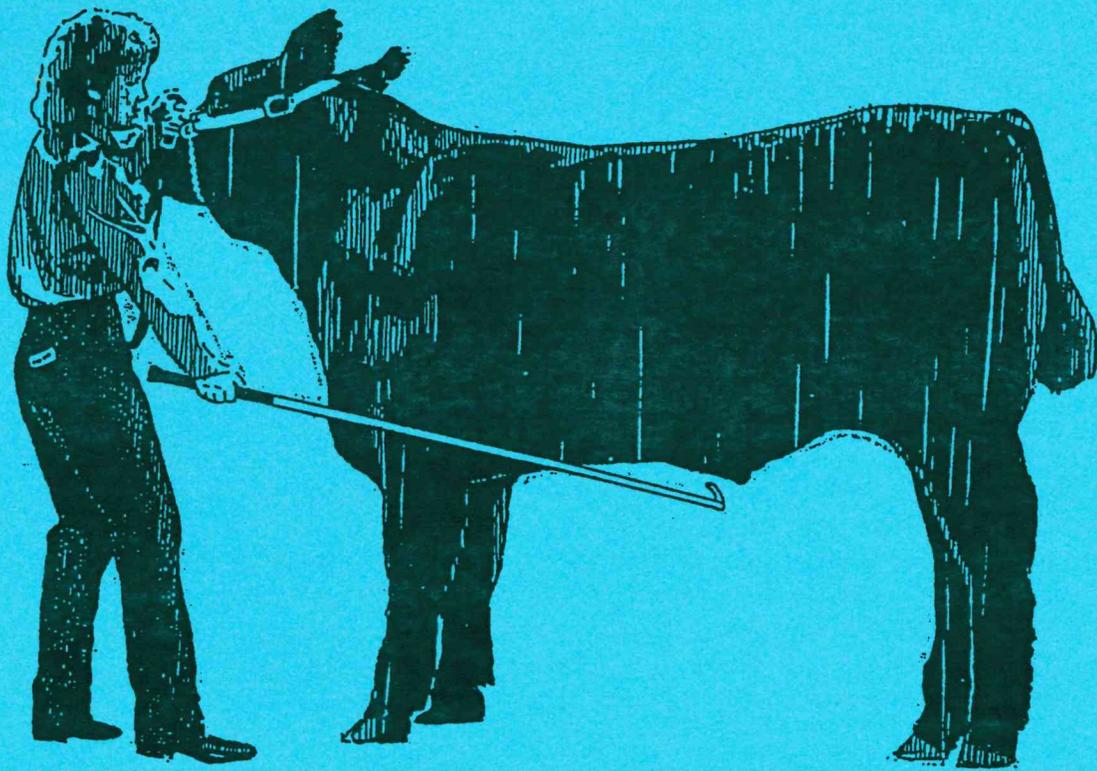


4-H Market Beef Project Manual



What is 4-H?

4-H is a part of the Montana State University Extension Service cooperating with the U.S. Department of Agriculture and your local county government. 4-H members are those boys and girls who participate in Extension-sponsored educational programs which are open to all youth regardless of race, creed, color, sex, handicap or national origin.

The goal of Montana 4-H is to educate youth and adults for living in a global and ever-changing world by using the resources of Land-Grant Universities and the U.S. Department of Agriculture.

Montana 4-H uses educational, learning-by-doing projects, club meetings, community service projects, events, and activities for young people and adults as they work toward attaining these five **LIFE SKILLS**:

- Fostering positive self-concept
- Learning decision-making and responsibility for choices
- Developing an inquiring mind
- Relating to self and others
- Acquiring a concern for communities—local and global

The emblem of the 4-H program is a green four-leaf clover with a white "H" in each leaf. The four "H's" stand for Head, Heart, Hands and Health and represent ways to develop the five life skills.

HEAD: Learning to think, make decisions, understand the "whys," gain new and valuable insights and knowledge.

HEART: Being concerned with the welfare of others, accepting the responsibilities of citizenship in our local and global communities, determining values and attitudes by which to live and learning how to work with others.

HANDS: Learning new skills, improving skills already developed, instilling pride in work and respect for work accomplished.

HEALTH: Practicing healthful living, protecting the well-being of self and others and making constructive use of leisure time.

This four-fold development is vital to every individual. All four of the "H's" should be an important part of the goals youngsters identify as they participate in 4-H sponsored programs and educational activities.

The U.S. Department of Agriculture (USDA), Montana State University and Montana State University Extension prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status.

