds). They are tan to brown in color with silver highlights and accents. They are very hardy and have an average annual milk production of about 15,000 pounds with about 4 percent butterfat.

**Breed note:**
There is also a Brown Swiss breed of beef cattle, so make sure to purchase the correct type of calf.

**Guernsey.** The Guernsey, like the Jersey, is a favorite among many 4-H members because of its smaller size (about 1,100 pounds when fully grown), gentle disposition, and calving ease. Guernseys are fawn (tan to orangish) and white in color and have no known undesirable genetic recessive genes. Records from herds enrolled in the American Guernsey Association’s Dairy Herd Improvement Register Program during 1992 indicated that the breed had an average annual production of about 14,700 pounds of milk with approximately 660 pounds (4.5 percent) of butterfat.

The Guernsey is also an excellent grazer. Simply put, it is a breed that was developed for pasture-based milk production. Dairy producers can realize greater profits while reducing costs because Guernseys produce their high-quality milk while consuming 20 to 30 percent less feed per pound of milk produced than larger breeds of dairy cattle.

The Guernsey originated on the Isle of Guernsey, a tiny island in the English Channel off the coast of France. It was first imported to the United States in the 1840s, and the American Guernsey Cattle Club was founded in 1877.

**Holstein.** The Holstein (also known as H olstein-Friesian) is the largest dairy breed with calves weighing 90 or more pounds at birth.
and a mature cow weighing about 1,500 pounds. Holsteins are very stylish animals possessing a color pattern of black and white or red and white spotted markings. The Holstein is the breed that comes to mind when most people think of dairy cattle. According to 1987 figures for all Holsteins enrolled in official U.S. production testing programs, their average annual production was about 17,500 pounds of milk with about 630 pounds (3.6 percent) of butterfat.

The Holstein originated in the Netherlands and was first imported to the United States in 1852. In the 1880s, breed associations began to form, and they merged in 1885 to form the Holstein-Friesian Association of America (the Holstein Association).

Breed note: There is also a Friesian breed of beef cattle, so make sure to purchase the correct type of calf.

Jersey. The Jersey, like the Guernsey, originated on an island in the English Channel—the Island of Jersey. It is one of the oldest dairy breeds, with records indicating that the breed was known in England as early as the 1770s. Jersey cattle were first imported to the United States in the 1850s.

The color varies from light gray, light brown, tan, fawn, to almost black. However, regardless of the color, Jerseys have darker highlights around the hip, head, and shoulders. They are also one of the smallest of the dairy breeds (about 1,000 pounds at maturity), have a gentle disposition, and are noted for calving ease—all of which make Jerseys a favorite with 4-H members. Average annual milk production is about 13,000 pounds with about 4.5 percent butterfat.

Milking Shorthorn. This is one of the oldest breeds in the United States, arriving from England in the 1780s. Breeders began recording their cattle in 1846, and the American Shorthorn Breeder’s Association (ASBA) was formed in 1882. In 1912, a group of Milking Shorthorn breeders organized the Milking Shorthorn Club to work within the framework of the ASBA. In 1969, the United States declared Milking Shorthorns as a dairy breed, and in 1972 the breed gained membership in the Purebred Dairy Cattle Association.

The Shorthorn has a medium-frame size and is a dual-purpose breed (milk and meat) that is red, white, or roan in color. It is best known for its fleshing ability and maternal qualities. It is the most versatile of all dairy cattle breeds, and this is one of its greatest attributes. Shorthorn cows have a high salvage value at the end of their long productive lives, and the docile cows efficiently produce large quantities of milk. The average annual milk production is about 15,000 pounds with about 500 pounds (3.3 percent) of butterfat.

Other characteristics of Milking Shorthorn cattle include calving ease, ease of management, and economy of production based on their ability to utilize forage.
Breed note: There is also a Shorthorn breed of beef cattle, so make sure to purchase the correct type of calf.

