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MOSCOW, APRIL 1948

EXTENSION BULLETIN NO. 151

UNIVERSITY OF IDAHO
COLLEGE OF AGRICULTURE

EXTENSION DIVISION

D. R. THEOPHILUS

Director



4-H Club
DAIRY BULLETIN

DIVISION ONE

COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS
OF THE STATE OF IDAHO, UNIVERSITY OF IDAHO COLLEGE OF
AGRICULTURE, AND THE UNITED STATES DEPARTMENT
OF AGRICULTURE, COOPERATING

BOYS' AND GIRLS' CLUBS

Purposes and Aims of 4-H Club Work

4-H Club members "learn to do by doing." Dairy club members learn approved practices in dairy farming and develop skills by reading, attending club meetings, giving demonstrations, and by competing in exhibits and contests with other club members. Many former club members are now successful dairymen, and others have good jobs as a result of their club training and experience.

GENERAL REQUIREMENTS

1. Boys and girls between the ages of 10 and 21 are eligible to membership in 4-H clubs.
2. Standard 4-H clubs consist of five or more members, regularly enrolled with the County Extension Agent and State Club Leader.
3. The year's work should be planned so each member will receive instruction in various jobs pertaining to his project. Six or more club meetings during the year will be needed.
4. Each member owns a dairy animal for which he or she takes full responsibility for at least 6 months during each year.
5. Each member keeps a complete record of all feeds used and all income and expenses in connection with his project in a book provided by the Extension Service. This record is turned in to the leader at the end of the year.
6. The Idaho Extension Service awards achievement certificates with appropriate seals to all club members who complete the year's work in a satisfactory manner.

UNIVERSITY OF IDAHO
4-H Club Dairy Bulletin

DIVISION I

G. C. ANDERSON*

Introduction

4-H dairy club work is organized to give farm boys and girls opportunity to gain experience in judging, feeding, managing, breeding, and exhibiting dairy cattle and in keeping business-like records.

4-H club members "learn to do by doing." You will need a dairy heifer or cow of your own for which you will be responsible for at least 3 years. It will be your job to water, feed and care for her in such a way that she will develop into a profitable dairy cow.

Selecting Dairy Cattle for Project Work

In choosing the animal for your project, there are a number of things to consider, such as breed—purebred or grade—age, type, condition, pedigree, and personal preference.

It is usually best to choose an animal of the same breed as the herd at home because it is easier to fit your project into such herd management programs as feeding, housing, and breeding. Each breed has certain advantages. All breeds have good cattle and poor cattle. The choice of an animal is really more important and more difficult than is the choice of a breed. Successful dairymen choose a breed and keep that breed as long as they are in the dairy business. 4-H club members should profit by their example.

Either grade or purebred cattle can be used for 4-H club work and are equally satisfactory. Less money is involved in the purchase of a grade animal and for that reason it is advisable for most beginners to start with a grade calf. A purebred heifer can be purchased when experience and finances justify swithcing from grade to purebred. If a grade is used, it should show distinct color markings and characteristics of one of the breeds of dairy cattle. She should be sired by a registered sire and be from a good cow of the same breed as the sire. Off-color animals of mixed breeding always show at a disadvantage and many times develop into undesirable cows. Dairy cattle are much like their ancestors, especially the sire and dam, so the higher the quality of the animals closely related to it, the more chance there is that the calf will be of high quality. For this reason it is always advisable to look at the sire and dam of the animal and check their production records before buying. Breeders of dairy cattle call this "checking up on the pedigree."

Type is a very important factor in choosing dairy cattle. Ask the advice of your parents, leader, county extension agent, or an experienced dairyman regarding the type of animals to select for your project.

*Extension Dairyman

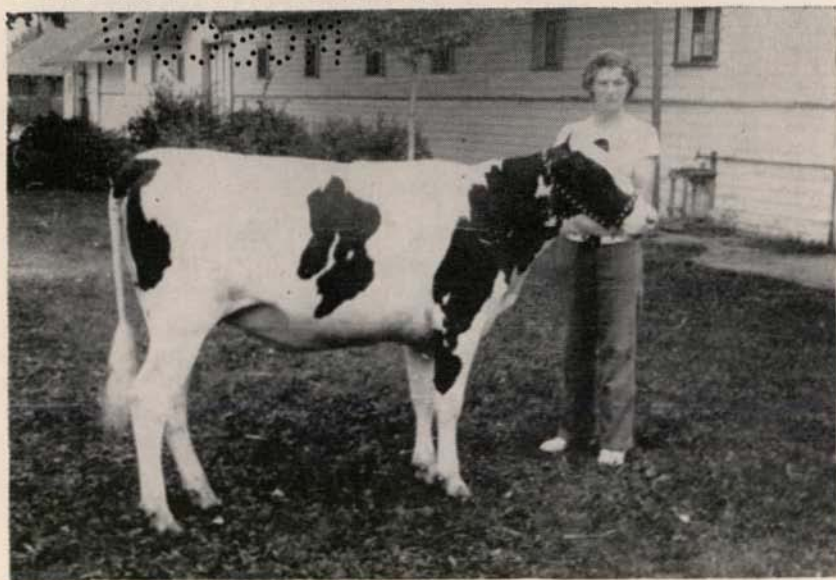


Figure 1.—A good type, well-fitted club heifer.

Younger club members usually prefer young calves that are easy to handle and train, while older members often prefer older animals that soon bring financial returns. Choose calves at least 2 to 3 months old that are well started as there is less danger of losing them from disease or other troubles common to very young calves. It is well to remember that dairy cattle are shown by age groups at the fairs and that the age groups are divided on January 1 and July 1 birth dates. A calf born in January would have the advantage of age and size over a calf born in March or April, as it would be 2 to 3 months older and show in the same age group or class. As the animals mature, however, this advantage disappears. A calf born between January 1 and July 1 would be called "a junior calf" while one born between July 1 of the previous year and January 1 would be called "a senior calf." These same classes and dates apply to yearlings but older animals are shown as "producing cows" in the 4-H club shows.

Heifers and cows are much more desirable animals for project work than are bulls because they are easier to handle and are not as dangerous. Bulls grow mean and too difficult for club members to handle. There is also more chance to make a profit from cows, since they produce milk and raise calves that can be sold. No class is provided for bulls in 4-H club fairs. Bulls must be shown in the open classes.

Thrifty, well-grown calves that are free from disease should always be selected because they will keep right on growing and gaining when given good feed and care. It takes a long time for a

poorly fed or sick calf to completely recover and be in condition for exhibit or become a useful animal.

