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Michigan State University Cooperative Extension Service  
4-H Club Bulletin  
Frank Gendron, Dairy  
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4-H CLUB BULLETIN 145-A

# THE CALF IN 4-H DAIRYING



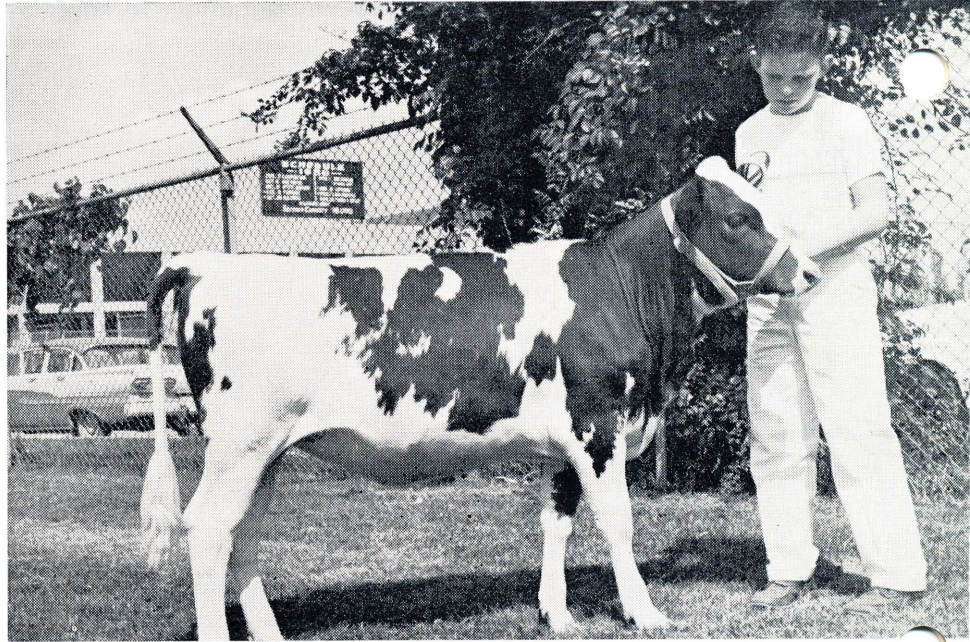
*Michigan State University*

*Cooperative Extension Service*

*East Lansing*



# The Calf in



*By Frank Gendron*  
Dairy Extension Fieldman  
Michigan State University

*the individual calf . . .*

# 4-H Dairying



*... leads to the herd*

**Y**OUR 4-H DAIRY CALF project is one of the most important in the field of dairying. For you see, *good* calves, well raised, become good cows. The calf you start with today may become the foundation animal of your future herd. You will learn how to select good calves and how to give them good care. But before you can become a good dairyman you must love cattle and enjoy working with them.

This will be your first in a series of new 4-H projects. As you gain experience and complete each of your projects, you will be expected to do more work for each of your future projects. You will be able to carry more than one dairy project as you continue in your 4-H dairy club work. Your 4-H dairy program set-up will be as follows:

## **Project I—THE CALF**

A 6 months record is recommended.

## **Project II—THE YEARLING HEIFER**

Preferably a continuation of Project I. A 12 months record is recommended.

## **Project III—TWO YEAR OLD COW**

A continuation of your previous dairy projects.

A 12 months record is recommended.

## **Project IV—DAIRY PRODUCTION**

A 12 months record is recommended.

## **Project V—DAIRY HERD MANAGEMENT**

You will be expected to complete one or more recommended practices each year with your dairy herd. Complete yearly records are recommended.

Your 4-H dairy project will be fun, but will also demand a lot of hard work. There will be problems to solve, such as selecting your first calf, controlling disease, and fitting and caring for your calf. You will have all the fun of exhibiting and competing with other dairy project members at shows and other activities. But, remember, as you start your dairy project that the things we value most are those things that are hardest to get.





When you need help, don't be afraid to ask. Your 4-H leader, your father, or a good dairyman will help you over the tough spots.

May the experience gained through your 4-H dairy project make you a better citizen and a better dairyman. Good luck!

### Purpose

The purpose of your new 4-H dairy calf project is to:

1. Give you helpful suggestions for selecting a good calf,
2. Give you suggestions on a sound and practical feeding and management program for raising your new calf, and
3. Outline for you some of the chores that must be done to raise your calf properly.

