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Ralph May, Assistant State Club Leader  
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# 4-H BEEF PROJECT

MICHIGAN STATE COLLEGE

EXTENSION SERVICE

EAST LANSING

# 4-H BEEF PROJECT

BY RALPH MAY\*

## PURPOSE OF 4-H BEEF CLUB

The 4-H beef project is planned to give young people living on farms experience in selecting, feeding, exhibiting and marketing beef cattle. This training will aid them materially as adults if they wish to produce either commercial or purebred cattle. Many of the present-day feeders and breeders developed their enthusiasm and interest in beef cattle as a result of 4-H beef club experience.

This bulletin contains suggestions to leaders and members for the conduct of successful 4-H beef projects.

## 4-H BEEF CLUB REQUIREMENTS

1. Any farm boy or girl who will be 10 years old or older and whose twenty-first birthday does not occur before July 1 of the year the animal is to be shown, is eligible for beef club membership.

2. Members of the feeding project must own one or more steers which they personally feed. The animal must also be fitted and shown by the owner. MEMBERS SHOULD CHECK WITH THEIR EXTENSION AGENT REGARDING THE NUMBER OF STEERS THEY MAY SHOW AND SELL AT STATE 4-H SHOWS IN ONE CALENDAR YEAR. CONDITIONS MAY CAUSE THIS NUMBER TO VARY FROM YEAR TO YEAR. Additional steers fed by members may be sold at county fair auctions or by private treaty or consignment to livestock dealers and packers.

3. Feed records should begin at the time of purchase of the calf and continue until the member disposes of the animal. For a September show and sale, reports must begin not later than March 1; for a December show, May 1.

4. The calf must be weighed at the beginning and again at the close of the feeding period. Monthly weights are desirable but not required.

5. Members who are absent from home for one month or more, except for sickness, or who enroll in an educational institution above

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high school grade are ineligible. Exception is made for members who wish to enroll at Michigan State College in a short course. Members enrolling in a short course for the FIRST TIME in October or November may exhibit at the Detroit Junior Livestock Show the following December.

6. Members may start a beef breeding project by obtaining a calf or yearling heifer. Only purebred heifers are eligible for state shows. Purebred heifers must be registered in the member's name. The member must keep at least a 4 months' feed and pasture record on breeding animals. Members are encouraged to keep records for the entire year.

7. Heifers are not eligible as 4-H beef fattening projects animals.

8. See your extension agent for additional rules concerning the various shows.

### BABY BEEF FEEDING PROJECT

Most beef calves fattened by 4-H club members are exhibited and sold either at early fall or early winter shows. An 8- to 12-month feeding period is required to put a choice or prime finish on beef calves. Thus obtaining and starting the calf on feed early in the year is extremely important. Both Michigan and Western-bred steer calves are available in largest numbers during October, November and December. Calves selected and started on feed during these months can be finished by show time the following year.

Most spring calves will weigh from 300 to 500 pounds when purchased in the late fall. The lightweight calves are desirable for the member planning to exhibit at the December shows. Members desiring to exhibit at August or September shows will want heavier calves weighing around 400 to 500 pounds at the time they are started on feed.

One objective of feeding a 4-H steer is to make a profit on the feeding operations. Members paying exorbitant prices for feeder calves run the risk of losing their profit the day they buy the calf; therefore, they should not invest too heavily in a calf for the purpose of trying to win a championship.

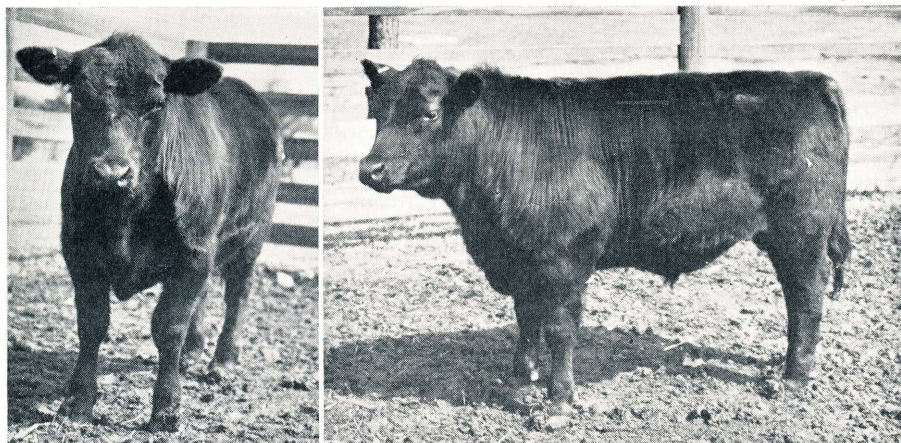
Calves started on feed during late winter or spring seldom are finished properly by show time. Calves lacking finish will not sell well, and this may mean loss instead of profit.