Regardless of the breed selected to show, each breed is judged or evaluated on a set of criteria that is known as the Dairy Cow Unified Scoring System. In this system, each part of a cow is evaluated and receives points. The highest possible score is 100 points. The following illustration is a copy of the score card. To better understand how this system works, it is important that exhibitors learn the point values for each part of the dairy cow.
Housing, Care, and Feeding
Successful dairy producers have to take care of many details in order to ensure that their animals are comfortable. After all, a comfortable calf is more likely to be healthy and grow efficiently. There are five main items that influence or affect the comfort level of a dairy calf: (1) high-quality housing, (2) environmental control, (3) clean feed, (4) fresh water, and (5) the company of its owner because of the tender loving care (TLC) provided.

Housing for dairy animals may be simple and inexpensive, or it may be as elaborate and as expensive as desired. Either way it must be functional both for the owner and for the calf. The housing must provide protection from the heat, sun, wind, rain, and cold. It should also be large enough to accommodate both a calf and the people who need to enter the pen to care for it. Some key items to remember when building a shed and pen are:

- A shed should provide both ventilation in the summer and protection from the cold winds and drafts of winter. It should also be well drained. If these conditions are not met, a calf will not be as comfortable, will not eat properly, and will not grow as quickly or efficiently.
- Dirt floors that are well bedded and dry are preferred for cattle. Wood and other materials are also acceptable but require plenty of bedding. Regardless of the type of floor, change the bedding weekly.
- A shed, pen, and exercise area should be dog-proof.
- Design a feeding area so that it is easy to rearrange the feeding pens and/or divide them into larger or smaller units.
- Design a shed to allow for easy feeding, watering, and cleaning. This helps lessen the chance of bacteria buildup, thus resulting in a healthier calf. Fresh air and sunshine will also help kill bacteria and help keep a pen fresh and dry. Therefore, open the doors and windows on pleasant days.
- A young calf will grow, so build a shed tall enough to allow for future growth. Also, put latches and locks where a caregiver can reach them but not where cattle can get to them.
No matter how old or healthy a calf is, it will not do very well without a proper place to live. A calf needs a proper home as well as proper care, feeding, and watering.

As previously discussed, environmental control tends to go along with housing. Since cattle prefer temperatures of 50 to 60 degrees, there are two areas of concern when discussing environmental comfort: cold and/or wet weather as well as hot and/or dry weather. In cold and/or wet weather, a place to get out of the weather (a shed) must be supplied. In extremely cold weather, a source of heat may also be required. Perhaps the easiest and most effective way to provide heat is with additional bedding and the use of heat lamps.

Safety note: To avoid a possible fire hazard, an adult should set up heat lamps.

In hot and/or dry weather, a source of shade (a shed) must be provided. Also, doublecheck to make sure that drinking water is cool, clean, and fresh. If shade and drinking water are not providing enough relief, additional cooling must be provided. Usually an electric fan is all that is needed. However, if this is insufficient, a sprinkler or mister system used in conjunction with a fan should provide enough cooling.

Safety note: Water and electricity are not a good mix. Therefore, an adult should set up a fan and sprinkler or mister system.

Cool, clean, and fresh drinking water must be available at all times. If using an automatic watering system, check the system daily. After all, if it isn’t working, it isn’t automatic. As a result, calves will not be getting the water they need. If using a bucket, pan, or tank, make sure to change the water several times each day. The drinking water should never be allowed to get hot.

In the winter, make sure that the water does not freeze. This is important because dairy cattle, like other animals, will not grow properly without sufficient water. Regardless of the season, all watering equipment should be checked and cleaned on a regular basis to ensure that it is providing plenty of cool, clean, and fresh water.

The proper nutrition and feeding of a dairy calf are the primary areas of concern for most 4-H members. However, with the commercial feeds that are available today, nutrition is not as much of a concern as it used to be. The biggest issues with feeding are making sure that the feed is clean and fresh and that the feed pans and feeders are clean.