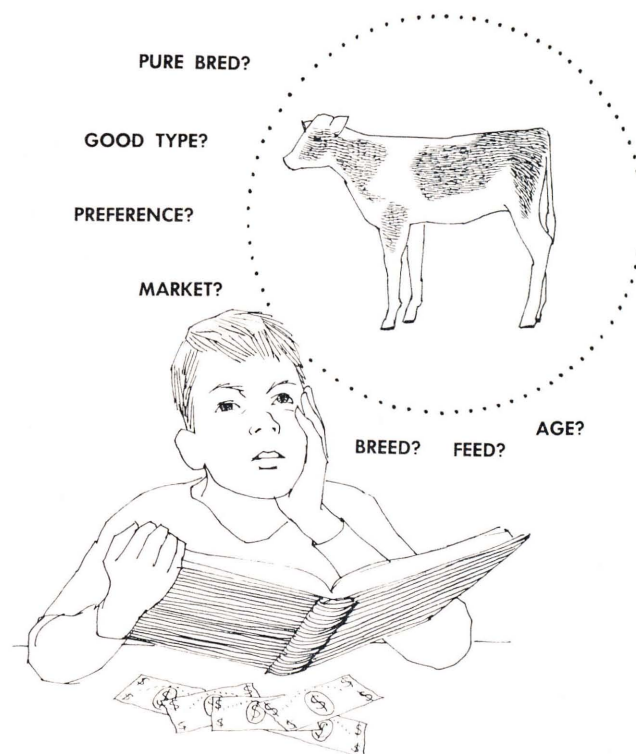
### What You Must Do

1. Own a heifer calf and feed and care for her for the entire project year.
2. Keep accurate and complete records on:
  - (a) amount and kind of feed used and its cost
  - (b) gain in body weight
  - (c) registration papers (if purebred) and health records
  - (d) other costs for equipment, etc.
3. Complete and turn in your 4-H Livestock Report to your leader when requested.
4. Exhibit your calf at a community, county, district, or state 4-H dairy show.

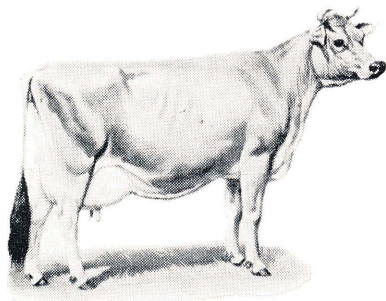
5. Take part in other dairy activities such as judging and demonstrations.

### Choosing a Calf

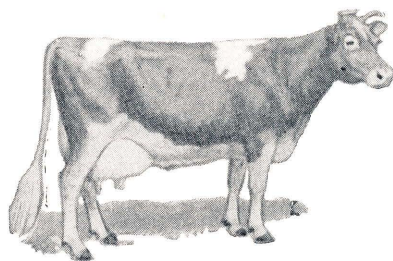
You will get much more out of your dairy project if you own your calf. Regardless of where the calf comes from, be sure you purchase your calf on a



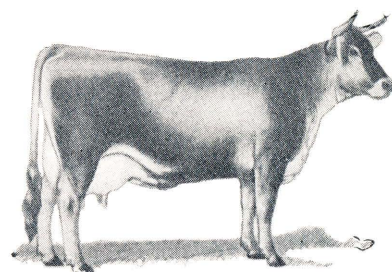




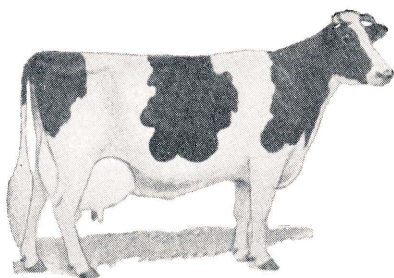
**JERSEY**



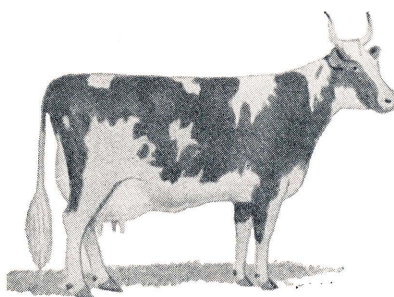
**GUERNSEY**



**BROWN SWISS**



**HOLSTEIN-FRIESIAN**



**AYRSHIRE**

strictly business basis with no "strings attached." If your parents lend you the money, be sure and repay them later.

To select your first calf is an important job. Get the help of a good dairyman. He may be your father, a 4-H leader, County Extension Agent, or a good dairy cattle breeder.

## The Breed

A good dairyman will be successful with any of the dairy breeds. The breed you choose is important, so think before you buy. Don't buy a certain breed just because you want to be different.

Unless you have a good reason for not doing so, you should:

1. Stay with the breed that is now on your home farm.
2. Choose a breed that is popular in your community.

3. Select a breed that will fit in your barn (stanchion size is important).

4. Select a breed that you like.

Remember, if you buy good animals in any breed, that breed will be a good one for you.

## Age, Type and Production

The calf's age at the time you select it is very important. Very young calves are more likely to contract disease or sickness and die. It is also more difficult to predict good type in young calves. Usually it is best to select a calf over four months old. Animals of this age are easier to handle and less of a risk.

A Junior calf, is one that is born on or after January 1 of the present year.

A Senior calf, is one that is born between July 1, and December 31 of the previous calendar year.

Older calves that have good type may place higher in a show than younger calves of good type. Try to select a Junior calf that was born in January or February and a Senior calf that was born in July or August.



Remember—it is better to select a younger calf of outstanding type than to select an older calf of average type.

While type is important, the wise 4-H member will select his calf for production too. The premium money you may win is a poor reason for selecting a calf. Your most important returns will come later when your calf is old enough to produce milk. Try to select a good type calf that has relatives with good production records. If you know something about her family, this will help you predict what kind of cow she will be.

As we stated before, it is hard to tell what a young calf will look like or produce when it grows up. Look at its dam (mother) and its sisters. Is the dam a good producer? Is she of good type? Is she from a good cow family? Are the daughters of the sire (father) good producers and of good type? Are they the type of cows you want your calf to grow up to be? Select a calf whose dam and relatives have good production records and type.