4-H Market Beef Project Manual

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Introduction

In Montana, beef production is big business. Large parts of Montana are well suited to livestock grazing, and beef production is a major agricultural business in our state. In fact, Montana is one of the top ten largest beef-producing states in the nation. The beef industry offers many opportunities for youth in 4-H projects. A 4-H market beef project can offer insights into the use of management techniques that will help you make your market animal an economically feasible project. In the process of raising an animal, you will also develop responsibility, patience, decision-making skills, and other valuable life skills that you can use in all your endeavors.

This manual is designed to help you get started in the market-beef project. Using this information, you will learn how to raise, house, care for, feed and market your beef animal. But this publication can't do it all. Much of what you will need to know will come from others with experience—parents, friends, Extension agents and specialists, project leaders, veterinarians and neighboring beef producers. While this manual will give you the starters, you will need to actively seek out other resources and experts in the field. Do not hesitate to contact your 4-H project leader, 4-H club leader or your MSU Extension agent for other references or resources.

Purpose

The purpose of the 4-H market beef project is to help you learn about the beef cattle industry by becoming actively involved in it. In this project, you will develop an understanding of the importance of records in beef cattle production—financial, production and performance records. Records are critical no matter what kind of business you are in. Records help ensure that your project is profitable and you know where you are spending money.

Through your work in this project, you will also develop valuable life skills. Decision-making, responsibility, a spirit of inquiry, getting along with others, confidence, and a concern for your community are all skills you can develop through the 4-H market beef project. These skills will be useful for your entire life. These skills will also help you develop into a more responsible citizen. This project is designed as a tool to aid in this growth. Your development in the study of animal husbandry is limited only by your willingness to learn and participate.

The market beef project involves owning cattle. While it might be possible to participate in this project without owning an animal, you will gain much more from the project through a personal investment in at least one animal. Such ownership and exposure to a business enterprise can result in building a bank account to finance a college education or provide a start in business. Whether or not you make a profit each time, the experience you gain will result in sound training for future endeavors.

As 4-H'ers, you are expected to respond to the challenges of the market beef project with hard work and responsibility. Seek advice from your parents, county agents, and other leaders. You should also follow and practice the principles outlined in this manual. But most importantly, it is your responsibility to feed and care for your animals.

4-H Market Beef Options

The 4-H beef project has been a popular one with 4-H members in Montana. Through this project, young people have learned to select, care for, feed and market their beef animals. The practical experience of owning and raising market animals will present you with numerous opportunities and challenges. You will also learn a lot about yourself, your interests and your abilities.

Many 4-H members have enrolled in the market beef project year after year. Each year brought the opportunity to learn, experiment and to try again, but new learning experiences were not designed into the project for those who enrolled in the project for several years. As a result, the market beef options were developed.

The market beef options are designed for Montana 4-H members who enroll in the market beef project. You should choose activities from the options to increase your learning experiences from the challenges of some of the different options. See your County Agent or obtain a 4-H Market Beef Options book (#2CO305) to choose and enroll in beef options.

After two years of participation in the market beef project, Montana 4-H members should select one or more of the options. The purpose of the options is to encourage you to learn as much about the market beef industry as possible. After several years of participation in the options program, you should have developed a well-rounded knowledge of the market beef industry—from selection to judging to breeds to economics to retail marketing. By participating in the options, you will learn about much more than just how to raise, feed and show an animal. The options will stretch your abilities and skills.

Housing and Facilities

Your steer lot should be just that—a lot where you keep only your steers. Don't let horses or other cattle run with your market steers. A lot that is 100 feet x 100 feet should be about the right size for one to four steers. Give the calves enough room to exercise, but not so much space they are hard to find or hard to bring up to feed. Locate your steer lot on a well-drained land with a good grass sod so you won't have a problem with mud.

You should have a shed in your steer lot, about 12 feet by 12 feet and about 10 feet high. You may want to

board up the sides of the shed about five feet high. By positioning the shed in one corner of the lot, and building a gate on one side, you can use it as a place to catch your calves. Leave the shed open during the day to give the steers a shady place to lie down. Place your feed trough under the shed to protect it from rain.

Your steer shed will be very useful and important, but it does not have to be elaborate and fancy. The simple, open-sided shed will do fine.

Equipment

To participate in the market beef project, you will not need a lot of equipment.