The big job is to get the calf well finished. Don't be afraid of

getting your calf too fat. There has seldom been a club calf shown in Michigan which carried too much fat, and a large percentage of the club calves sold at recent state shows are lacking somewhat in finish.

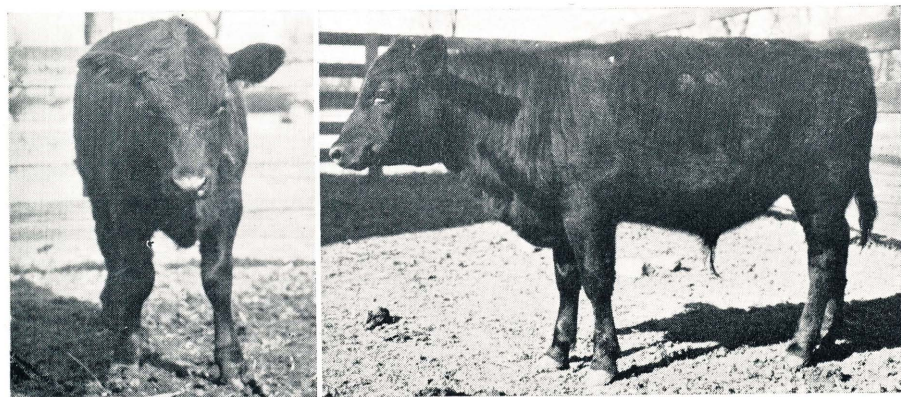
### TYPE TO SELECT

Selecting the proper type feeder calf is a difficult task for the beginner. Do not hesitate to seek assistance from a nearby feeder or breeder. Your extension agent can be of valuable help in assisting you in making this selection.



*Fig. 1A. Short legs, wide chest and strong feeder head.*

*Fig. 1B. Deep in heart and flank. Short blocky body, short neck and straight top line.*



*Fig. 1C. Narrow chest, long legs and narrow weak head.*

*Fig. 1D. Long body and neck, weak in the heart and high in the flank, light bone.*

A well bred choice feeder calf may appear thin, shaggy and unattractive at the time you make your selection, and yet the experienced cattlemen will recognize the fundamentals of type, character and breeding. On the other hand, cross-bred beef-dairy calves or inferior-type grade calves may be in high condition, showing much bloom and look attractive to the inexperienced member.

Study the accompanying pictures (Figs. 1A, 1B, 1C and 1D) to learn some of the differences between the desirable and poor type feeder calves.

Select a calf that has short, straight legs, a wide, deep, short body with a straight top line and wide deep heavy quarters.

Calves showing a wide deep chest and "bold" spring of foreribs are usually "good doers" in the feed lot.

A short, wide head with large, quiet eyes indicates good breeding and disposition. High-headed, nervous, wild-eyed, excitable calves seldom feed well.

Fleshing quality is extremely important and yet difficult to recognize in the feeder calf. A thin, loose, pliable, mellow hide indicates that the calf will probably take on a smooth, firm, even, covering when finished.

DO NOT select a calf that possesses many of the following characteristics: long legs, narrow chest and body, low back, sloping rump, extreme roughness and coarseness throughout, or a long shallow body. Also avoid stunted calves and calves that look "bully". Carelessness in castration often leaves a few steers that later develop masculinity and staginess which is objectionable in slaughter cattle. Masculine heads, extra heavy horns and bones, and thick, cresty necks are all indications of staginess. Over refinement in bone, head and body indicates a delicate and slow-feeding calf.

## FEEDING

There are many good rations for fattening beef calves, and appetites of calves vary. The following suggestions are to be used only as a guide. Your calf may not respond to a ration that another is doing exceptionally well on.