To evaluate rations, one must first understand a few simple concepts and terms about feeds and rations. A ration is the total combination of foods that an animal is consuming. Feed is a mixture of feedstuffs. Feedstuffs are classified as either concentrates or roughages. Roughages are forages such as clover, alfalfa, and other grasses. Concentrates are grains such as corn, oats, wheat, etc., and they provide more energy
or calories than roughages, which are higher in fiber.

The Crude Protein (CP) content of dairy rations is the most practical and common measurement available to evaluate and compare the quality of dairy cattle feed. The amount of protein in dairy rations is much more important than protein quality. Regardless of the quality of the protein fed, it is changed into useable nutrients by the bacterial action in the rumen of a dairy calf stomach. For this reason, dairy cattle can effectively utilize lower quality feeds and rations. Of course, higher quality hay is recommended if an increase in milk quantity or an improvement in milk quality is desired by the producers.

Properly harvested legume hays (clover and alfalfa) have a protein content of 12 to 20 percent and when used as a complete ration will provide adequate to surplus protein for most dairy cattle. However, CP is not the only factor that must be considered when evaluating and comparing dairy rations. Total Digestible Nutrients (TDN) must also be considered. TDN is a measure of energy or calories in feed. TDN is a more accurate measurement of the concentrates in a ration because these products are relatively low in CP (8 to 11 percent) and relatively high in TDN (70 to 90 percent).

Therefore, in order for a dairy calf ration to provide a complete diet, it must have the correct balance of crude protein and total digestible nutrients. Thus, both roughages (hay and/ or pasture) and concentrates (grains) must be provided to ensure the proper nutrition for dairy cattle. Most dairy producers also provide a mineral block as a safeguard against possible nutritional deficiencies. Even though dairy cattle are ruminant animals and are therefore capable of digesting roughages due to the bacteria within their stomachs, newborn calves cannot digest this food because they are born without bacteria in their stomachs. Therefore, for the first few weeks of life, calves must be fed a liquid diet of whole milk or milk replacer.

Also, a newborn calf (like any other newborn mammal) needs to receive its mother’s first milk within the first hour or two of birth. This first milk is called colostrum, and it is extremely important for the health of a newborn calf because it contains the antibodies that help protect a calf from many diseases. Getting colostrum into a newborn within the first couple of hours of birth is important because new-
borns lose their ability to utilize the antibodies within 24 hours of birth. Therefore, feeding two to four quarts of colostrum milk within the first hour or two of birth is probably the most important thing that can be done to ensure that a calf gets off to a healthy start.

Production hint: Colostrum milk can be frozen and saved for use at a later date.

Colostrum also contains more protein, vitamins, and minerals than normal milk. Therefore, it should be given to calves until they are three to four days old. Once a calf is three to four days old, colostrum can gradually be replaced with whole milk or milk replacer at a rate of 8 to 10 percent of a calf’s body weight. Begin feeding milk replacer (or whole milk) by mixing it with colostrum at a rate of half replacer and half colostrum. Provide this mixture for three to four days to allow a calf’s digestive system to adjust to the milk replacer. The next step is to stop giving the colostrum and to begin giving a calf starter feed along with milk replacer. After several weeks of this procedure, it will be time to remove the replacer and get the calf on a ration of grain and hay. Table 1 on the following page shows the relationship between a calf’s age and its feeding requirements.

Feeding according to the guidelines and recommendations shown in Table 1 and following the items listed below should result in very few feeding problems and a more successful and enjoyable dairy cattle project. For questions or concerns regarding the care or feeding of a dairy calf, contact a county Cooperative Extension Service office for assistance and advice.

- Begin by feeding small amounts of a ration.
- Feed only what is required.
- Feed a balanced ration.
- Feed at the same time each day and try to feed every 12 hours.
- Do not skip a feeding or vary feeding times.
- Gradually increase the amount fed. Do not increase feed by more than ½ pound per day.
- Gradually change from one ration to another. Mix them together (first more of the original and then more of the new one) and make the change over 5 to 7 days.
- If a calf goes off its feed, start over by reducing the amount fed. Then, slowly bring the calf back to full feed by gradually increasing the amount of feed given at each feeding.