Select animals which are above average in quality—animals you will be proud to own, work with, and exhibit.

Feeding Dairy Calves

Feeding dairy calves to keep them healthy and growing is one of the most important jobs on your dairy farm. At least one-fourth of the cows in the United States are replaced each year by 2-year old heifers. This means that you must raise at least two heifer calves and two yearling heifers each year for replacement in an eight-cow dairy herd. Learn to raise dairy calves properly and you are well on the way toward becoming a successful dairyman.

Cows that are healthy and well fed usually raise strong healthy calves. Give the cow plenty of good pasture, or bright green legume hay and some grain for several months before her calf is born. A mixture of at least two or three home-grown grains, ground or rolled and thoroughly mixed, is better than feeding one grain. A mixture of grains makes the ration more complete and more palatable. Cows that are fed a complete ration are more likely to produce strong healthy calves.

New born calves require their own mother's milk for at least 3 or 4 days. It is rich in vitamins and minerals and gives the calf strength and resistance to diseases. Most dairymen prefer to leave the calf with its mother 24 to 48 hours before taking it away to teach it to drink from a pail. Others claim better results by taking the calf away immediately after it is born and giving it measured amounts of milk twice a day. Weighing or measuring the milk prevents the calf from over-eating and getting indigestion and scours. Young calves can be taught to drink from a bucket easily if you keep them away from the cow for 12 to 18 hours, or until they are hungry. By wetting your first two fingers with milk and allowing the calf to suck them, you can easily get it to put its mouth in the pail of milk. After a few tastes of milk, most calves will drink from a pail without further trouble.

The amount of milk to feed young calves depends on the breed, size, and condition of the calf. Milk from Jersey and Guernsey cows is rich in butterfat and the calves are small, while the milk from Holsteins and Milking Shorthorns is low in butterfat and the calves are large. Jersey and Guernsey calves should be fed smaller quantities of milk than calves of other breeds—usually 5 to 6 pounds of milk per day in two feedings is plenty for them; Holsteins, which are much larger, should have 7 to 8 pounds per day; Ayrshires, Brown Swiss, and Milking Shorthorns should have 6 to 7 pounds per day. The exact amount fed should be recorded each day and the totals transferred to the feed record book at the end of each month.

Milk for calves should always be warm, fresh, and sweet. Pails should be thoroughly washed and sterilized with boiling water or

a chlorine compound after each feeding. You should feed at regular times and give regular amounts which are weighed or measured accurately.

Whole milk from the herd, rather than one cow's milk, should be fed after the third or fourth day until the calf has a good start. Since whole milk is expensive, it is advisable to change to cheaper feed as soon as the calf has a good start. The ideal way to raise good calves is to gradually change from whole to skim milk, starting when the calf is 2 to 3 weeks old, by substituting 1 pint of skim milk each day for 1 pint of whole milk until the complete change is made. As the calves grow, the amount of milk should be increased slowly up to 7 to 8 pounds per day for Jerseys and Guernseys and 8 to 10 pounds per day for other breeds. Larger amounts may be fed if skim milk is plentiful and cheap.

Calves should be taught to eat hay and grain as early as possible, which is usually when they are 10 days to 2 weeks of age. A handful of good, fresh hay should be put in their manger every day after all the old hay and feed has been cleaned out. Good green, sun-cured alfalfa is best. Too much green alfalfa may cause scours in young calves. All calves should be watched and the hay limited if they tend to scour on it. A little handful of grain rubbed on the calf's nose or tongue or dropped into the pail after it has finished its milk will nearly always get the calf started to eating grain quickly. A good practice is to feed calves all the grain they will eat up to 2 pounds per day. Grain mixtures for calves should contain a large portion of oats and bran along with some barley, wheat, or corn. Rolled or ground grains are more palatable to calves than whole grains and are easier to mix. The following mixture has proved very satisfactory for feeding calves:

- 42½ pounds cracker yellow corn, or
rolled or ground barley
- 42½ pounds rolled or ground oats
- 14 pounds wheat bran
- 1 pound iodized salt

Fresh, clean water always should be where calves can get it when they want it. Water pails or troughs should be cleaned regularly to prevent contamination. In the wintertime, the water should be fresh from the well at least twice daily or warmed with a tank heater.

If the hay and grain are good quality, calves should not need minerals other than iodized salt. If it is necessary to feed poor hay, then it is advisable to feed steam-sterilized bone meal, either 1 percent in the grain or free choice in a salt box. In this case, it would be well to feed some cod liver oil or a feed with high Vitamin A content such as carrots or yellow corn, especially in the winter months.

Most successful calf feeders do not turn calves out to pasture until they are 3 to 4 months old because the grass is watery and the calves eat too much of it causing them to scour. It is better to

keep them in the barn or dry lot and feed them hay until they are old enough to go on pasture safely.

Raising Dairy Calves Without Fresh Milk

Often milk is high in price making it desirable to sell the milk and use other feeds for raising calves.

Many of the experiment stations have worked out calf meal mixtures which can be used instead of milk for raising calves after they have been given a good start on milk for 4 to 6 weeks. The University of Idaho lists in Table 1 mixtures which are made of feeds available in Idaho.

Table 1.—Suggested calf meal mixtures

Ingredients	No. 1 (pounds)	No. 2 (pounds)	No. 3 (pounds)
Rolled or ground barley.....	25	25	25
Rolled or ground oats.....	25	25	25
Dried skim milk or buttermilk.....	35	25	13
Wheat bran.....	15	17	12
Linseed oil meal.....	5	12
Steamed bone meal.....	2	2	1
Finely ground limestone.....	1
Iodized salt.....	1	1	1

A thrifty, healthy calf can be raised on any one of the mixtures in Table 1 if it is well started on milk. By the time a calf is 6 or 7 weeks old, it should be eating enough calf meal and hay so the fluid milk can gradually be discontinued from the ration. When the milk is discontinued, the amount of calf meal should be increased so it is getting all that it will eat readily. This may be 3 or 4 pounds a day per calf. This would be equal to feeding 8 or 10 pounds of skim milk and 2 to 3 pounds of grain per day.

Feed these calf meals until the calf is 5 or 6 months old. After this the calf can get along nicely on a grain mixture similar to the one given on Page 6. With plenty of good roughage, a yearling dairy heifer may not need grain except to condition her for the show or for freshening. Feed only enough grain to keep the calf thrifty and sleek, but not fat.

Keeping Dairy Records

A good record of the 4-H club project activities is valuable because of the information it furnishes about the cost of raising dairy cattle. It also gives training in proper accounting methods. You should start the club year by taking an accurate list or inventory of quantities, prices, and values of your livestock and the supplies and equipment. Record this in your record book in the space provided for the beginning inventory.