Look for an alert heifer with good length of body. She should be clean cut about the neck, thin over the withers, with a straight back and wide, strong loins. The rump should be level and square. The chest should be wide and the ribs wide, open and deep. The teats should be spaced widely, as viewed from the side. The rear legs should be straight and squarely set under the body. Avoid calves with coarse, open, flat-topped shoulders. A calf with a sagging low back will never place high. One with a drooping rump and low-set pin bones will never be a good type cow. The leggy, short, round-ribbed, shallow bodied animal is very undesirable.

### Purebred or Grade?

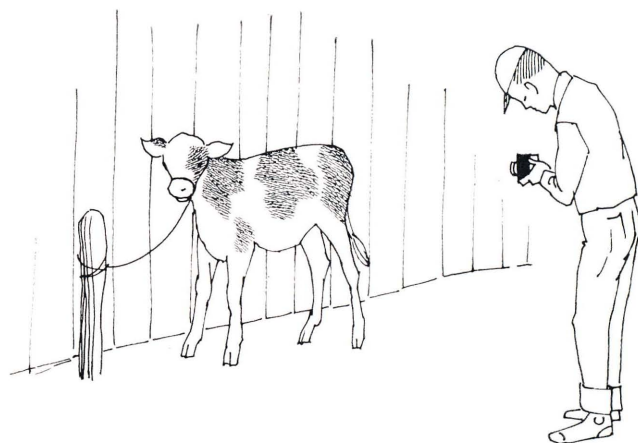
This will be one of the first questions for you to decide. A registered calf can be of great value to you as your herd grows. The difference in cost between a registered or grade calf is not great; but, don't select a calf just because it has a registration certificate. Papers will not assure you that your calf will be the kind of cow you want. They will not guarantee good production, or good type. It will be better to have a good grade than a poor registered calf. Select for the type of dairy cows you want in your future herd.

Grade dairy heifers may be exhibited and shown at most county 4-H shows.

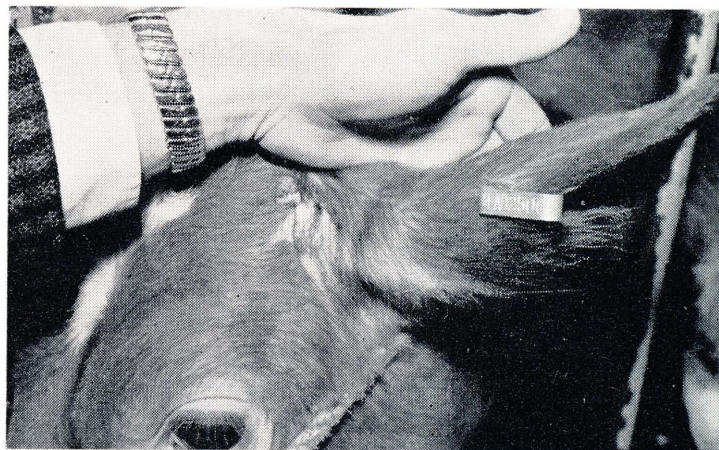
Registered calves (purebred) are required for exhibition at county and state breed association dairy shows and at the State 4-H Shows.

### Registration and Transfer

It is very important that one of the first things you do is to register or transfer your new purebred calf to your name. Be sure that color markings or the tattoo on the registry certificates are correct.



To register your animal, you may use a picture of both sides of your calf or color marking sketches for Ayrshire, Guernsey, and the Holstein breeds. The solid color breeds, such as the Jersey and Brown Swiss require a tattoo for permanent identification.



Registration tag (upper) and tattoo (lower) on calf's ear.



When you receive your registry certificates or transfer, see that the animal is recorded in your name. If you wait to register or transfer your calf, it may cost you more money.

To be eligible for exhibit at the State 4-H Show and many other shows, it must be registered in your name before July 1 of the year of the show. Remember, it may take a month or more to receive your registration papers back from your breed association.

## Junior Membership in Breed Associations

If you own a registered calf, check with your breed association for junior membership. There are many advantages in belonging to a breed association.

## Where to Buy

If a calf on the home farm is of good stock, you will be wise to start with such a calf. There will be less danger of bringing disease into your herd. You will also know the production records and type of dam and relatives better.

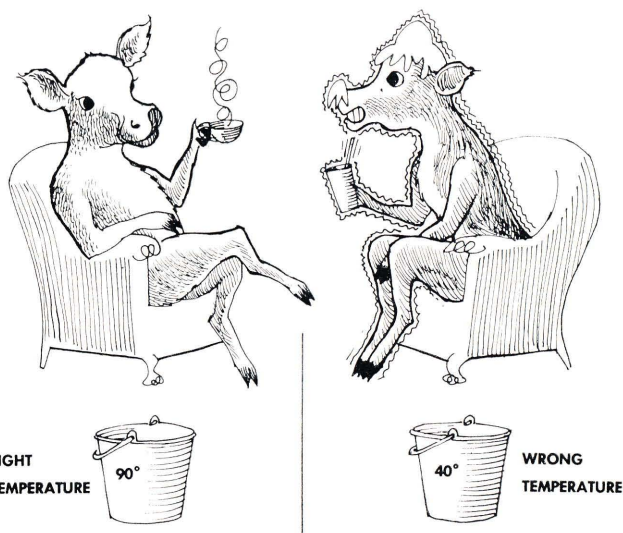
When you buy a calf from outside your farm herd, be sure the seller is reliable. Buy from a good dairyman you know, if possible. Good calves can generally be found in your community. Keep purchased calves in a pen away from the rest of your dairy cattle for 30 days to observe closely for any signs of illness or disease. This will help prevent the spread of any disease your calf may have.