### STARTING THE CALF ON FEED

Start the calf by feeding about two pounds of COARSELY ground oats and corn per day. This grain ration may be increased by adding one-half pound every two or three days until the calf is on full feed. Feed the calf twice daily. Regulate the amount of the ration to what he will clean up within an hour after feeding. Remove the extra feed

from the grain box and use it for other livestock feeding. Stale, rancid or moldy feed will greatly decrease the calf's consumption. Allow the calf all the good quality alfalfa, clover or soybean hay he will consume. Free access to clean water is important.

### SUGGESTED RATIONS

Most 4-H club members will have an ample supply of home-grown corn or barley, oats and legume hay. Members will find it necessary to feed a protein supplement in order to maintain a good appetite, insure cheap gains, and to obtain a choice or prime finish on the beef calf. The protein requirement may be supplied by milk and legume roughage during the early feeding period. Calves not receiving milk will need protein supplement in the form of soybean oil meal, linseed oil meal or cottonseed meal. Cost will determine the one to feed. When the price is cheap, some commercial feeders use one-fourth to one-half dry rendered tankage and one of the above-mentioned vegetable proteins. If a non-legume hay is used, 2 additional pounds of protein supplement should be added to the rations listed below.

#### FIRST PERIOD (2 to 4 months)

Coarsely ground corn or barley .....	40 pounds
Coarsely ground oats .....	50 pounds
Protein supplements .....	15 pounds

#### SECOND PERIOD (3 to 4 months)

Coarsely ground corn or barley .....	60 pounds
Coarsely ground oats .....	27 pounds
Protein supplements .....	12 pounds

#### THIRD PERIOD (Last 3 or 4 months)

Coarsely ground corn or barley .....	70 pounds
Coarsely ground oats .....	18 pounds
Protein supplements .....	12 pounds

Oats produce growth rather than finish. Corn or barley must be depended upon to produce the fat. Barley is an especially good feed to use during the latter part of the feeding period because it produces a very smooth, even, firm fleshing. It may be ground and mixed with the corn, oats, and proteins or may be added as cooked barley to the ration. Cooked barley may be prepared by boiling the grain for 30 or 40 minutes and then allowed to steam for 2 or 3 hours. Three pounds of dry barley may be cooked and used as a noon feed. Cook barley daily because it will become rancid if held over 1 or 2 days.

Wheat bran is a tasty feed for calves and has a mild laxative effect. It furnishes bulk to the ration and is higher in protein and minerals than most grains. It is usually too costly to feed to commercial cattle; however, some members use it during the latter part of the feeding period to keep the calf on feed and gaining. Bran may be used up to 10 to 20 per cent of the ration.

Wheat may be fed to steers if it is coarsely ground and does not constitute more than 25 to 30 per cent of the ration. Too much wheat in the ration is very likely to cause digestive disturbances. Wheat is approximately equal to corn on a pound-for-pound basis in feeding beef cattle.

Ground spelt may be used in the ration as it is about equal to oats in feeding value.

Some feeders use corn-and-cob meal during the early part of the feeding period. There is but little feeding value in the cob but it does serve as bulk in the ration when oats and hay are high in price or scarce.

#### MILK

Home grown calves should not be weaned until they are 6 to 9 months of age. The use of a nurse cow for calves above this age is seldom economical. Skimmilk is an excellent protein supplement when available at a cost per gallon not in excess of the cost of  $1\frac{1}{2}$  pounds of oil meal.

#### ROUGHAGE

Alfalfa hay is one of the best roughages for beef calves. Good quality clover or soybean hay are also satisfactory. Give the calf all the good quality legume hay he will consume for the first half of the feeding period. During the LATTER PART of the feeding period he should be given only a limited amount of hay in order to obtain maximum grain consumption. THREE TO 6 POUNDS daily is sufficient.

Weather-damaged, coarse, stemmy hay has little feeding value. New hay may cause bloat. It is best to mix old and new hay together for several days and gradually change over to the new hay.

#### MINERAL

Part of the mineral requirements of the calf are furnished in such feeds as alfalfa hay, wheat bran and oil meals. However, it is advisable to mix equal parts of STEAMED BONEMEAL and SALT and keep the mixture before the calf at all times. Finely ground limestone should be added to this mineral mixture if little or no legume hay is fed. The cost of this mineral mixture is low, and the calf will consume but very little in a year's time. Place the mineral box in a dry, protected place.