When the beginning inventory is completed, it is a simple matter to jot down notes on feeds used, expenses and receipts. At the end

of each month enter the totals for the month in the proper place in the record book. There are places in the book where other information, such as body weights, birth dates, breeding dates, and pedigrees should be recorded. When the project year is closed, usually in October, add up the monthly receipts and expenses to find the yearly totals. Check the inventory to see whether it has increased or decreased in quantity and value and record in the space provided for the closing inventory. This information is summarized in back of the book to see whether or not the project has been profitable.

Write a short story telling the main events of the year, about the purchase of new animals, demonstrations given or seen and all other activities that make the year complete. This story is part of your project and will help you earn an achievement certificate.

When the record book is completed at the end of the club year, hand it to the club leader. He will send it to the county extension agent so you will get full credit for your work. One of the best ways of finding out if a profit can be made with a project is to keep an accurate record of the expenses and income connected with it. These records are also used to choose the winners of special awards such as scholarships, trips, and medals. A neat, accurate, complete, well-kept record book pays dividends.

Caring for Dairy Calves

Dairy calves should always be kept in clean, dry quarters which



Figure 2.—Individual calf pens at the University of Idaho.

are free from drafts. Calves can stand either cold or hot weather if they are dry and clean. Wet, dirty stalls produce discomfort and lower resistance to such diseases as scours, colds, pneumonia, and other ailments common to young calves. Slatted or false floors laid over the regular floor help to keep the bedding dry and clean. Pens and stalls should be cleaned at least once every day.

Whenever it is possible, calves should have individual pens or stalls in a separate barn from other livestock so they will not be so likely to get diseases from each other or other animals. By keeping calves separate from each other until they are 6 weeks to 2 months old, they can be taught to eat their hay and grain without developing the habit of sucking other calves' ears, tails and udders. Sucking is a very bad habit for calves to develop because it produces digestive disorders and may spread mastitis infection to the udders of calves that are sucked. This may cause blind quarters or diseased udders when they freshen. There is also less danger of over feeding when calves are kept in individual pens.

Windows on the south side of the barn help to keep the barn light and airy, which is necessary to the comfort and health of the calf. Windows should be hung on hinges or fixed so they can be opened or closed according to the weather. A burlap or canvas hung

Table 2.—To be used in computing weight of calf when scales are not available.

Heart Girth (inches)	Weight (pounds)	Heart Girth (inches)	Weight (pounds)	Heart Girth (inches)	Weight (pounds)	Heart Girth (inches)	Weight (pounds)
26	80	42½	248	59	607	75½	1,219
26½	82	43	257	59½	622	76	1,241
27	84	43½	266	60	638	76½	1,263
27½	86	44	275	60½	652	77	1,285
28	89	44½	284	61	668	77½	1,308
28½	92	45	294	61½	684	78	1,331
29	95	45½	304	62	700	78½	1,354
29½	98	46	314	62½	716	79	1,377
30	101	46½	324	63	732	79½	1,400
30½	104	47	334	63½	749	80	1,423
31	108	47½	344	64	766	80½	1,446
31½	113	48	354	64½	783	81	1,469
32	118	48½	364	65	800	81½	1,492
32½	123	49	374	65½	817	82	1,515
33	128	49½	384	66	835	82½	1,538
33½	133	50	394	66½	852	83	1,561
34	138	50½	404	67	871	83½	1,584
34½	143	51	414	67½	889	84	1,607
35	148	51½	424	68	908	84½	1,630
35½	153	52	434	68½	927	85	1,653
36	158	52½	445	69	947	85½	1,676
36½	163	53	456	69½	967	86	1,699
37	168	53½	467	70	987	86½	1,722
37½	174	54	478	70½	1,007	87	1,745
38	180	54½	489	71	1,027	87½	1,768
38½	186	55	501	71½	1,048	88	1,791
39	192	55½	513	72	1,069	88½	1,814
39½	200	56	526	72½	1,090	89	1,837
40	208	56½	539	73	1,111	89½	1,860
40½	216	57	552	73½	1,131	90	1,883
41	224	57½	565	74	1,153	90½	1,906
41½	232	58	579	74½	1,175	91	1,929
42	240	58½	593	75	1,197	91½	1,952
						92	1,975

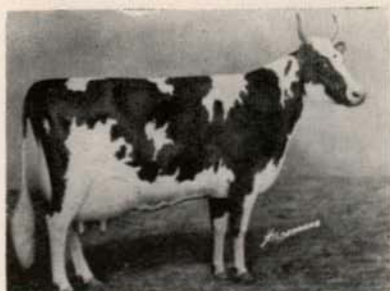
over the windows in hot weather will keep the barn cool and dark and keep the flies away.

Exercise pens should be on the south side of the barn where they will be warm and sunny. In the colder months calves need sunshine as well as exercise.

Always handle dairy cattle gently and treat them kindly. Cattle are easier to handle and milk when they receive good treatment.

Teach calves to lead when they are small and easier to handle. The best way to train a calf to lead is to tie it up several days with a good halter to accustom it to the halter. This will teach the calf that it cannot get away. When the calf has learned the meaning of the halter, it will learn to lead quickly. If it is taken to water or feed a few times, it will associate leading with the reward. The best type of halter for breaking calves to lead is an adjustable rope halter that pulls tightly under the jaw. One is shown in the lesson on making a rope halter. This type of halter gives the leader better control over the animal. Brushing and petting the calf during this time will help make the job of teaching it to lead much easier.

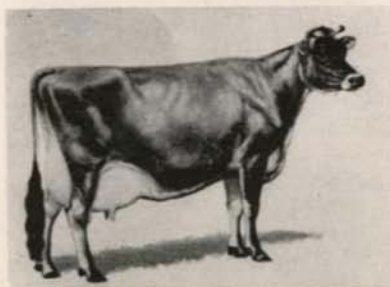
The condition and rate of growth should be watched closely at all times. If scales suitable for weighing cattle are available, weigh your calf frequently—at least once each month and record the weight in your record book. If it is not convenient to weigh the calf, a fairly good estimate can be obtained by measuring the animal's heart girth just behind the shoulders, and estimating the weight from Table 2 which was prepared by the U. S. Department of Agriculture, Bureau of Dairy Industry. Pull the tape-measure fairly tight, read the measurement, then refer to Table 2.