## Health

Your calf should be from a healthy herd free from brucellosis (Bang's disease), tuberculosis (TB), or other diseases. Your calf should be vaccinated for Bang's disease. If this has not been done when you



Vaccination—a "must" to protect your calf.



Be sure to warm colostrum before feeding.

buy your calf, have it vaccinated between four and nine months of age. Calves are vaccinated to help protect them from "catching" Bang's disease. When a cow or heifer has Bang's disease, they may not be able to have a calf and will need to be slaughtered (State Law). When people drink "raw" milk (not pasteurized) from cows with this disease they may become sick. All milk sold in cities and towns is pasteurized and safe to drink.

Some milk consumed on the farm is not pasteurized and may not be safe for you or your family to drink. Protect yourself and your animals.

## Feeding Your Calf

Selecting a calf from your home herd gives you the advantage of taking care of it from the start. The calf needs some special care at the time it is born. Check with your 4-H leader or County Extension Agent for complete information on how to feed your dairy calf. Following are some recommended feeding practices that you should pay special attention to.

### First Milk

The first milk, called colostrum, is yellow, thick and sticky. Colostrum cannot be sold, but it is very important to the new born calf. It is full of vitamins, proteins, and other substances (nutrients) that are important to growth and help to protect the new calf from disease and infection. It is a good practice to leave the calf in the pen with the cow for two or three days. If this is done, wash the cow's udder and teats thoroughly with a mild chlorine solution before



1.



2.



3.



#### TEACHING CALF TO DRINK:

1. Weighing the milk. 2. Using a nipple pail. 3. Using the open pail, back the calf into a corner, straddle its neck, put 2 fingers into its mouth, and push its head into the pail.

the calf begins to nurse. Dirt on the utter carries germs that may cause the calf to become sick, so wash the udder often as long as the calf is nursing. Be sure to keep the pen clean and well bedded.

It is a good plan to milk the mother at least twice a day while the calf is nursing. Milking helps prevent congestion in the udder and will detect a quarter the calf may have missed. Do not milk the cow dry for the first two or three days.

Extra colostrum may be frozen and fed as long as it lasts. The extra colostrum will be good for the calf. Be sure to warm it carefully to 95 to 100°F.—about body temperature—before feeding. Use clean containers. Be sure to wash feeding pails very carefully after each feeding. Dirty pails allow bacteria ("germs") to grow and may cause your calf to become sick and die.

### Teaching the Calf to Drink

After two or three days you will want to remove the calf from the cow. This is best done at night so the calf will be hungry the next morning when you try to teach it to drink. Calves may be fed from open pails, nipple pails or calf feeders.

Put some fresh warm milk from the calf's mother in a *clean* pail. Back the calf into a corner. Straddle its neck and put two fingers into the calf's mouth. Now gently push the calf's head into the pail of milk. Spread your fingers so the milk will go into the calf's mouth as she sucks. After several swallows by the calf, slowly remove your fingers. Repeat as often as necessary. Continue to feed the mother's milk until the milk is good enough for household use. This will generally be 5 days or until the milk is colostrum-free.

*Regardless of the method used, be sure all containers are kept very clean to prevent disease.*

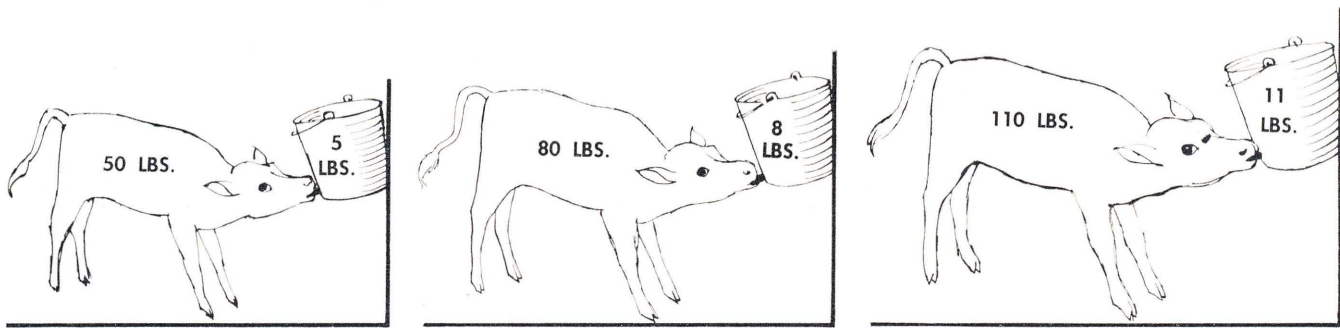
### Weighing the Milk

Weigh or measure the feed accurately to prevent over-feeding and also keep an accurate record of the amount you feed your calf.

### How Much to Feed

A good rule to follow is to feed one pound of milk *daily* for each eight to ten pounds the calf weighs. A calf that weighs 90 pounds should receive





Feed one pound of milk daily for each eight to ten pounds of calf weight.

about  $4\frac{1}{2}$  pounds of milk in the morning and about the same amount at night.