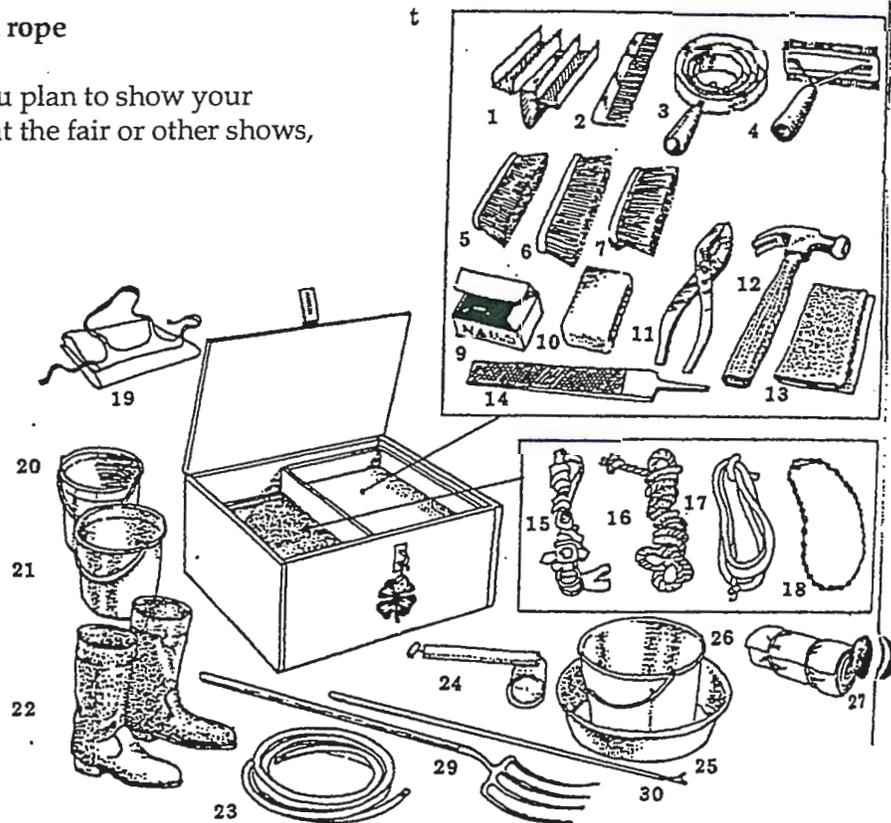
Basic equipment you will need are:

rope halter
feed pan
water bucket
hose
neck rope

If you plan to show your animal at the fair or other shows,

you will want to have many more items like those in a show box.

A show box is typically three feet long, two feet wide and 1.5 feet deep. This size is convenient for storing and transporting items to groom and care for your market steer.



Top of Box

1. Liner
2. Comb
3. Currycomb
4. Scotch Comb
5. Coarse Brush
6. Soft Brush
7. Rice-root Brush
8. Clippers
9. Nails
10. Soap
11. Pliers
12. Hammer
13. Emery Cloth

Bottom of Box

15. Show Halter
14. File
16. Rope Halter
17. Lead Rope
18. Neck Chain
19. Rubber apron
20. Wash bucket
21. Dip Bucket
22. Boots

23. Garden Hose
24. Hand Sprayer
25. Feed Pan
26. Water Bucket
27. Rags

Not in box:

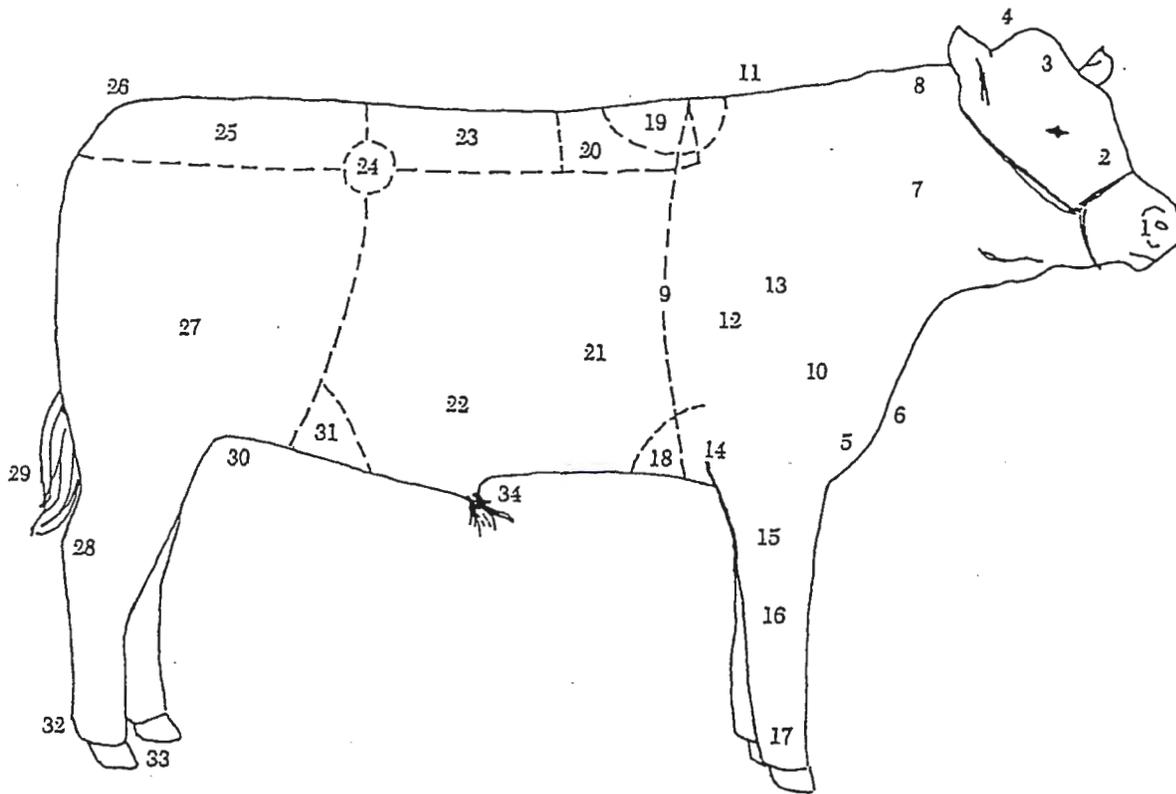
29. Pitchfork
30. Show Stick

Not shown: Hair dressing

Learn The Parts of a Beef Animal and Cuts of Meat ^J

Learn the parts as a club or group activity. This game can be played during your meeting. Make a large drawing of a beef animal on the blackboard or on a piece of cardboard, then number the parts. The game leader calls a

number and points to a member. The member must name the part of the animal with that number. Knowing the cuts of beef and how they are associated with the animal is also important (see next page)



1. muzzle
2. face
3. forehead
4. poll
5. brisket
6. dewlap
7. neck
8. crest
9. forerib (heart girth)
10. point of shoulder
11. top of shoulder
12. shoulder

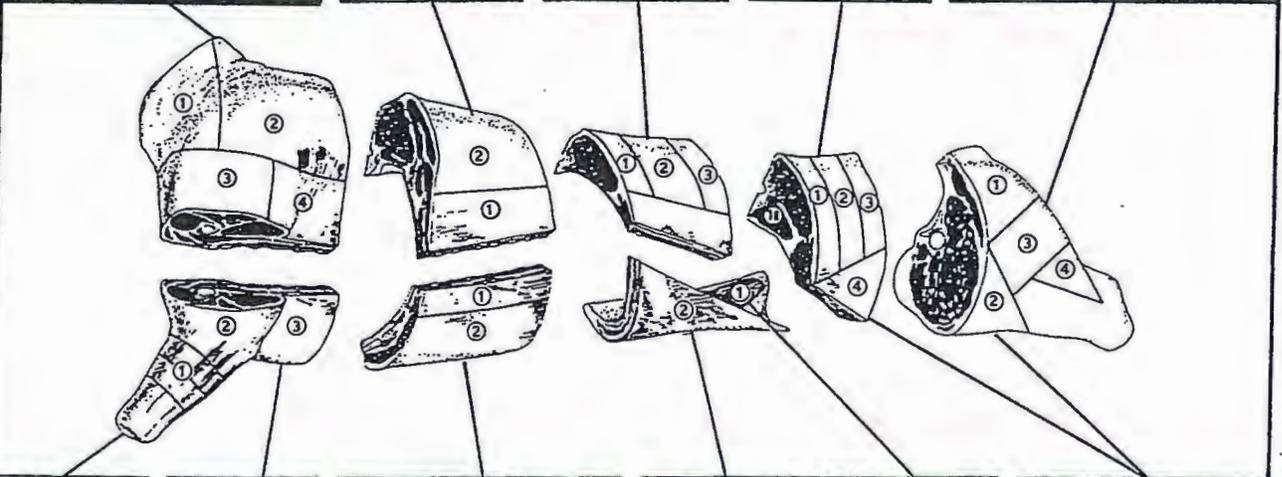
13. shoulder vein
14. elbow
15. arm
16. knee
17. shank
18. fore flank
19. crops
20. back
21. ribs
22. paunch or belly
23. loin
24. hip or hook

25. rump
26. tailhead
27. thigh or round
28. hock
29. switch
30. testes, cod, or udder
31. hind flank
32. dew claw
33. hoof
34. sheath (bull)
pizzle (steer)