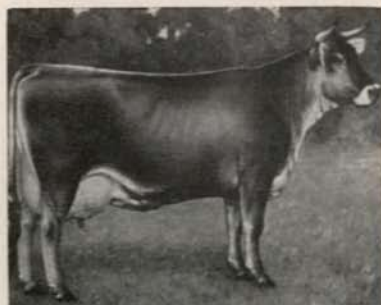
Ideal Ayrshire cow



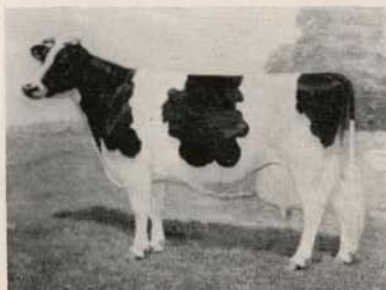
Ideal Guernsey cow



Ideal Jersey cow



Ideal Brown-Swiss cow



Ideal Holstein-Friesian cow

Figure 3.—Pictures showing the true type of the different breeds of Dairy Cattle.

DAIRY COW SCORE CARD

Ideals of type and breed characteristics must be considered in the application of the terminology of this score card.

Based on Order of Observation	Per- fect Score	Cow A	Offi- cial Score	Cow B
<p>1. GENERAL APPEARANCE</p> <p>Attractive individuality, revealing vigor, femininity with a harmonious blending and correlation of parts. Impressive style and attractive carriage with a graceful walk.</p> <p>Breed Characteristics (see below)</p> <p>Head—medium in length, clean-cut; broad muzzle with large open nostrils; lean, strong jaw; full, bright eyes; forehead broad between the eyes and moderately dished; bridge of nose straight; ears medium size and alertly carried. 12 points</p> <p>Shoulder Blades set smoothly against chest wall and withers, forming neat junction with the body.</p> <p>Back strong and appearing straight with vertebrae well defined.</p> <p>Loin broad, strong and nearly level.</p> <p>Rump long, wide; top-line level from loin to and including tail head.</p> <p>Hips wide, approximately level laterally with back, free from excess tissue.</p> <p>Thurs wide apart.</p> <p>Pin Bones wide apart and slightly lower than hips, well defined.</p> <p>Tail Head slightly above and neatly set between pin bones.</p> <p>Tail long and tapering with nicely balanced switch. 10 points</p> <p>Legs wide apart, squarely set, clean-cut and strong with fore legs straight.</p> <p>Hind Legs nearly perpendicular from hock to pastern. When viewed from behind, legs wide apart and nearly straight. Bone, flat and flinty, tendons well defined. Pasterns, of medium length, strong and springy. Hocks cleanly moulded.</p> <p>Feet short and well rounded, with deep heel and level sole. 8 points</p>	30			
<p>2. DAIRY CHARACTER</p> <p>Animation, angularity, general openness, and freedom from excess tissue, giving due regard to period of lactation.</p> <p>Neck long and lean, blending smoothly into shoulders and brisket; clean-cut throat and dewlap.</p> <p>Withers well defined and wedge-shaped with the dorsal processes of the vertebrae rising slightly above the shoulder blades.</p> <p>Ribs well apart. Rib bone wide, flat and long.</p> <p>Flank deep, arched and refined.</p> <p>Thighs incurving to flat from the side; wide apart when viewed from the rear, providing sufficient room for the udder and its attachment.</p> <p>Skin of medium thickness, loose and pliable. Hair fine. 20 points</p>	30			
<p>3. BODY CAPACITY</p> <p>Relatively large in proportion to size of animals, providing ample digestive capacity, strength and vigor.</p> <p>Barrel deep, strongly supported, ribs wide apart and well sprung; dept and width tending to increase toward rear of barrel. 12 points</p> <p>Heart Girth large, resulting from long well sprung foreribs, wide chest floor between front legs, and fullness at the point of elbow. 8 points</p>	20			
<p>4. MAMMARY SYSTEM</p> <p>A capacious, strongly attached, well carried udder of good quality, indicating heavy production and a long period of usefulness.</p> <p>Udder—Capacity and Shape, long, wide and of moderate depth. Extending well forward, strongly attached, reasonably level floor. Rear attachment, high and wide. Quarters evenly balanced and symmetrical.</p> <p>Texture soft, pliable and elastic. Well collapsed after milking.</p> <p>Teats uniform, of convenient length and size, cylindrical in shape, free from obstructions, well apart and squarely point of elbow. 25 points</p> <p>Mammary Veins long, tortuous, prominent and branching, with numerous large wells. Veins on udder numerous and clearly defined. 5 points</p>	20			
	100			

Judging Dairy Cattle

One of the most valuable lessons you can learn in your dairy club work is judging dairy cattle. You will need to recognize good-quality dairy cattle if you are to succeed in developing a good dairy herd. High-quality cows and their offspring must be kept in the herd; low-quality cows must be culled out.

The first step in learning to judge dairy cattle is to study the true type pictures or models prepared by the dairy breed associations. These pictures are shown in Figure 3 on Page 11. The true type in each breed has general body characteristics that are the same as the ideal dairy type (shown in Figure 4). Studying the ideal dairy type will help you learn to judge cows of any breed. You will be able to see the same characteristic in each breed which show high production, beauty of form and long life. The breed pictures show you the main differences in breed type, such as, shape of body, head character, and size. Study the characteristics of each breed given in the following paragraphs along with the true type pictures.

Special Characteristics of Dairy Breeds

AYRSHIRE CHARACTERISTICS

COLOR—Red of any shade, mahogany, brown or these with white, or white, each color clearly defined. Distinctive red and white markings preferable; black or brindle marking strongly objectionable.

SIZE—A mature cow in milk should weigh about 1150 lbs.

HORNS—Inclining upward, small at base, refined, medium length and tapering toward tips.

BROWN SWISS CHARACTERISTICS

Strong and vigorous. Size and ruggedness with quality desired. Extreme refinement undesirable.

COLOR—A shade of brown varying from a silver to a dark brown. Hair inside ears is a lighter color than body. Nose and tongue black, with a light colored band around nose. Color markings which bar registry are: white switch, white on sides, top, head or neck and legs above knees or hocks. White on belly or lower legs objectionable.

SIZE—A mature cow in milk should weigh about 1400 lbs.

HORNS—Inclining forward and slightly up. Moderately small at base, medium length, tapering toward black tips.

GUERNSEY CHARACTERISTICS

COLOR—A shade of fawn with white markings clearly defined, black or brindle markings objectionable. Skin should show a golden yellow pigmentation. When other points are equal, a clear or buff muzzle will be favored over a smoky or black muzzle.

SIZE—A mature cow in milk should weigh about 1100 lbs.

HORNS—Inclining forward, small and yellow at base, refined, medium in length and tapering toward tips.