Feed at the same time each day. Over-feeding will cause scours. If this happens, cut the amount of milk in half immediately and then bring back gradually.

*Don't over-feed milk.* As the calf grows, not more than 16 pounds total milk should be fed per day.

## Whole Milk

It is important to feed your calf whole milk until she is at least three weeks old. Always feed warm milk at a temperature of 90 to 100°F. Whole milk will generally increase the cost of raising your calf, but four to five pounds of whole milk each day may keep your calf looking better. Calves on whole milk generally have a glossier hair coat.

## Skim Milk

Skim milk, if available, may gradually replace the whole milk in about three weeks. Skim milk or dried skim milk may be fed up to six months. Mix thoroughly one pound of dry skim milk with nine pounds of warm water. Then feed this mixture in the same way you would feed fresh skim milk.

## Milk Replacers

You can buy many good milk replacers at feed stores and elevators. Most of these contain large amounts of milk solids, and some vitamins, minerals and antibiotics. Milk replacers may be cheap to feed when you can buy 25 pounds of replacer for the value of 100 pounds of 3.5 percent milk. Follow the directions on the bag when feeding milk replacers.

## Let's Do A Little Pencil Work—

It will be easy for you to find out how much you should pay for milk replacers if you complete the table below.

Ask you dad to help you by giving you the percent butterfat and the price you got for your milk last month. Put those figures in the table and multiply it out to find out how much you could pay for 50 pounds of milk replacer to feed to your calf.

Pounds Milk	Percent Butter-Fat	Price Per 100 lbs. Milk	Price you could pay for 50 lbs. replacer
100	3.5	\$4.00	\$8.00
100	4.0	4.50	9.00
100	—	—	—

## What Is A Concentrate?

Concentrates are feeds that are low in fiber and high in energy. Some examples—grain (corn, oats, wheat, etc.), linseed meal, soybean oil meal and other high grade by-products from plants and animals. Soybean oil meal and linseed meal are very high in proteins. They are called protein supplements, and used to raise the level of this important food nutrient in dairy feed.

## Grain or Starters

Teach your calf to eat grain as soon as possible. Place a small amount in her mouth after each feeding of milk, or place a small amount in the feed box to encourage your calf to eat grain. About one-half pint or  $\frac{1}{4}$  pound of grain is all that a small calf will eat each day. Increase the amount gradually until your calf is eating about 2 pounds of grain at 3 months



of age and about 4 to 6 pounds of grain at 6 months of age (depending on the breed).

Good starters (calf meal or pellets) contain extra protein, vitamins, minerals, and antibiotics. When you feed a starter, you can reduce milk feeding at an earlier age.

### A Good Growing Ration (Feed Mixture)

Ground Corn .....	45 lbs.
Ground Oats .....	40 lbs.
Linseed or soybean oil meal .....	15 lbs.
<b>Total:</b> .....	<b>100 lbs.</b>
Trace mineral salt .....	1 lb.
Steamed bone meal .....	1 lb.

Table 1 includes a good program to follow in feeding your calf.

**Table 1.—Calf Feeding Program**

Age	Whole milk starter plan
Birth to 3 days .....	Fed colostrum or nursing dam.
4 days to 3 weeks ....	Whole milk—starter
3 weeks to 8 weeks ...	Whole milk—starter
8 weeks to 4 mos. ....	Starter
4 mos. to 6 mos. ....	Growing ration.

### What Is A Roughage?

A roughage is a feed high in fiber (bulk) and low in energy. Hay, corn and grass silage, straw, and corn fodder are considered roughages.

### Hay for Your Calf

Good quality leafy green alfalfa hay is best for your calf. It contains vitamins and minerals they need. Give your calf hay as early as she will begin to nibble at it. But don't offer too much at a time. Give fresh hay at least once a day. Roughages supply a cheap feed for your calf.

### Silage

If you plan on showing your calf before she reaches one year of age, don't feed her silage. Silage is bulky and contains a large amount of water and this limits the intake of good hay. Since the calf has a small stomach, it cannot handle large amounts of this roughage and still get all the energy it needs.

### Pasture

Pasture, like silage, contains a large amount of water. No calf should go on pasture under one year of age—particularly if you are to show her. A calf on succulent pasture will eat lots of feed, mostly water, and end up “pot-bellied” and lacking in skeletal growth.

### Water and Salt

Clean fresh water and trace mineral salt should be available to the calf at all times. Water is necessary for calves even when they are young and drink milk.

Trace mineral salts are fed to make sure your calf receives all the minerals it needs. Salt is needed by all animals for normal growth.

### After Six Months

When your heifer is 6 months old, she can handle a lot of hay and pasture. Two to four pounds of grain should be plenty to keep her growing if you use a growing ration, such as the one suggested to replace the calf starter ration in column 1. Many breeders prefer to eliminate the corn in the ration and substitute rolled oats, rolled barley, or some other small grain.

Don't overfeed your heifer. A fat dairy heifer is undesirable. Feed only enough grain to keep her in good growing condition.