#### SILAGE

Good corn silage is a very desirable feed but should be used in moderate quantities. This feed is fattening as well as being a good appetizer and prevents digestive disturbances. Eight to 10 pounds



daily is usually sufficient. Too much silage will reduce the amount of grain consumed and may cause paunchiness.

### PASTURE

TURNING THE BABY BEEF CALF OUT TO PASTURE DURING THE SPRING AND SUMMER MONTHS IS PERHAPS THE MOST DISASTROUS THING A CLUB MEMBER CAN DO. Pasture will never fatten a baby beef calf. If the calf is turned out in a small lot at night the small amount of grass he consumes will do no damage. Calves allowed free access to rank pasture will grow but not fatten, will lose their grain finish, and will not consume enough grain to continue their rapid gains.

### AMOUNT TO FEED

In general, a calf on full feed will consume about 2 pounds of grain for every 100 pounds of live weight; for example a 700-pound calf should consume about 14 pounds of grain daily. A steer should gain from 1.9 to 2.5 pounds per day when doing well.

### APPETIZER FEEDS

Appetizer feeds need not be used during the first part of the feeding period. During the hot summer months, or when the animal is carrying a high degree of finish, it may be advisable to add some appetizing feed to the ration to keep the calf on full feed.

One pint of blackstrap molasses mixed with 1 gallon of water, and enough used to dampen the feed, makes a desirable appetizer. Molasses is not a protein feed but is about EQUAL TO CORN, pound for pound, for fattening purpose. Some members prefer to use a commercially prepared sweet feed or molasses feed to mix with the grain ration. Usually a large amount of molasses feed or molasses CANNOT be fed economically to club calves.

Both silage and wheat bran previously discussed have value as appetizer in the ration.

Adding cooked barley to the daily grain ration will increase the amount of grain consumed.

### GRINDING

Corn, oats, wheat and barley should be ground COARSELY after the calf is 7 to 8 months of age. One exception is corn which may be fed whole if hogs are allowed to follow the calves.

REMEMBER—finely ground, powdered grain rations cause club members as much difficulty as any other one problem. Chronic bloat, constipation, poor appetites, and “going off-feed” are often caused by continuous feeding of pulverized, floury grain rations. Grind your

grains as coarsely as possible. Rolled or crushed oats makes a coarse bulky feed. Corn, wheat, and barley kernels should be broken at least once or twice in grinding.

#### OFF-FEED

Irregular feeding, hot weather, over-feeding, and digestive disturbances will occasionally cause a calf to go off-feed. When this occurs, reduce the amount of grain fed the calf to one-third his regular allowance or omit one feed entirely. As his appetite returns, gradually increase the feed a little each day until he is back on full feed.

#### MANAGEMENT

Many good calves have not developed and gained properly because of poor management, even though good rations were used.

The following suggestions are good management rules:

1. A box stall is desirable so that the calf can move around freely and lie down in comfort on clean bedding.
2. Have regular feeding hours and do not vary them.
3. Keep a clean supply of water before the calf or water him at least three times daily. "Water is cheaper than feed and just as important."
4. Make GRADUAL increases or changes in the grain ration.
5. Keep the feed box clean—give left-over feed to other livestock. Locate the feed box at a convenient height and place for the calf.
6. Use a variety of grains in the ration if reasonably possible.
7. Protein supplement is an absolute essential in a long term beef feeding project.
8. Keep salt and a mineral mixture before the calf at all times.
9. Provide regular exercise—lead daily— or turn in small lot with little or no grass at night during the summer.
10. Darken stall during fly season with burlap curtains. Avoid using too much fly spray.
11. Trim the feet regularly so that the calf stands straight on feet and legs.
12. Castrate home-grown calves early—before three months of age.

#### TRAINING

The quickest and easiest time to break a western calf to lead is near the beginning of the feeding period. Home-raised calves should be halter-broken and trained to lead at two to four months of age.

If your calf is wild, halter-break by tying him to a strong manger

for a few days. Another calf or cow nearby tends to prevent hysteria. Calves are wild because they are afraid of man and not accustomed to being handled in close quarters. Make sure your calf never gets loose from you during the early training period. Once he gets loose he will try to do so at every occasion as long as you own him. Calves like to be brushed. Using the brush regularly is one of the quickest ways to gain his confidence.