HOLSTEIN CHARACTERISTICS

COLOR—Black and white markings clearly defined. Color markings which bar registry are solid black, solid white, black in switch, black belly, black

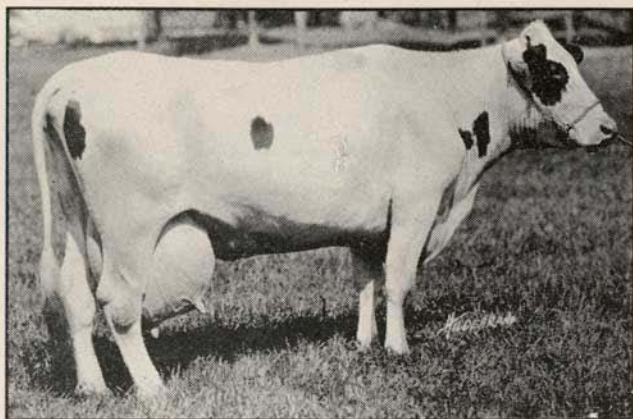


Figure 5—A Low-scoring cow, *Courtesy of the Holstein-Friesian Association of America.*

cow because she carries more flesh and is thick in the thighs and neck. We would score her down some on dairy character.

This cow would score down on body capacity because her body does not appear to be as deep or as wide as the ideal cow's body. Her chest is deep enough but appears to be narrow between the front legs.

Her udder is large but would score low on shape and weak front and rear attachment. Her teats appear to be small and do not hang straight down as they should. We would score her low on mammary system.

Practice scoring one or more cows at your club meetings with your leader or county extension agent acting as instructor. It is best to stand 20 to 30 feet away from the cow and take a side view first. You can see her general appearance, dairy character, and mammary system from this position. When you are ready to look for her width of chest and look at her head, walk around in front. To see her width of body and rear attachment of udder walk around behind her. You can best judge all of these parts from a distance.

You will need to walk up to her to determine the quality of her udder and the quality of her hide and hair. Most experienced judges like to watch cattle walk to get a better idea of their style, back, feet, and legs. If you wish to give numerical scores to the different points on the score card, this guide will help you. It is used in official classification work. "Excellent" cows score 90 points or more; "Very good" cows score 85 to 90 points; "Good Plus" cows score 80 to 85 points; "Good" cows score 75 to 80 points; "Fair" cows score 70 to 75 points; and "Poor" cows score less than 70 points. The average cow in most of the dairy breeds scores about 82 points. If a cow is only average in body capacity for example, she would score 16 points out of the 20 points (20 by 82 percent equals 16)

allowed for a cow with an ideal body. Scores for each part of the cow are arrived at in a similar manner. The total score is found by adding the scores for all of the parts.

Comparative Judging

If you are judging a group of two or more cows, compare each cow with the ideal type as in scoring. Place the one "first" which most nearly equals the ideal type cow in all points on the score card. Compare each of the other cows with the first place cow and the other cows in the group. Place the cow second that most nearly equals the first place cow in points. Place the other cows third, fourth, and on down in the same way.

A placing card similar to the following is valuable to you in learning to compare cows with each other in a systematic way.

DAIRY CATTLE PLACING CARD

University of Idaho — Department of Dairy Husbandry

Class..... Date.....

		1st	2nd	3rd	4th	Gr.
General Appearance	(30 pts.)					
Dairy Character	(20 pts.)					
Body Capacity	(20 pts.)					
Mammary System	(30 pts.)					

Placing 1st..... 2nd..... 3rd..... 4th.....

Name

We generally use four animals in classes for practice-judging and in judging contests. You first place the cows 1st, 2nd, 3rd, and 4th, according to their general appearance. Then you place them according to dairy character. Similarly, you place the cows on body capacity and mammary system. If you place a cow first in all four divisions, you will naturally put her first in the final placing. The same cow, however, might be placed last if you found her to have a serious defect such as a very poor mammary system. Before making your final placing, check all cows for defects and disqualifications as listed on Page 17. A serious defect would drop a cow down in the class or disqualify her entirely. A good judge learns to balance all of the points against each other to arrive at a logical decision.

Evaluation of Defects

In a show ring, disqualification means that the animal is not eligible to win a prize. Any disqualified animal is not eligible to

be shown in the group classes. In slight to serious discrimination, the degree of seriousness shall be determined by the judge.

EYES

1. Total blindness: Disqualification.
2. Blindness in one eye: Slight discrimination.

WRY FACE

Serious discrimination.

PARROT JAW

Slight to serious discrimination.

SHOULDERS

Winged: Slight to serious discrimination.

CAPPED HIP

Slight discrimination.

TAIL SETTING

Wry tail or other abnormal tail settings: Slight to serious discrimination.

LEGS AND FEET

1. Lameness — apparently permanent and interfering with normal function: Disqualification. —apparently temporary and not affecting normal function: Slight discrimination.
2. Bucked Knees, blemished hocks, crooked hind legs, weak pasterns: Serious discrimination.
3. Evidence of arthritis, crampy hind leg: Serious discrimination.
4. Enlarged Knees: Slight discrimination.

ABSENCE OF HORNS

No discrimination.

LACK OF SIZE

Slight to serious discrimination.

UDDER

1. One or more blind quarters: Disqualification.
2. Abnormal milk (bloody, clotted, watery): Possibly disqualification. A slight to serious defect.
3. Udder definitely broken away in attachment: Serious discrimination.
4. A weak udder attachment: Slight to serious discrimination.
5. One or more light quarters, hard spots in udder, side leak or obstruction in teat (spider): Slight to serious discrimination.

DRY COWS

In case of cows of apparently equal merit: Give preference to cows in milk.

OVERCONDITIONED

Serious discrimination.

TEMPORARY OR MINOR INJURIES

Blemishes or injuries of a temporary character not affecting animal's usefulness: Slight discrimination.

EVIDENCE OF SHARP PRACTICE

1. Animals showing signs of having been operated upon or tampered with for the purpose of concealing faults in conformation, or with intent to deceive relative to the animal's soundness: Disqualification.
2. Heifer calves showing evidence of having been milked, in an attempt to deceive regarding natural form of udder: Serious discrimination.

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Giving Reasons

A good judge can explain clearly to others what he saw that enabled him to decide which cow was best. Reasons are more convincing if you compare one animal with another to show why she is superior. Experienced judges use a method that we can illustrate in this way:

"I placed this class of dairy cows 2, 3, 1, 4. I place Number 2 first because she has the best general appearance in the class. She is larger, her back is straighter and her rump is more nearly level than any of the other cows. I placed number 2 over number 3 because she is larger, has a straighter back and a nicer head and neck. She shows more dairy character than number 3 because she is more angular throughout and has sharper withers and a thinner neck. Both cows have good bodies and are about equal in mammary system."