### Keep a Record Of Your Calf's Growth

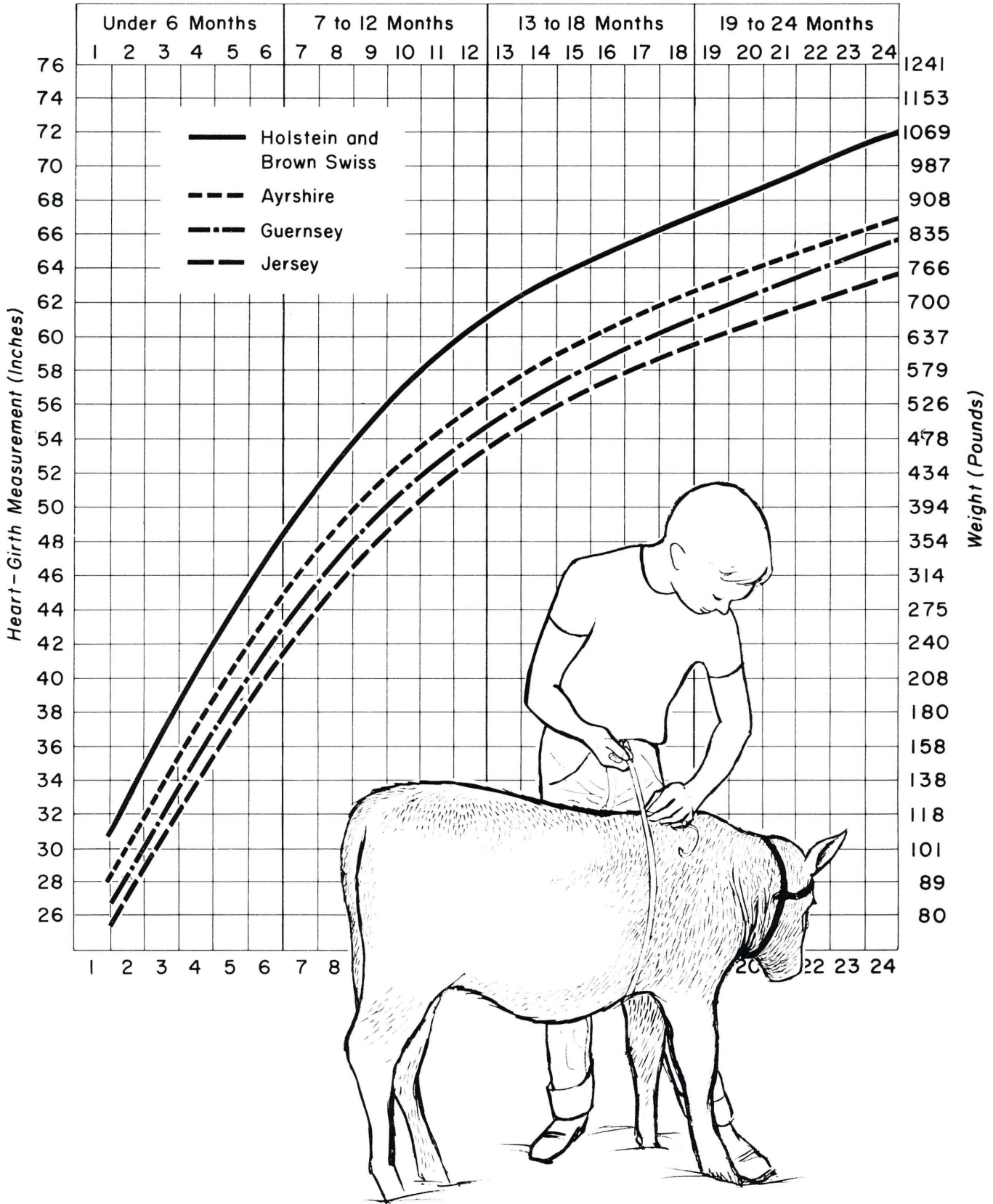
If you don't have scales for weighing, a weighing tape will give the weight quite accurately. Possibly you can get one free from feed companies or bull studs that use them for advertising.

To estimate weight, place tape around the animal's body at heart girth or directly in back of the front legs. Have the tape fit firmly but not tightly. Then read the weight directly from the tape for your estimated weight.

If a weighing tape is not available, you may use a tape measure or a string to determine the distance around the calf's heart girth. Then compare this measurement, or one made with a weighing tape, with the growth chart on the next page to see if your heifer is up to normal.



# Age in Months





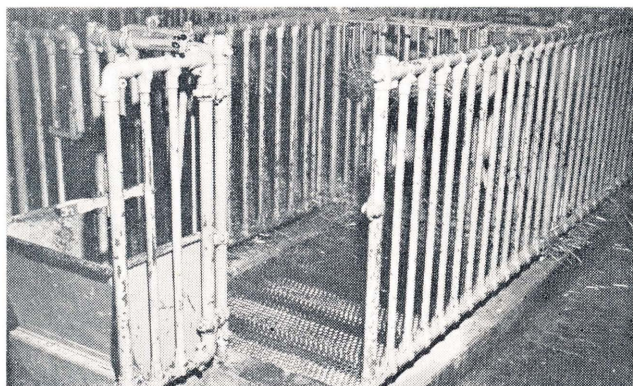
## CHORES TO DO

### IDENTIFICATION

Soon after buying your calf, take a side view picture as illustrated on page 6.