Health Care

In order to have a successful dairy calf project, it is extremely important to start with a healthy calf and to maintain the health of the calf throughout the project. Therefore, one must be able to identify the difference between a healthy dairy calf and an unhealthy dairy calf.

A healthy calf will be alert, frisky, playful, bright eyed, and appear happy to see its caregiver. A healthy calf will drink plenty of water and eat with eagerness. The stool (manure) will be about the consistency of pudding and moist but not runny and watery. The breathing will not be loud or labored. The normal body temperature of a healthy calf is about 101 degrees.
An unhealthy calf will have a decreased appetite. It will not drink as much and will not be frisky or appear happy. The calf will also appear listless, depressed, shrunken, and dull eyed. It may also have a hump or arch to its back and will most likely be standing away from the rest of the herd. The stool may be very dry and hard (constipated) or just the opposite - very watery and loose (scours). The breathing may be hard, fast, and labored. The body temperature may be higher than normal (any temperature higher than 102 degrees is considered a fever).

If a calf appears to be sick, there are two very important steps to follow: (1) tell an adult and (2) separate the sick animal from the other calves. After getting advice from a veterinarian or other professional, follow that advice very carefully. Following the vaccination schedule outlined and detailed in Table 2 will also greatly enhance the chances of having a healthy dairy calf project.

### Table 1. Feeding Dairy Calves and Cattle

<table>
<thead>
<tr>
<th>Age of the Calf</th>
<th>Types of Feed</th>
<th>Daily Amount to Feed to Smaller Breeds</th>
<th>Daily Amount to Feed to Larger Breeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 3 days old</td>
<td>colostrum milk</td>
<td>7 to 8 pounds</td>
<td>8 to 9 pounds</td>
</tr>
<tr>
<td>3 to 7 days old</td>
<td>½ colostrum milk and ½ whole milk or ½ milk replacer</td>
<td>7 to 8 pounds</td>
<td>8 to 9 pounds</td>
</tr>
<tr>
<td>8 to 10 days old</td>
<td>same as 3 to 7 days old, but also slowly add a calf starter</td>
<td>7 to 8 pounds of the milk mixture, plus about a half a pound of calf starter feed</td>
<td>8 to 9 pounds of the milk mixture, plus about a half a pound of calf starter feed</td>
</tr>
<tr>
<td>10 to 42 days old</td>
<td>only whole milk or milk replacer, plus continue to give and increase the amount of calf starter feed</td>
<td>slowly reduce the milk until the calf is weaned, provide the calf all the starter it will eat until it is eating about 1½ pounds</td>
<td>slowly reduce the milk until the calf is weaned, provide the calf all the starter it will eat until it is eating about 2 pounds</td>
</tr>
<tr>
<td>42 days old to 3 months old</td>
<td>calf starter and a good quality hay</td>
<td>2 to 4 pounds of the starter and all the hay it will eat</td>
<td>3 to 5 pounds of the starter and all the hay it will eat</td>
</tr>
<tr>
<td>3 months old to 2 years old</td>
<td>a grower feed and a good quality hay</td>
<td>2 to 4 pounds of the grower and all the hay it will eat</td>
<td>3 to 5 pounds of the grower and all the hay it will eat</td>
</tr>
</tbody>
</table>

* A good-quality starter feed will be at least 18 percent protein and be highly digestible. A grower feed will usually be slightly higher in protein (about 20 percent) and somewhat harder to digest. However, it will also be less expensive.
Many diseases and health problems can affect dairy cattle. However, mastitis is a disease that requires special attention because it affects the milk-producing system of a dairy cow. Mastitis is an inflammation of the udder (mammary gland or milk-giving gland) of milk-producing animals. It is usually caused by bacteria. The symptoms of mastitis are pain and swelling of the udder, and it will feel hot and hard when touched. Usually there will also be discoloration of the udder and of the milk. The infected udder will change in color from pink to red. Along with changing color, the milk will also change in texture and thickness. Examining a laboratory culture or growth of the bacteria causing the mastitis is the best way to determine the exact diagnosis.