"I place number 3 over number 1 because she has a deeper, wider body and because she has a more evenly balanced udder which has stronger attachment in both front and rear."

"I placed number 1 over number 4 because she is a larger cow and has a larger, more evenly balanced udder than number 4. Number 4 has a very light left rear quarter."

Judging Young Dairy Stock

We use the same score card for judging calves and yearling heifers that we use for judging cows.

Place the most emphasis on general appearance in judging heifers. They should show plenty of size for their age and good breed type and character. They should have straight backs, reasonably level rumps and straight, strong legs and feet.

Body capacity and heart girth is as important in heifers as it is in cows. Heifers will not look as deep as cows, but they should show good depth of flank and heart girth. They should have good width of body and chest.

We place less emphasis on the mammary system of heifers than we do when judging cows because you cannot tell whether a heifer will develop a good udder. Most judges and dairy farmers prefer heifers that have large udder development and good sized teats that are evenly placed. Dairy heifers should show evidence of dairy character by having deep long bodies, reasonably sharp withers, long, thin necks and thin, open thighs.

Making a Rope Halter

A calf handles much better on a rope halter than on an ordinary strap halter such as you use for horses. A show halter has a slip chain under the chin.

Making a rope halter is a good assignment for one of the early club meetings. Each member should bring 12 to 14 feet of a $\frac{3}{8}$ - or $\frac{1}{2}$ -inch three-strand rope. Three splices are required. For this purpose a wooden peg made from a piece of hardwood, $\frac{1}{2}$ inch in diameter and 6 inches long and pointed at one end is useful. This peg is known as a marlin spike. A large spike nail may be used as a substitute.

The size and length of rope halters depends upon the size of the animal. Table 3 gives the diameter and lengths of the ropes ordinarily used and the length of the nose piece. In making the halter, the only permanent dimension to be made is the nose piece which

varies according to the size of the animal, as indicated in the table.

Table 3.—Dimensions for making rope halters.

	Size of rope (inches)	Length of rope (feet)	Length of nose piece (inches)
Sheep	$\frac{1}{4}$	10	10
Calf	$\frac{3}{8}$ to $\frac{1}{2}$	12 to 13	12
Medium cattle	$\frac{1}{2}$	13 to 15	13
Large cattle	$\frac{1}{2}$	14 to 15	18

First lay off 6 inches from the halter end for the eye splice. Then lay off from 10 to 18 inches, depending upon the size of the halter desired, from this point for the loop splice. The points are determined by tying a string around the rope (Figure 6a). The loop splice should be made first. This is made one complete twist beyond the second string. Two strands of the rope are raised by the marlin spike. One end of the rope is then passed through this opening (Figure 6-b). Pull the rope through to form the loop (Figure 6-c). Next lift two strands of the rope, pass the other end of the rope through and pull tightly to form the completed loop (Figure 6-d). The completed loop should appear as in Figure 6-e.

To make the eye splice, untwist the short end of the rope 5 inches and make a loop with the strands in the position as shown in Figure 6-f. In this position, the middle strand runs along the top of the rope while the two outside strands straddle the main rope. The marlin spike is then used to raise one of the strands and the middle strand passed under it diagonally to the right. The main rope is then turned to the left and the left strand is placed under the next strand of the main part of the rope. The rope is then brought back into the first position held, the third strand of the main part of the rope raised and the right hand strand passed under it from the lower side so that the end comes out where the middle strand entered. Each loose strand end is placed under one strand of the main rope, and the splice is completed.

When both loops are completed (Figure 6-g), the lead end of the rope is passed through the eye loop first, forming the part that goes over the neck, back of the ears. The end of the rope is then passed through the loop splice, forming the piece below the jaw.

The eye loop and lead rope are on the left side of the head in order that the holder may lead from the left side of the animal.

A crown knot may be put on the end of the lead rope to keep it from raveling. This is made by unraveling the end of the rope 6 inches. One strand is then passed between the other two to form a loop. Next pass strand 2 between the loop and strand 3. Strand 3 is passed over strand 2 and through the loop formed by strand 1. The strands are then pulled down tightly to form the crown knot and the ends braided into the rope (Figure 7).

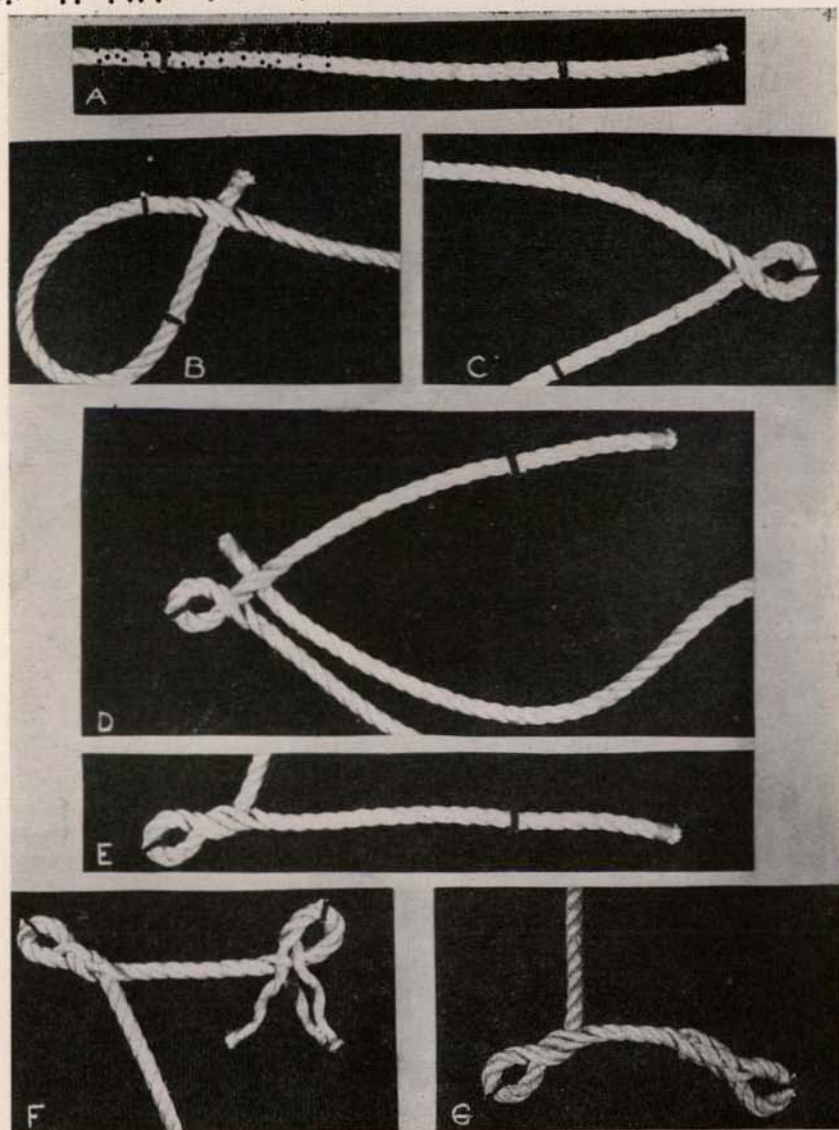


Figure 6.—Illustration of steps involved in making the eye and loop splices in a rope halter.