RETAIL CUTS OF BEEF

WHERE THEY COME FROM AND HOW TO COOK THEM

<p>CHUCK Braise, Cook in Liquid</p>	<p>RIB Roast, Broil, Panfry</p>	<p>SHORT LOIN Roast, Broil, Panbroil, Panfry</p>	<p>SIRLOIN Broil, Panbroil, Panfry</p>	<p>ROUND Braise, Cook in Liquid</p>
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<p>FORE SHANK Braise, Cook in Liquid</p>	<p>BRISKET Braise, Cook in Liquid</p>	<p>SHORT PLATE Braise, Cook in Liquid</p>	<p>FLANK Braise, Cook in Liquid</p>	<p>TIP Braise</p>
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* May be Roasted, Broiled, Panbroiled or Panfried from high quality beef.
 ** May be Roasted, (Baked), Broiled, Panbroiled or Panfried.

This chart approved by
National Live Stock and Meat Board

When you have your housing, fencing and equipment in order, and you have obtained your feed, the next step is to select a quality market beef animal.

Conformation

Selection is the important first step which can limit your success or open the door to other opportunities. The best feeding, management and grooming techniques cannot overcome the handicap of an unwise choice of a poor quality animal. Choosing an animal of superior type with the potential for outstanding performance, coupled with superior management, feeding, grooming and showing offers the greatest opportunity for achievement.

One of the most important considerations in selecting a calf is choosing the correct "type." You're probably wondering: "What is the correct type of animal?"

The following discussion of the "meat-type" animal should be of some help to you in answering that question. First let's look at the parts of the beef animal and wholesale cuts of the carcass.

Today's consumer wants tender, lean, choice grade beef cuts that have a minimum of waste fat. The modern "meat-type" animal is a fast-growing, heavy-muscled animal that carries a minimum amount of outside fat when it is finished for slaughter. A good market animal is well-developed and full in the areas of the high-priced cuts—loin, rib, round and rump.

Feeder calves may be either from purebred or grade herds.

Many commercial cow herds in Montana produce calves with good enough quality for 4-H club feeding anywhere. Some cattlemen are also producing high-quality calves sired by high-gaining, production tested bulls. A calf with bred-in gaining ability will make rapid and efficient gains, which is an essential item in profitable cattle feeding.

Age

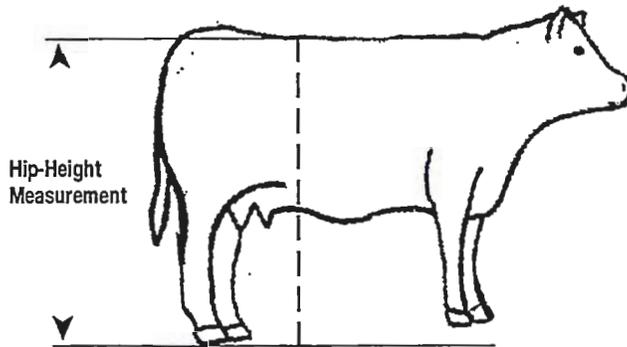
The age of the prospect calf is very important because most shows have a maximum age limit, and older steers will have difficulty making the choice grade. At these shows, the steer's teeth will be checked (or "mouthed") to determine whether he is under the maximum age. Be very careful to select a calf whose age will be between 14 and 18 months at the time it is finished.

Weight

Another important factor to consider when selecting a calf will be his weight. "Weight per day of age" is a good indication of a steer's growth thus far and in the future. The heaviest calf for his age is not always the best. Study the calf and decide the composition of his extra pounds. If he is heavier because of excessive waste and fat as a weanling, he will be wasteful as a yearling and will probably become too fat too soon. Also, if the prospect is extremely big and large-framed, he may not be finished by the proper time.

Try to select the calf whose finished weight will be between 1,100 and 1,250 pounds at show time.

Hip Height Measurements



A possible tool to assist you in selecting a club calf is the use of hip height and projected slaughter weight. Using Table 1 as a guide, take a hip height measurement of your calf.

This measurement is taken directly over the point of the hip with the calf standing on level ground. Be sure to take an accurate measurement.

Knowing the age of the calf and the hip height in inches, it is easy to determine frame size and expected slaughter weight. For example, suppose your calf measured 48 inches at the hip and was 9 months of age. Table 1 (next page) shows your calf to have a frame score of 6 and would be expected to finish at a weight of 1251-1350 (see figure 1 below).