Remember, you can save many hours of labor and much trouble by breaking and training your calf at an early age. Well trained, quiet calves feed much better and make more economical gains than do wild nervous calves.

When the calf is broken to lead, train him to stand and show correctly with all four feet squarely under him and his back level. The head should be held fairly high to shorten the appearance of the neck and give a stylish appearance to the animal. Require him to stand perfectly still for several minutes before moving on. Train the calf to move forward or backwards by using only the halter. A show-stick, cane or staff should be used to move the feet into position.

### TRAINING THE HORNS

Untrained horns growing upright or straight out detract from the appearance of the animal and also makes him more difficult to handle. Horns should curve forward, inward and downward as shown in the accompanying pictures, Figs. 2A, 2B, and 2C.

On most calves, horn weights will be required in order to obtain the desired horn shape. One-, 1½- or 2-pound weights are usually used. Too-heavy weights may cause a kink or break in the horn. The size of horn will determine the amount of weight to use and the length of time required to start the horn growing in the desired position. Weights are usually left on a week and then removed for 4 or 5 days.



*Fig. 2A. Untrained horns cause the head to have a "wild" appearance.*  
*Fig. 2B. Horn weight on.*  
*Fig. 2C. Trained horns curving downward.*

repeating this until the horns have taken the desired curve. Horns should be 4 to 6 inches in length before weights are used.

## GROOMING

### CLIPPING

Angus calves and other dehorned calves should have the hair on their heads clipped to a line 2 inches back of the ears. Do not remove the hair from the ear. Do not clip the hair from the heads of horned calves as this makes them look plain and coarse.

Clip the tails of all breeds by starting 2 or 3 inches above the switch and continuing to the tailhead (Fig. 4). The clipping of the tailhead will vary somewhat with different animals, depending on the smoothness and height of the tail setting.

All clipping should be done about 10 days prior to show time to give the best appearance in the show ring.

### WASHING IS NECESSARY

Washing improves the appearance of the calf, improves the handling qualities of the hide and hair coat and makes a good job of grooming possible. Wash the calf once a week for a month prior to show day. Use plenty of pine-tar soap and soft water and scrub thoroughly with a brush. Rinse with clear water. Scrape off excess water and allow the calf to dry in a place free from a draft. The legs, underline, switch, and all white spots will need extra washing. One-half a cup of dip added to 12 quarts of rinse water at the last washing will make the curl last longer and also help to control lice.

### HORNS AND FEET

The hoofs should be cleaned and polished before showing. Trimming off long hoofs should be done several weeks prior to show day in order to avoid possible lameness.

Heavy horns should be rasped or scraped down a bit before being polished with sandpaper or emery paper. After sanding, apply fine bil, shoe paste, or a mixture of linseed oil and pumace stone for final polishing. Rub this application with a soft flannel cloth to add luster and polish to the horns.

### BLANKETING AND BRUSHING

Daily brushing will loosen the hide and hair and remove all dandruff, chaff and dead hair. Use a stiff cattle brush for this. Use of a rough curry comb is objectionable since it cuts and breaks the hair coat and roughens the hide.

Blanketing will tend to keep the hair coat clean and bring out the natural oil. However, most calves should not be blanketed during the fall months as this prevents the growth of a heavy hair coat. A suitable blanket may be made from burlap sacks and canvas straps.

#### DRESSING FOR THE SHOW

Every 4-H beef club member should take enough pride in his calf to groom him properly for the show. The appearance of the calf can be greatly improved by washing, brushing and curling the hair coat.

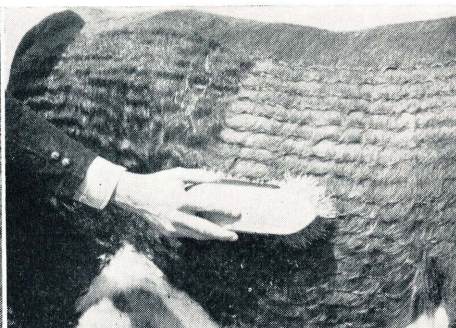
Short, straight-haired calves will usually be groomed by brushing the hair smooth and applying a bit of stock oil (equal parts of denatured alcohol and sweet oil) with a woolen cloth. The hair on the hindquarters may be wet, marked off, brushed up lightly and then curled, the same as for long-haired calves.