Fitting and Showing Dairy Heifers

Every club member should learn how to prepare his heifer for exhibition and to exhibit her. It demonstrates to him the importance of proper selection, feeding, training, conditioning, and handling his cattle to get best results. Awards at the fair are based on

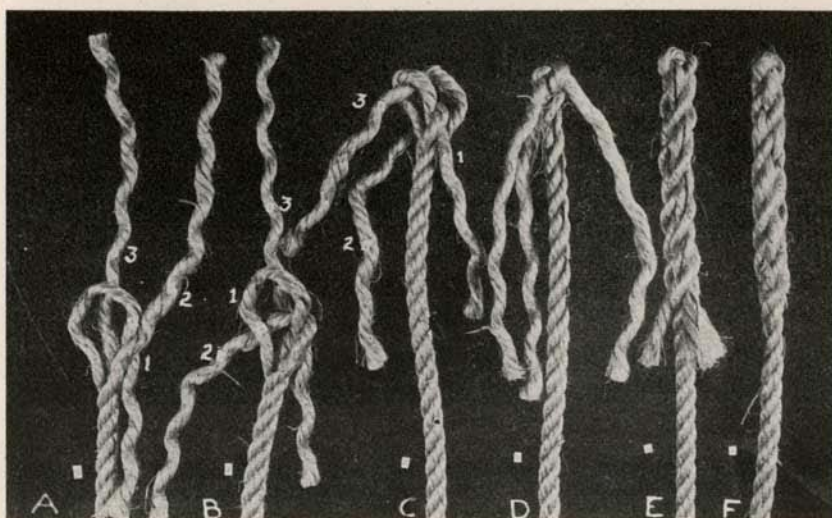


Figure 7.—Illustration of the steps in making the end and splice in a rope halter.

the job the club member has done and how near he reached perfection in this phase of his club work.

To be ready for show, the heifer should be sleek and clean; well trained to pose and look her best before the judge. There are several important steps to follow to properly fit a heifer.

Feeding for the Show

Proper feeding is the foundation of the whole fitting process. Dairy heifers should carry enough fat to look smooth and thrifty but not thick and beefy. This requires careful feeding for several months before the show as it takes a long time to get a growing animal in just the right condition. This is especially true of growing heifers that are thin at the start. It is just as important, however, to cut down the feed on animals that are too fat as it is to feed thin animals more liberally.

It is best to keep animals in the barn and feed them hay for at least 2 or 3 weeks, preferably longer, before show time to get them used to the same kind of feed and care they will get at the show. Enough grain should be fed to bring out a thrifty appearance, but not enough to cause the heifer to slow up on eating hay as this would make her look shallow-bodied. Complex grain mixtures are not necessary. Good home-grown grains such as oats and barley, equal parts by weight, are very satisfactory. Many showmen like to add 15 to 20 percent bran to the other grains. For extreme finish 3 to 5 percent linseed meal is sometimes added to the mixture during the last month, but is not necessary. The most important thing is to feed the correct amount of feed.

Washing, Blanketing, and Grooming

The heifer should be washed and blanketed at least 3 or 4 weeks before the show so she will be clean and shed the old hair which has a dry, dead appearance. It is a common practice among showmen to wash their cattle at the beginning of the fitting process with a good tar or mild soap and lukewarm water on a warm day. All soap should be thoroughly rinsed out to prevent blistering the skin. Too frequent washing removes the natural oil from the hair and leaves it harsh and dry. After the heifer is thoroughly washed, it is best to blanket her and keep her in a clean, well-bedded stall to keep her from getting dirty. Usually a burlap or canvas blanket is enough but if the hair sheds slowly it may be necessary to put a cotton blanket under the regular one to sweat the old hair out. Daily grooming with a medium to soft brush will work the old hair



Figure 8.—Showing calf with fitted blanket and placing of straps.

out and cause the natural oil of the skin to make the hair soft and glossy. Flip the dirt and loose hair out with the brush. Do not rub with the brush. Rubbing with the hands in the direction the hair lies naturally will add to its luster. Do not use oil or grease on dairy cattle.

Manure stains can usually be removed by washing with a chlorine-type bleaching agent. It sometimes takes several washings and if the stain has been there a long time, it may not come out entirely. A little powdered chalk or other harmless white powder will help cover the stain on white spots.

Training and Polishing Horns

The horns should be trained according to the style for the breed. All dairy cattle (except those that are dehorned or are naturally polled) should have small or medium-sized horns that incline forward and inward or up. Ayrshires have horns that turn up distinctly, Brown Swiss have horns that curve slightly upward, while Guernseys, Holsteins, and Jerseys have horns which curve forward and inward. Many exhibitors prefer to dehorn their cattle. This does not discredit them in any way in the show ring.

Horns can be pulled into shape by putting special horn trainers on them while they are growing or by drilling small holes through the ends of the horns and stretching small wire between the horns and tightening frequently. If they turn up too much, weights such as large iron taps or nuts fastened on the end of the horns will pull them down. Horns will curve faster if the shell is weakened slightly with a rasp along the inside of where it should curve.

After the horns are trained into shape, they should be polished. First rasp off the roughness in the shell with a half-rounded wood rasp and shape them up so they look small and tapering and even in length. Then scrape the rasp marks out with glass or carpenter's steel scraper. Sandpaper until smooth. Use fine sandpaper or emery cloth so the surface will be smooth enough to take a polish. The horn can be made as smooth as glass by rubbing hard and long with a paste made of olive oil and pumice stone and applying with a flannel cloth. Final touches should be put on the horns show day with silver cream or a good wax polish the same color as the horn. Plenty of rubbing with a flannel cloth will do the trick.