Consulting a veterinarian is a very important step when trying to achieve a successful treatment of this disease because there are many different bacteria that can cause mastitis. Identifying the bacteria leads to a knowledgeable choice of antibiotics, which makes a big difference in the success or failure of the treatment. If the treatment choice is unsuccessful or if the infection goes untreated, spread of the disease is very likely, and the infected cow may lose a portion of its udder, the entire udder, and/or may even die.

The treatment for mastitis consists of antibiotics given directly in the udder as well as additional oral or injectable antibiotics. However, prevention is much better than treatment. The cause of mastitis is most commonly rough treatment of the cow and/or her udder. Also, unclean management and milking practices are a major cause of mastitis. Gently wash a cow’s udder before milking and dip or spray the teats after milking with a teat dip. Have clean hands before milking each cow to prevent spreading the bacteria.

The two main diseases that affect young calves are scours and pneumonia. The symptoms of these two diseases are similar – the calves will look droopy, will not have

<table>
<thead>
<tr>
<th>Age of the Calf</th>
<th>Vaccination to be given</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 to 6 weeks before the calving date</td>
<td>E. coli bacteria (Rota and Corona viruses) given to the cow</td>
</tr>
<tr>
<td>1 to 3 months old</td>
<td>blackleg</td>
</tr>
<tr>
<td></td>
<td>malignant edema</td>
</tr>
<tr>
<td></td>
<td>clostridium bacteria (many types)</td>
</tr>
<tr>
<td>4 to 6 months old</td>
<td>brucellosis</td>
</tr>
<tr>
<td></td>
<td>leptospirosis (2 doses, 4 weeks apart)</td>
</tr>
<tr>
<td>8 to 12 months old</td>
<td>IBR-BVD (if all heifers are vaccinated at this age with modified-live vaccine, protection should be adequate for the lifetime of a calf)</td>
</tr>
</tbody>
</table>

Table 2. Vaccination Schedule for Dairy Calves
much energy, and will most likely quit eating; therefore, diagnosis can be somewhat difficult. However, diarrhea is the main symptom of scours, and it may or may not be present with pneumonia. Watch the calves very closely every day for signs of either disease because either one can kill a calf within a few hours to a few days. Therefore, treatment should begin as soon as either disease is suspected. Also, a caregiver should stop feeding whole milk or milk replacer during the treatment.

Mastitis, scours, and pneumonia (like most diseases) are fairly easy to control once they have been diagnosed and properly treated. These diseases and most other health problems can be avoided or kept to a minimum by following these seven steps:

- Buy only healthy calves from healthy herds.
- Keep vaccinations up to date.
- Maintain a de-worming program.
- Clean sheds and pens at least once a week.
- Clean waterers and feeders at least once a week; twice a week is much better.
- Watch calves closely and on a daily basis for signs of sickness and ill health.
- Inform an adult if a calf appears to be sick.

Fitting and Grooming

Fitting and grooming does not start at a show or even during the week of a show; it starts the day a calf comes home. Fitting a dairy calf means feeding, watering, halter breaking, and otherwise caring for it so that it achieves and maintains proper condition.

Proper condition means that a calf is neither too fat nor too thin. Through experience one can learn what varying amounts of fat (or lack of fat) look and feel like. Fat feels soft and loose. Muscle or meat feels hard and firm. Bone feels very hard and concrete. Fat, also known as cover or finish, gets deposited on dairy cattle in certain areas and in a certain sequence (front to rear and top to bottom). By knowing this sequence and observing or feeling these areas, it is possible to estimate how fat a calf is or is not getting. The areas to check for fat deposit are the ribs, fore flank, rear flank, and tailhead. To ensure that proper condition is achieved and maintained, it is important to learn about fat deposit before adjustments are made to a calf’s feed, feeding, or exercise routine.