Most Hereford calves and some Shorthorn and Angus calves possess long hair coats. Their appearance can be greatly improved by curling the hair properly.

Wet the back and sides of the calf thoroughly, brush the hair down smooth, use a marking comb or straight comb and draw lateral lines from the rear of the calf to the front of the shoulder. The first line should be straight and run from pin bones over the point of the hip

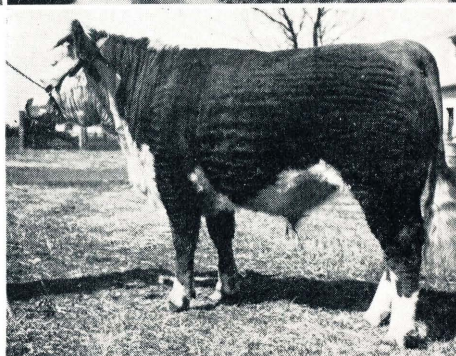


*Fig. 3A. Using the "marking" or "lining" comb.*



*Fig. 3B. Brushing upward with a dry brush. Use brush lightly.*

*Fig. 3C. Use a coarse, straight comb and comb the waved hair upward. This photograph shows the completed job.*



and up to the shoulder-neck line. Make all lines parallel to the first line and about one inch apart until the flank has been reached. Make lines on rear and forelegs down to the hock and knee. Use a dry brush and turn the curled tips UP lightly. Allow this to dry for 5 to 15 minutes, then use a long-tooth, coarse comb and comb the hair upwards. This should produce a marcel. Keep the animal on his feet until the hair is dry. The hair may be combed again after it is dry.

The thighs should be brushed out to give a broad, full appearance to the rounds.

The backs of most calves should be parted and brushed to the side to give a broad appearance to the top. However, on extremely long, curly-haired calves, the top may be marked, curled, and combed for-



*Fig. 4. Rear view of a well groomed steer.*

ward up to the crops. The hair over the crops and shoulder is then parted and combed to the side.

The tail switch should be braided into several small braids while wet and allowed to dry. Unbraid the tail and fluff it out by holding to the tip and brushing the hair upward. Then a few light, downward strokes with the brush will leave the switch smooth, fluffy, and very attractive (See Fig. 3C).

## SHOWING

It is a pleasure to show well trained cattle. Anyone can hold the lead strap, but it takes practice and observation to display an animal properly. Breeders and professional showmen take extreme pride in the training, grooming and showing of their cattle. Club members can learn much by watching good showmen at work.

1. Be ready before your class is called. Have your calf groomed and DRY.
2. Fit the halter on the calf so that the lead strap or chain draws against the lower jaw and leads from the left side of the animal.
3. You should walk forward with the lead strap in the right hand when leading the calf. When you stop place the lead strap in your left hand and use the show-stick in your right hand.
4. Watch your calf and the judge—ignore the crowd and other exhibitors.
5. If you have a chance, stop so that the calf's front feet are on the highest ground. This adds style and strength to the top of your calf.
6. Never stand between your calf and the judge. Give the judge a full view of your calf at all times.
7. Don't over-show. If your calf is standing correctly leave him alone.
8. Keep the calf's head up—at a smart, stylish angle.
9. Stand the calf squarely on all four legs—don't stretch him.
10. Avoid excessive fill on the calf on show day—this makes him appear paunchy and wasty.
11. Do what the judge tells you—quickly and politely.
12. Use the show-stick and not your feet to get the calf's legs into the correct position.
13. Don't criticize the judge. He has seen the entire class and is more experienced with cattle than you—otherwise he would not have been asked to judge.
14. The judge should be required to give a complete set of reasons on the class. This is the opportunity for club members to understand what is emphasized in judging fat steers.

## EQUIPMENT

The club members should have the following equipment for fitting and showing the calf:

1. Show-stick or cane
2. Bucket for washing
3. Bucket for watering
4. Tar soap
5. Scrub brush
6. Rice-root grooming brush
7. Scotch comb or coarse hair comb
8. Sandpaper
9. File or rasp
10. Wool cloth
11. Horn polish
12. Neat show halter
13. Marking comb
14. Feed box or bucket

## BASIS OF AWARD

Beef cattle at the State 4-H Show and state fat stock shows are judged on the basis of the best fat steer and the premiums are paid on that ranking. At most county shows the calves are placed AS ABOVE for ribbons and then ranked into A, B, and C groups for cash premiums. In placing these groups the judge considers the condition, training, fitting, grooming, showmanship and development for age rather than type and breeding.