Figure 1. Expected finished weights for different frame scores

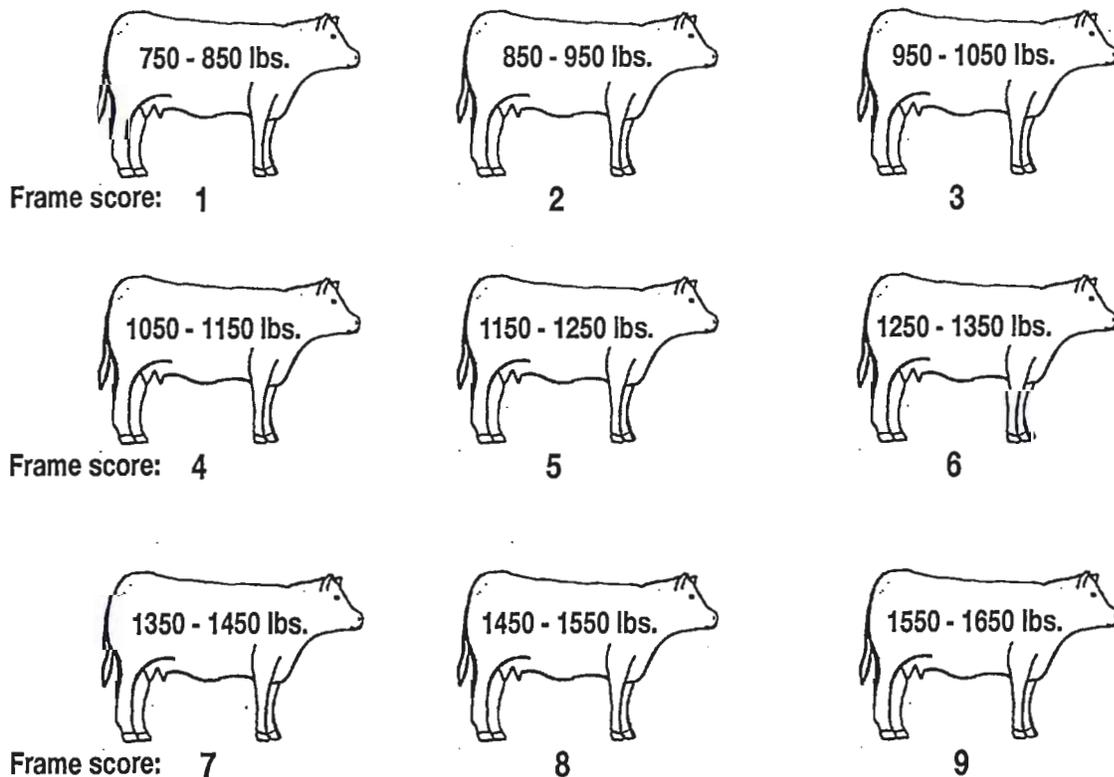


Table 1. Steer hip height (inches) for frame scores by age

Age in Months	Frame Score								
	1	2	3	4	5	6	7	8	9
5	33.5	35.5	37.5	39.5	41.6	43.6	45.6	47.7	49.7
6	34.8	36.8	38.8	40.8	42.9	44.9	46.9	48.9	51.0
7	36.0	38.0	40.0	42.1	44.1	46.1	48.1	50.1	52.2
8	37.2	39.2	41.2	43.2	45.2	47.2	49.3	51.3	53.3
9	38.2	40.2	42.3	44.3	46.3	48.3	50.3	52.3	54.3
10	39.2	41.2	43.3	45.3	47.3	49.3	51.3	53.3	55.3
11	40.2	42.2	44.2	46.2	48.2	50.2	52.2	54.2	56.2
12	41.0	43.0	45.0	47.0	49.0	51.0	53.0	55.0	57.0
13	41.8	43.8	45.8	47.8	49.8	51.8	53.8	55.8	57.7
14	42.5	44.5	46.5	48.5	50.4	52.1	54.4	56.4	58.4
15	43.1	45.1	47.1	49.1	51.1	53.0	55.0	57.0	59.0
16	43.6	45.6	47.6	49.6	51.6	53.6	55.6	57.5	59.5
17	44.1	46.1	48.1	50.1	52.0	54.0	56.0	58.0	60.0
18	44.5	46.5	48.5	50.5	52.4	54.4	56.4	58.4	60.3
19	44.9	46.8	48.8	50.8	52.7	54.7	56.7	58.7	60.6
20	45.1	47.1	49.1	51.0	53.0	55.0	56.9	58.9	60.9
21	45.3	47.3	49.2	51.2	53.2	55.1	57.1	59.1	61.0

Breed

The breed you choose to show is not so important. Keep in mind that there are good calves and in almost every beef breed, and every breed has something good to offer. Crossbred calves have

become very popular in the last few years in an effort to combine the good traits for different breeds. If you have a favorite, try to select a suitable calf of that breed or cross.