Even though proper condition has the same meaning or standard for all dairy calves, they do not all achieve proper con-
dition at the same time or in the same manner. Some calves will start to get fat at a young age, and others will remain lean all the way to maturity. Calves that start to get fat at a young age must be removed from full feed and put on a restricted diet (less feed per day). These calves should also be exercised at least 10 to 15 minutes each day in addition to the 15 to 20 minutes per day that they were receiving to achieve and maintain show condition.

Grooming of a dairy animal can be divided into three categories or uses: washing, clipping, and foot care. Equipment and items needed for washing are a halter (for leading and tying a calf), a hose and/or pail, a scrub brush, mild soap or detergent, and something to use to dry the calf. Livestock blowdryers are not required for dairy cattle projects. However, they will speed up the drying process. Therefore, they are useful and beneficial.

Items needed for foot care are foot trimmers or grinders and foot care medication for after hoof trimming.

Items recommended for clipping include livestock clippers and/or sheep shears (use 20 to 22-tooth combs in the sheep shears), small animal clippers (for use on the ears and face), oil for the clippers, hand shears or scissors (for the hard-to-reach places such as the flank, elbow, twist, udder, brisket, etc.), a spray bottle (for wetting the hair), a grooming chute (for holding and controlling a calf while it is being clipped and groomed), and an extension cord.

Safety note: Livestock clippers (not sheep shears) are recommended for use by
younger exhibitors because youngsters are less likely to cut themselves or the calf with these clippers.

Before arriving at a show, a calf should have been washed and clipped a time or two. That way it has some idea of what is happening and will not be as scared, nervous, or jumpy.

The feet should be trimmed a time or two before a show. The final trimming for a show should be done about 14 to 21 days before show day. This allows time for healing if an injury occurs.

Health and safety note: It is highly recommended that a qualified and professional hoof trimmer perform the tasks of grinding the hooves and trimming the feet.

Finally, if an animal has not had its final clipping, the clipping should be done at least a day or two before show day. However, it is better to do it a week or two before a show because it will allow the hair time to grow and blend, and it will reduce unsightly clipper errors if they occur. Also, if a caregiver has clipped an animal a time or two before the final grooming, he or she will have a much better idea of what to do and how to do it. Therefore, the final clipping and grooming will look presentable for a show ring. The first step in clipping is to wash the calf. Washing involves wetting the animal, soaping and scrubbing gently but firmly, and thoroughly rinsing the calf.

Washing note: The cleaner the calf the easier it will be to clip the animal and the longer the clipper blades will stay sharp because they are not getting dulled by dirt particles. Therefore, make sure that the calf is extra clean.

After washing the animal, place it in the grooming chute and dry it. Clipping guidelines vary from breed to breed, so check with the breed association of the breed selected to show to make sure of the specific recommendations. (For example, Brown Swiss breeders prefer to leave the long hair in the upper inside part of the ears, and Milking Shorthorns are not clipped on the head and neck; the only clipping required is the hair inside the ears, on the tail, and on the udder of producing cows.) General or basic grooming guidelines include:

A. Start clipping on the tail. Begin about four inches above the switch and clip against the hair. Blend the hair at the switch and at the tailhead.

B. The long hair at the top of the tail where it curves into the tailhead should be left on the center line to give the rump a square and level appearance.

C. Remove the long hair at the top of the tailhead and on the sides.

D. Clip the hair along the top line to give the back a straight appearance.
E. All the hair in front of the shoulder (dotted line on the drawing) should be clipped. Be sure to blend the hair along the clip line and do not clip behind the shoulder.

F. Do not cut the hair from the dip in the neck in front of the withers or from the brisket.

G. Clip the entire head except for whiskers on the muzzle.

H. The hair should be clipped from the legs but do not clip above the hock.

I. If the hocks are protruding, clip the hair on the sides to give a more narrow appearance.

Grooming hint: Using small clippers to remove the hair from around a calf’s ears, eyes, and face will make this task much easier and will result in a smoother appearance.

The following drawing corresponds to items A to I described in the preceding section. The other drawings contain more detail and will also help to explain and illustrate the proper clipping techniques to use when preparing a dairy calf for a show ring.