## MARKETING BEEF CALVES

Auction sales for fat cattle are conducted at all state events and at some of the county fairs. Packers and local meat dealers like to give encouragement to club work and often support 4-H sales and consignments of good quality animals.

Members should not sell calves lacking proper market weight and condition. Underweight calves lacking finish should be kept on feed until ready for market and sold on the open market. In this case members keep records until the animals are sold and will receive credit for completion of the project.

## JUDGING BEEF CATTLE

Acquiring the ability to judge beef cattle requires much time and observation. Judging is the foundation of all beef cattle shows and is largely the means of determining the value of market and breeding animals. Salesmen or buyers of market cattle must be good judges and able to quickly estimate yield and quality of carcass from the live steer. Breeders and feeders must recognize and select for the same essentials of type and quality.

Every club member should make a determined effort to learn how to select beef cattle. Attend all of the county 4-H judging tours pos-



sible. Study the cattle in show rings and try to understand the basis of the judge's decision.

Livestock club members receive additional training and experience as members of the county 4-H livestock judging team. The winning county team in the state is given additional training by a livestock specialist and then permitted to enter the National Contest conducted at the International Livestock Exposition in Chicago.

## INSURANCE

Most beef club members feel that some form of insurance is desirable to protect their investment. Some members obtain insurance on their animal through a reliable insurance company, while others prefer a cooperative or mutual agreement plan among the members of the local or county club. The county extension agents can provide a plan for such an insurance pool.

## TOURS

Local club or county tours should be conducted several times during the year. These events enable each member to observe the feeding and management practices of the other members and the progress of the other calves. When the tour visits a project the member should tell the amount and kind of feed being consumed, the weight and average daily gain of the calf and should give an account of his experiences to date with the project.



*Fig. 5. Huron County livestock judging tour.*

## DEMONSTRATIONS

The 4-H livestock club demonstration is a splendid method of passing on to the public some of the instruction that is offered to 4-H club boys through club work. Many persons learn to appreciate the value of club work through witnessing demonstrations. A demonstration team is composed of two club members who select a subject from their project and in turn tell others in a clear, concise way, the method by which they go about that particular task. To demonstrate means to show. A successful demonstration requires some equipment to illustrate different parts taken up in the demonstration.

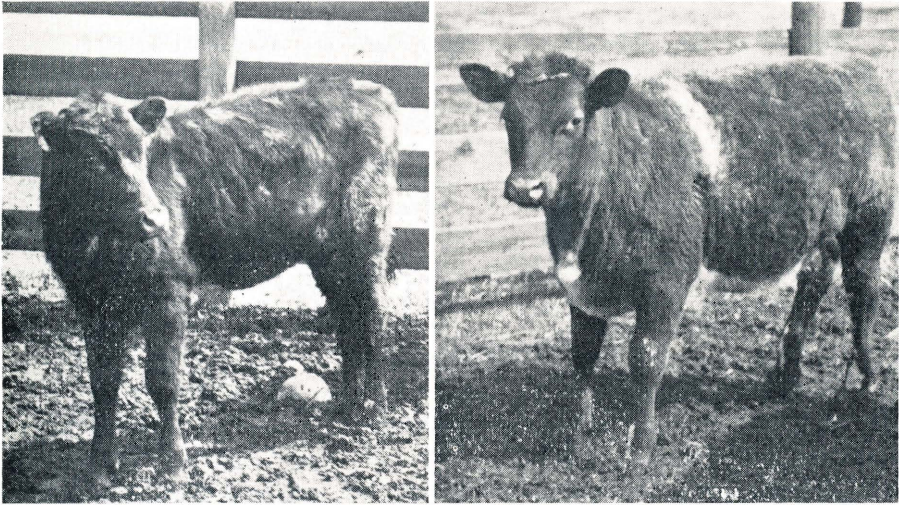
These and many other subjects are suitable for public club demonstrations.