Trimming Feet

As soon as the heifer has settled down to her training routine, it is well to examine her feet and see that they look round and set squarely under her. If her toes are long, the under side, or sole, should be trimmed off, taking more at the toe to shorten the foot and make her stand squarely on it. Regular hoof nippers and hoof rasps are all that are needed on young animals. It is usually necessary to take a hammer and chisel for older cattle. Older animals have to be thrown or put in stocks so the feet can be held securely in position against a board. Be sure the feet are clean on show day.

Training

When the heifer has learned to lead well, it is time to start training her to stand and pose so she looks her very natural best. By standing her with her feet in different positions, you can tell which way she appears best. Most heifers appear best when the front feet are even with each other and when one hind foot is placed a few inches ahead of the other. Place the hind feet far enough under the heifer to make her back appear straight and strong. Teach her to assume this position by placing her in it several times each day. With practice she will learn the position you want her to take when you pull on the halter or make other signs to her. This will enable

the judge to see her at her best and will be valuable to you in the showmanship contest as well as in the show.

Clipping

The heads, ears, necks, and tails of calves and yearling heifers should be clipped a day or two before the show to make them look neat and trim. Most showmen do not clip the underline on heifers as it tends to make them look shallow-bodied. It is best not to clip the entire body unless the hair is very long and dry. An animal that is properly fed and conditioned without clipping always shows more finish and bloom, looks smoother, and is easier to keep in condition for several shows than an animal that has been clipped all over. If it is necessary to clip the calf all over, it should be done 6 weeks to 2 months before show day to give the hair a chance to grow out long enough to lay down and take on a glossy finish in the fitting process.

Run the clippers against the hair and clip as closely as possible. Start at the muzzle and clip back to the line drawn from the withers over the point of the shoulders down on the brisket between the

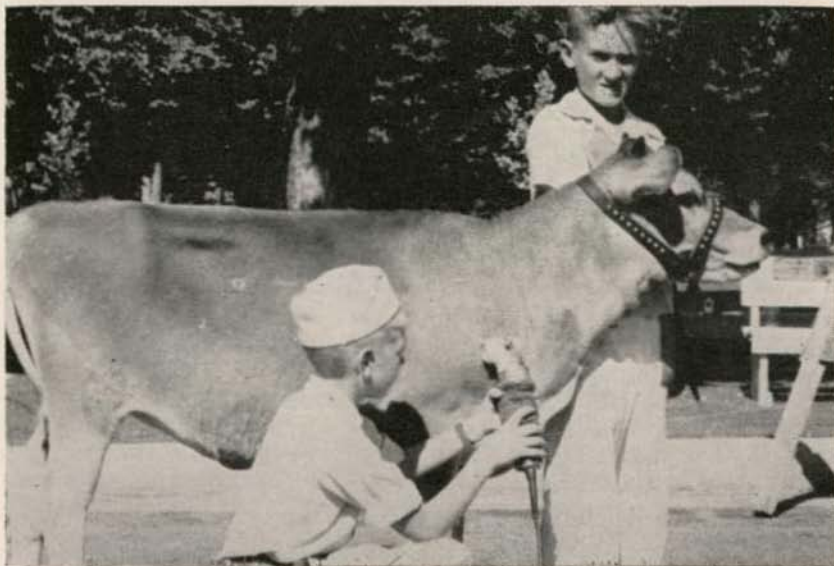


Figure 9.—Clipping the neck of the calf.

front legs. See Figure 9. Blend this line by turning the clippers down with the hair and then rubbing with fine sandpaper. Clip the tail from the first long hair in the switch up to the tail head, blending the tail setting into the top line by clipping high tail settings or leaving the hair on low ones. The udders and bellies on cows in milk should be clipped to make them look neat and trim and to show the milk veins.

Show Day

Dairy cattle should be taken to the fairgrounds a day or two before the show so they can rest and be ready for a "fill" on show day. Cattle that are a little hungry when they leave home stand the trip better and handle better at the show. The last feed before loading should be cut to two-thirds or one-half of the normal feeding. A light feeding the night before show day with only a small drink of water is best. She will eat and drink enough the next morning to show a good middle in the ring. Care should be taken not to let the heifer drink too much cold water, as it will cause the hair to stand on end or make her look bloated. Wash or sponge all stains and wash the switch of the tail thoroughly the day before the show. Rinse the switch in clean water with a little clothes bluing and a pinch of alum in it, braid tightly in several small braids starting the braids about $\frac{1}{2}$ inch from the tail and wrap in canvas or cloth to keep it from getting soiled.



Figure 10.—Group of 4-H club animals after being placed by the judge.

Final preparations the morning of the show should be to check to see that the heifer is clean from "tip to toe," properly clipped, filled on feed and water about an hour before going into the ring, all loose hair, dirt, and straw brushed off, switch of the tail unbraided and fluffed out, and the show halter ready. A well-groomed and well-trained dairy animal always looks best when it is led by a club member who is equally well-groomed and neatly dressed. Some club members like to wear white uniforms but clean school or work clothes are very satisfactory.

In the Ring

All club members should be ready to enter the ring when the superintendent calls the class. The best position is on the left side of the heifer and slightly in front of her. Most dairy showmen walk backwards, leading their animal with the left hand so they can watch their animal and watch for instructions from the judge. Good showmen always lead slowly forward and clockwise so their heifer is between them and the judge. Never make sharp turns or attempt to make the animal back up. Good showmen are always alert and attentive to what is going on in the ring and show every courtesy to their competitors and the judge. Show your heifer at her best from the time she leaves the stall until she gets back to it. Club members should enter the show ring in an orderly line and leave the ring in the same manner.

Club members who do their best learn many things, develop skills, and build character. Good sportsmanship—win, lose, or draw—makes many friends.

Reference Bulletins

Idaho Extension Bulletins

- No. 121 Idaho 4-H Club Leader's Manual
- No. 128 Selecting and Fattening 4-H Beef Calves
- No. 135 Suggestions for Profitable Dairying
- No. 136 Livestock Judging
- No. 145 Minerals for Livestock

Idaho Extension Circulars

- No. 58 Suggestions for Feeding Dairy Calves
- No. 68 Home-grown Grains and By-Product Feeds for Dairy Cattle
- No. 91 Prevention and Control of Calf Scours
- No. 98 Idaho Livestock Minerals Guide

U.S.D.A. Farmers Bulletins

- No. 1769 Dairy Cattle Judging

Other—Judging Manual—Holstein-Friesian Association of America.

The above publications may be secured from your County Extension Agent, or from the College of Agriculture, University of Idaho, Moscow, Idaho, or from the Agricultural Extension Division, State House, Boise, Idaho.