Health

A health program is important to successful feeding. When you buy an animal and bring it home, he will be about weaning age (6-9 months). Check with the producer you buy your market calf from to see what health practices, if any, he has performed on your steer. Your steer should be vaccinated for Blackleg/Malignant Edema, Lepto (use 7-8 way vaccine), and IBR-PI₃ (nasal or injection form).

If your animal has not been vaccinated for these diseases, you should have this done within the

first two to three weeks you have your calf at home.

If your calf hasn't been treated of grubs, treat with a pour-on. Untreated cattle will have damage to the hide on the topline which will take from their appearance.

You may also choose to implant your calf with a growth stimulant. The implant is a small pill placed under the skin on the back of the ear. The implant will increase the average daily gain on steers and is a recommended practice.

Feeding Your Calf

General Feeding Rules

- Have regular feeding hours.
- Increase feed gradually.
- Change rations gradually.
- Feed only the amount of grain that your calf will eat in about one hour.
- Keep the feed box clean.
- Keep salt and minerals available at all times.
- See that fresh, clean water is always available.

When you bring your calf home, don't try to feed it all it will eat. Give the calf all the good non-legume hay and water it wants. Don't give it more than a double handful of grain at any feeding. Let the calf rest for the first two or three days while it becomes familiar with its new home.

After your calf is familiar with its new pen (four or five days), you may start feeding more grain. If it is feeling well and is quiet, you may feed your calf about a quart of grain each night and morning. If the calf cleans it up, then increase its feed about a pint every third day until it is eating about two quarts at each feeding. After this, gradually increase the amount of feed by about a quart each week.

Feed home-grown feeds and buy commercial feeds only as necessary to properly balance your home-grown feeds. Any feed, either hay or grain, must be of good quality for finishing calves. They have sensitive tastes and will not eat their feed unless it's clean and palatable.

It takes about 2500 pounds of grain and 2000 pounds of hay to properly finish a calf to 1050 to 1250 pounds live weight. Once a calf is on feed a good feeding rule is 1½ to 2 pounds of grain daily per 100 pounds of live-weight, plus all the good hay he will clean up. This will usually amount to five or six pounds of hay per day.

Grains are finishing feeds. You should be familiar with the different grains, protein sources and roughage used in feeding steers.

Corn is the most common ingredient in steer rations. Corn is a rich feed high in energy and moderate as a protein source for finishing steers. Cattle like to eat corn and will eat it best when it is crimped, rolled or very coarsely cracked. If you live on a farm, you may have homegrown corn available. In this case, rough cracking your corn in a grinder-mixer is the most practical way to prepare it for feed.

Oats are another good feed grain for cattle. They are not as high in energy as corn and cannot be relied on to fatten cattle by themselves. Oats are palatable, and cattle eat them well, so when cost allows, oats should be included in the ration.

Barley falls between corn and oats as an energy source. It is commonly grown in Montana and is usually an "inexpensive" source of grain. It works well in rations when rolled, crimped, or steamed and flaked. Barley is also between corn and oats in fiber content, and this gives it an advantage as a feed

source.

Good, green, leafy hay is a "must" in calf finishing. Since a calf will not eat too much hay, what he does eat must be the best. Good hay furnishes not only roughage, but much of the protein and vitamin A needed by the calf. Both are very important for growth. Either good alfalfa or good wild hay is all right for finishing calves. Good alfalfa hay does not need a protein supplement but wild hay does. Usually ¾ to 1 pound of protein supplement per day will balance the calf's ration. There is no need to chop or grind hay for finishing 4-H calves.

Commercial feeds, including special calf-finishing feeds, are sold under various trade names. They are valuable feeds when needed to supplement home-grown feeds but are expensive when not needed. Since every 4-H calf feeder has a different situation it is suggested you talk with your parents, 4-H club leader or County Agent before you buy a commercial calf-feed supplement. They can help you check your own feeds against what you need and help you decide what is the best buy.

An illustration of a commercial feed used in calf finishing is dried molasses beet pulp. It is about equal in feed value to barley if it does not exceed 50 percent of the grain ration. In addition, it has even greater value in keeping down bloat and other digestive troubles. Dried beet pulp gives bulk to a heavy grain ration without lowering the grain's digestibil-

ity. When dried pulp is equal or less in price, compared with barley, you can afford to feed a 50-50 mixture by weight. When it is higher than barley, the pulp part of the mixture can be cut down to one-third or one-fourth and still be fairly safe.