1. Judging beef cattle.
2. Preparing coat, lining, and curling for show.
3. Showmanship in the ring.
4. Making rope halters.
5. Throwing animal with half hitch around body.
6. Dehorning calves with caustic potash.
7. Dehorning with a saw.
8. Castrating, bloodless method.
9. Regular castration.
10. Cattle lice and how to eradicate them.
11. How to remove warts.
12. Treating ringworm.
13. Trimming feet.
14. Balancing rations for baby beef calves.
15. Method of feeding cooked barley.
16. Creep feeding calves.
17. Marketing—demonstrate procedure in marketing through public livestock market.
18. Clipping calf for show.
19. Training calf to lead.
20. Treatment for bloat.
21. Shaping and polishing horns.
22. Training horns.
23. Livestock loss prevention.

## THE BEEF CATTLE BREEDING PROJECT

Enrollment in the beef breeding project has been increasing for the past few years. Members may begin the project with a heifer calf or yearling heifer, either purebred or grade. Heifers should be selected from well-bred herds. The animals should be registered in the member's own name.

Breeding animals should be grown out rather than fattened. However, the heifers should be in rather high condition at show time. This may be accomplished by using the rations suggested for the fattening project. Grass, silage and hay may be fed in more liberal quantities, than with steers, however considerable grain should be provided if the heifer is to be grown out well and carry enough con-



*Fig. 6A. Undesirable heifer, lacking beef type and character.*  
*Fig. 6B. Desirable type beef heifer.*

dition for the show. Beef heifers should not calve before 27 months of age. Some breed associations require this calving age in order to register the calf.

Heifers should be purchased from Bang's free accredited herds if possible. A safe plan is to require a clean blood test (negative for Bang's disease) on the animal you buy.

## TREATMENT FOR MINOR AILMENTS

### WARTS

Warts may be removed by daily application of sweet oil, castor oil or olive oil. This treatment may be required for two or three weeks before the warts disappear. Swabbing on pure coal tar dip every 2 or 3 days will also remove warts.

### GRUBS

Grubs or ox warbles usually appear in the backs of cattle between January and April. They are caused by heel flies and do considerable damage to the hide as well as annoy the animal.

One or two drops of kerosene placed in the hole in the hide will destroy the warble. If several animals are to be treated you may use a commercial rotenone wash in scrubbing the backs of all infested animals each month during February, March, and April.

### BLOAT

Mild or chronic bloat is usually caused by digestive disturbances, constipation or something like a sudden change in feed, moldy feed or new hay. It may be relieved by drenching with 2 ounces of turpentine in a pint of milk.

Drenching with a pint of fine oil, mineral oil, castor oil, or raw linseed oil will also relieve mild bloat. Walking slowly encourages belching and escape of gas.

Acute bloat may cause sudden death by suffocation. This condition requires tapping with a trocar or bleeding needle immediately.

### RINGWORM

Ringworm is dangerous to man as well as cattle. Be sure to wear gloves when treating ringworm. Remove all scabby material before starting the treatment. The daily application of tincture of iodine will cure most ringworm infections. However some breeders prefer a treatment using a mixture of lard and powdered sulphur. This ointment is applied daily by smearing it over the entire infected area.

### LICE

Commercially prepared livestock lice powders are usually effective if they are applied all along the back, neck, sides, flanks and under parts of the animal. A dust gun is the best method of applying. A heavy mixture of mineral oil (1 quart) and powdered sulphur (1 handful) applied with a brush is a very good treatment.

A 3-per cent solution of crealin applied with a spray or brush is also a satisfactory treatment. Any treatment for lice should be repeated at least once in exactly 14 days to destroy the lice that have hatched since the first treatment.

### SCOURS

Scours are usually caused by using dirty buckets or troughs, irregular feeding or over-feeding. Excessive feeding of laxative or high-protein feeds may cause scouring. Reduce the grain ration and use some non-legume hay instead of clover or alfalfa for a few days. A drench of one cup of raw linseed oil or castor oil is also helpful.

### FOOT ROT

Foot rot is usually caused by unsanitary conditions such as mud holes, or stables improperly bedded. Lameness, swelling between the toes and abscess formation are indications of foot rot.

Clean thoroughly between the toes and remove all dead tissue and then apply a small amount of undiluted crealin or Kreso dip to the infected tissue or soak in a saturated copper sulphate solution.

If the disease is extensive, a veterinarian should be called.