Grooming note: No amount of grooming can correct or make up for a poor job of feeding, care, and management of a dairy animal.

Following the recommendations in these guidelines and illustrations will result in a dairy animal that has a more uniform and eye-appealing appearance. As a result, there will be very few points deducted from the Fitting and Showing Score Card.

Following is a copy of the score card. To better understand this scoring system, it is important for exhibitors to learn the point value assigned to each aspect of fitting and showing a dairy cow.
Clip entire head to bring out character, expression, and clean lines.

Clip neck and shoulders to a line between top of shoulders and point of the shoulders.

Trim hair from inside and outside of ears. On Brown Swiss, a fringe may be left inside ears.

Remove long hair from above knees to hocks to show refinement.

Smooth top line of rump. Leave hair in low spots. Blend by clipping with lay of hair.

Clip hocks and hind legs to show refinement, to straighten legs, and to define tendons.

Clip with lay of hair to blend clipped and unclipped areas. Do not clip animal all over, except if it won't shed its long hair. If you must, clip one month before fair time. This will allow hair to grow out, and provide a winter coat for your animal.

Clip tail from switch to rump against lay of hair.

Clip long hair off udder.
Showing a Dairy Animal

Showing a calf, like fitting and grooming, does not start at a show; it also starts at home. It begins with the feeding, exercising, washing, brushing, clipping, halter breaking, and other tasks that should be done from the very first day a calf arrives at its new home. Proper feeding gets a calf to its desired show weight. Exercising a dairy calf gets it in show condition (lean, not fat) and in show ring shape (able to walk for a long period of time without tiring). Washing, brushing, clipping, and other grooming techniques make a calf neat, clean, and otherwise presentable to a judge.

Training a calf begins by earning its trust and confidence and by making friends with it. This is accomplished by playing with it, brushing it, and otherwise spending time with it. When a calf stops running from a caregiver when he or she enters the pen, it is ready to start an exercise and training routine.

The first step is to catch the calf. Since a calf is shown with a halter, the second step is to get it used to wearing a halter and lead strap. This is usually accomplished by putting the implements on for short periods of time and then gradually increasing the time that the calf has them on.

Safety note: During these sessions a calf should never be left unattended.

This is followed by gently talking to it, petting it, and rubbing it. Rub down the back, sides, neck, and legs. This is simply to get the calf used to its owner and to be-
ing touched. The fourth step is walking and leading the calf, which is somewhat difficult with dairy cattle because an exhibitor walks backwards when leading a calf. After a calf is accustomed to being caught, haltered, touched, and walked, the next step is to teach it to set up. Setting up means getting each leg to come straight down from the body except for the right hind leg. When showing a cow, the right hind leg should be about a half a step forward. When showing a bull or heifer, this leg should be set slightly to the rear.

Posing hint: Many new exhibitors get this only half right. Remember, setting up correctly not only means when the animal is viewed from the side but also when it is viewed from the front and when it is viewed from the rear.

When placing or setting the front feet and legs, raise or lift the calf’s head very slightly by lifting on the lead strap to cue the calf so that it knows the front feet and legs are being set. When the front feet and legs are set, return the head to its normal position. To set the rear feet and legs, lower the calf’s head very slightly by pulling down on the lead strap to cue the calf. When the back feet and legs are set, return the head to its normal position.

Posing note: Since dairy cattle are not exhibited with a show stick, it is permissible and acceptable to use the right hand (the left hand will be holding the lead strap) to push on the neck and shoulder area of the calf to assist with setting up the feet and legs.

Now that the calf has all four feet and legs in the desired position (this is fairly easy if practiced at home), it must be kept in the proper position. This is accomplished by standing on the left side of the calf and keeping it relaxed but alert by rubbing or scratching it, talking to it very softly, slightly wiggling its lead strap, or by some other subtle method.