### Housing and Calf Health

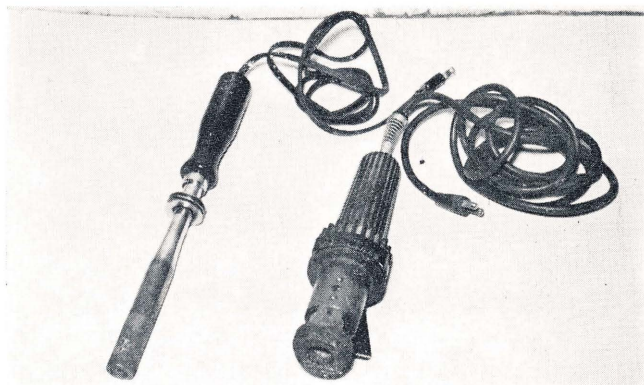
Keep your calf's pen clean, dry, draft-free, well lighted and well ventilated. When possible, keep your calf in a pen by herself. This helps to prevent the spread of disease from other calves. Also, young calves may suck each other and cause udder problems later on. Keep the calf in an individual pen until about a week after weaning.



A clean pen will safeguard calf's health.

### DEHORNING

Horns serve no useful purpose. They may be removed very easily with chemical or electric dehorning when your calf is young. Dehorning is a good safety measure. Ask your 4-H leader or father for help with this job.



Two kinds of electric dehorning.

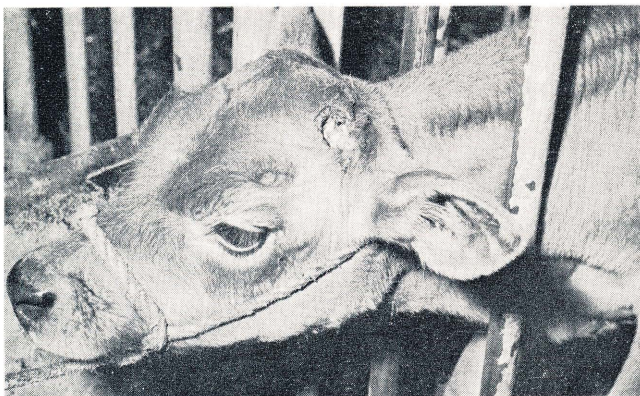
There are several types of electric dehorning; (1) without heat regulation and (2) with heat regulation. Make sure to leave the heat on long enough to burn a copper-colored ring all around the horn. Caustic potash and other commercial products also do a good job. If you use caustic potash, follow these steps: (1) Clip hair around horn button. (2) Scrape with sterile knife until the horn button is red. (3) Apply Vaseline around edges to keep caustic from burning other areas. (4) Apply a stick of caustic potash or dehorning compound until entire surface is in contact with it. Do not allow caustic to run down side of face.



Dehorning with caustic potash.



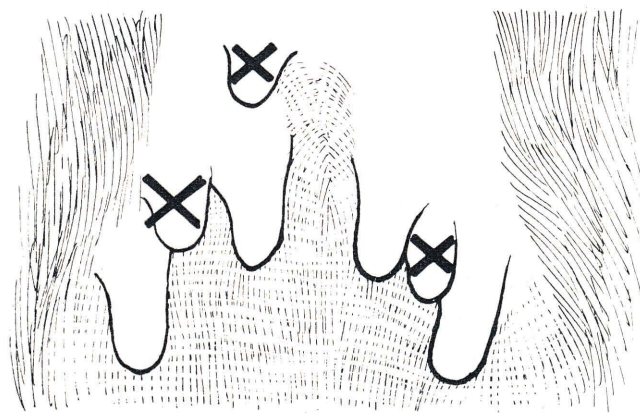
Regardless of method used, be sure to seek the assistance and advice of some adult.



Look Ma! No horns! (After electric dehorning.)

### EXTRA TEATS

Remove extra teats as soon as you are certain which teats are the extra ones. They may be removed



with a pair of sharp, disinfected scissors. After removal, the cuts should be painted with iodine. Ask the help of your 4-H leader, father or veterinarian.

### INTERNAL PARASITES

Internal parasites may be very harmful to your dairy calf. They are worms or other organisms that live inside the animal. Because they feed on the animal's tissues, they may greatly affect the rate of growth and the health of your calf. Check with your County Extension Agent for information on the newest recommended practices for control.

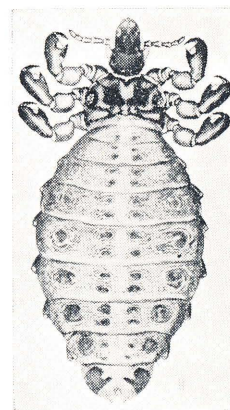
### RINGWORM

Scrub scabs with warm soapy water and stiff brush to open infected areas. After areas are clean,

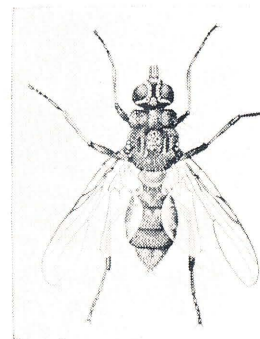
apply tincture of iodine or heavy oil daily until they disappear. Other treatments will also work. Disinfect stanchion and pen to prevent spread.