When the feet and legs are set, the back, neck, and head must be placed and maintained in a straight line. This is accomplished by getting the head straight with the neck, which almost automatically aligns both of them with the back. To get the head and neck straight is fairly easy – simply push or pull on the lead strap. When everything is in the desired position, “lock it” in place by lifting up on the lead strap to make the calf hold its head up.

Now that the calf has all four feet and legs in the desired position and its body is in a straight line, it must be kept in this position. This can be accomplished by rubbing or scratching the calf, speaking softly to it, and keeping its head held up. This will keep the calf relaxed but alert and thus looking its best for the judge. Also, always stand so that the judge sees the calf. The calf should be kept between the exhibitor and the judge. The only exception to this is when the judge crosses in front of the calf. At that moment, for a split second, the exhibitor will be between the judge and the calf because the exhibitor always shows
from the left side of the calf. This split second of visibility blockage is impossible to avoid.

Showing note: While setting up the calf, keep an eye on the judge. The calf must stay between the exhibitor and the judge. Also, it is important to listen to the judge's instructions.

When practicing each of these steps, the exhibitor and the calf will become a team. When the exhibitor feels confident and comfortable, he or she can ask someone to act as a judge. He or she should walk around the calf, handle it, and do anything else that might benefit the exhibitor and/or the calf.

Showing tip: Attending showmanship clinics and workshops is a good way to learn more about recommendations and techniques. However, do not just attend – go home and practice what has been learned.

Training and practicing for showmanship involves preparing oneself as well as teaching the calf. An exhibitor must know what to do and how to do it and to be mentally prepared. If an exhibitor lacks poise and self-confidence in the show ring, the calf will sense that something isn’t right and will become confused and uncomfortable. Consequently, the calf will not respond to the cues. This will lead to further frustration and result in a cycle of confusion and frustration between the exhibitor and the calf.

Showing hint: Remember, showing involves the appearance and attitude of the exhibitor, the appearance of the calf, and the showing or showmanship of the calf. Also, be on time for the class and be courteous not only to the judge and ringmaster but also to fellow exhibitors.

To prepare for a show ring:

- Wear clean, neat, and appropriate clothing.
- Wear boots or hard shoes, not soft shoes.
- Carry a rag in a pocket.
- Arrive on time for the appropriate class.
- Know the calf’s tag or tattoo number, weight, breed, and date of birth (calving date).
- Know other relevant information such as the ideal body temperature, protein percentage of the feed, amount of feed being provided, etc.
- Know what the judge looks like and/or is wearing.
- Know what the ringmaster looks like and/or is wearing.

To prepare a calf for a show ring:

- Wash the calf either the night before a show or the morning of a show.
- On show day, feed the calf at least two hours before show time but only feed approximately half of the usual amount. This keeps the calf attentive and alert.
- Groom and brush the calf at least twice before show time. This brings out the natural oils and removes the dust and dirt, resulting in a cleaner hair coat.
- Before leaving for the show ring, give the calf a drink of water and a final brushing.
• Be calm and gentle with the calf while on the way to the show ring and while in the show ring.

To work as a team in a show ring:
• Be aware of the location of both the judge and the ringmaster as well as any instructions they may give.
• Be courteous to the judge, ringmaster, and other exhibitors. Be sure to say “yes sir” or “no sir,” “excuse me,” and “thank you.”
• Know the calf’s location at all times, especially in relation to oneself, other calves, and the judge.
• Keep the calf between oneself and the judge.
• Keep the proper distance (about a calf length) between the calf and the other calves.
• When walking the calf, walk slowly.

• Walk backwards by the left side of the calf’s head and keep one’s shoulder even with the calf’s head.
• When setting up the calf, do it quickly, quietly, confidently, and smoothly.
• If the judge touches the calf or if the calf rubs against another calf, use the rag to re-smooth the hair and/or to wipe off dirt.
• Maintain eye contact with the judge.
• Smile, relax, and enjoy the competition.
• Keep cool, calm, and collected; this helps to keep the calf under control.
• Be humble when winning and gracious when losing.
• Remember to thank the judge and congratulate the winners after the final placing.