### INSECTS

**LICE**—Check your calf around the ears, neck, backbone, and tailhead for lice. If you find lice, dust the calf from head to tail with a good louse powder containing 1½ percent rotenone. Repeat every ten days to get the louse hatch.



**FLIES**—Clean, dry calf pens will help to control bothersome flies. Clean the pens at least once a week to keep flies from hatching in the manure. Check with your leader to find out the newest effective materials for killing flies.



### GRUBS

Dust with 2 percent rotenone over the back and rub gently into grub openings.



Comparison of grubs with the size of a dime.

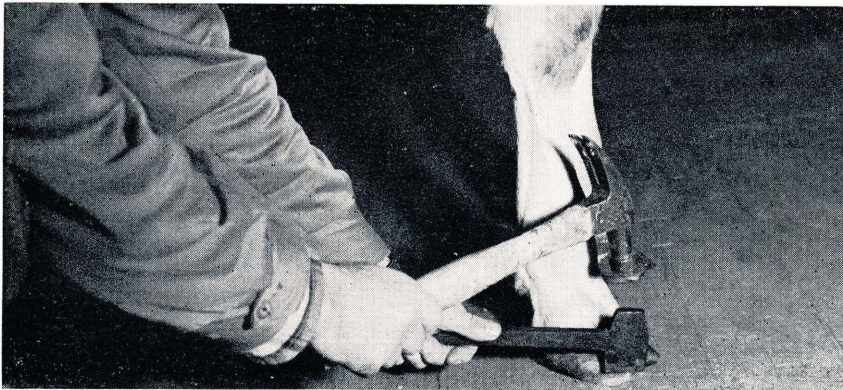


## GROOMING AND TRAINING

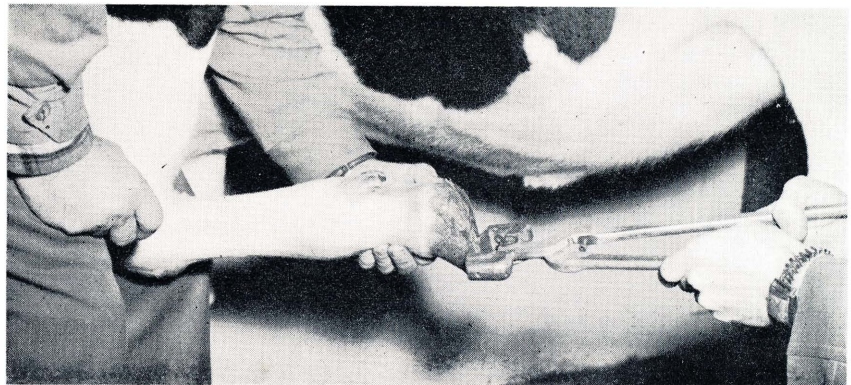
You will want to know about training your dairy calf so that she will look her best at the show. To be ready for the show, your animal must be properly trained. Start training her with a halter at least six weeks to two months before the show. Ten to 15 minutes a day is much better than too long a period.

Check with your leader for information on training, clipping, washing, trimming hooves, and other preparations in getting ready for the show.

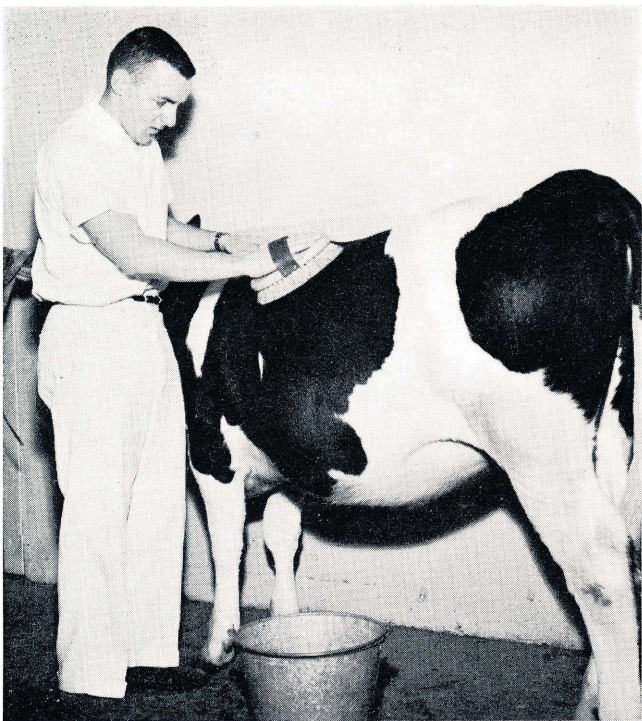
Animals show off to best advantage when clipped two to three days before showing. Clip the head, neck and tail.



Sometimes your calf's hoofs may grow long and need trimming. Start on the front hoof to get your heifer used to the activity. A chisel is a good tool to shape the hoof with. The correct job of trimming will help the heifer stand straighter.







There are four steps to good washing. (1) Soak the animal thoroughly with lukewarm water. (2) Apply soap and scrub thoroughly with a good brush. (3) Rinse with clean water and scrape off excess water. (4) Cover with a blanket until dry.



Teaching the calf to lead can be a rewarding experience and one that you will enjoy. Practice leading daily. Do not beat or abuse your calf. Patience and firmness will pay off. Train your animal to pose and walk correctly. Many short sessions are better than a few lengthy ones.