Minerals are needed for proper use of feeds. The only minerals needed by Montana cattle that are not already supplied in common feeds, are salt, iodine and phosphorus, so far as our present-day information goes. The first two can be supplied by either a home-mixed or a commercial mineral containing at least 10 percent phosphorus. Once a calf gets on feed, he may not eat much of the mineral mixture because he will be getting plenty of phosphorus from his grain mixture.

Water is the most important feed of all and a calf must have all he wants. It always must be fresh and clean. In winter, provide warm water. If a calf has to drink ice water he won't take what he needs. He will also use heat and energy from valuable feed just to warm the water he drinks.

Calves are individuals and every calf is different from every other calf. Some calves can eat more than the suggested amounts of grain and others can't eat as much. To keep your calf healthy and gaining properly, he must have the right amount of concentrate of grain, and the right

amount of roughage or hay.

Whenever his droppings form a jelly-like mound, everything is about right. Thin, loose droppings indicate over-feeding or possibly a sick calf, while hard droppings usually mean not enough water or feed. Too much grain and not enough hay may cause your calf to scour. Whenever this happens, the first rule is to cut down on the grain until his droppings return to normal. Start back on the grain very slowly. If he goes off feed completely and won't eat grain at all after two days, consult a veterinarian to prevent the possible loss of your calf.

During the first four to six months, your calf should be fed enough to keep him growing, but not enough to get him fat. For most animals, this will mean a gain in weight of about 1 ½ pounds per day. Corn silage or hay may make up a major portion of the ration during the growing period. Then about five months before your sale your calf should be fed more grain and less hay or silage so that he will gain faster and put on fat. During the last five months he should gain well over two pounds per day.

The chart on page 13 will give you an idea about how much your calf should eat per day. Some calves will eat more than this, and some may eat less.

How Much Your Calf Should Eat Per Day

Weight of calf (pounds)	Pounds hay to feed	Pounds grain to feed
400	8	4
500	8	6
600	7	8
700	5	14
800	4	16
900	3	18
1000	2	20
1100	2	22



Training And Grooming

Halter breaking and gentling your calf should be your first job after you get him. Remember, the calf grows faster than you do and the longer you wait to break him, the tougher your job will be.

Sometimes it is easier to halter your calf and tie him on the trailer when you bring him home. He should have settled down and stopped fighting the halter by the time you get him home.

When you get the calf home, tie him to a sturdy fence or post in a cool, dry, comfortable place. Be sure the halter is positioned high up on the bridge of the nose to prevent restricting his breathing. Tie him up high and securely with only 12 to 18 inches of slack. He may get his feet over the rope if it is too low or too long. Also, always tie the rope with a slip knot which can be loosened easily if necessary. Stay with him at all times while he is fighting the rope.

Get your hands on the calf. Begin scratching him around his tail head and down his back. **Keep your hands away from his head!** This irritates the calf and may cause him to start butting. Nothing you can do will help calm him more than scratching and brushing.

After the calf has settled down and will allow you to scratch him, try leading him to water. It might be best to wait until the morning after you first tied him to do this, because his head will be sore and he will appreciate the water. Do not carry water to your calf—to do so defeats your purpose.

Place a bucket or trough of

clean, fresh water at the far end of the pen. Quietly, untie your calf while talking softly to him and scratching him. Pull him toward the water. He will probably balk, but keep steady pressure on the rope until he steps forward. As he steps forward, immediately release the pressure on the rope. This release of pressure is a reward to him. Repeat the process giving and taking. Leading is a process the calf must learn and you must teach.

When you reach the water, back away from the calf and give him plenty of time to drink. If he will not drink after five or six minutes, lead him back. He will probably drink the next time.

While leading the calf, have someone place some feed at his tie space. This way he is rewarded in leading to and from the water. Give your calf no more than 20 minutes to eat his feed. After that time, take the feed away from him and give him plenty of fresh hay. (Never leave buckets of any kind under your calf!)

If you stick to this process and brush the calf generously, he should be settled enough to turn him loose at the end of three or four days. However, it is very important that you catch him, lead him and brush him at least once a day for the next several weeks. This is to make sure he has learned his lesson and does not forget it.

Halter breaking can be eased by taking the time and patience when your calf is the right size and age.

You should begin "teaching" your calf to set up several months before the show. Every calf must be taught to stand correctly in the show ring. You cannot expect him to do well if you haven't worked with him.

Patience is the most important factor in teaching your calf to do anything. Some calves learn more quickly than others, and some require much more time and training.

You may begin training your calf in his work halter; however, you will need a good show stick. You don't need to have a fancy, expensive show stick. A wooden stick will do fine if it's not too heavy and is fitted with a sturdy hook on the end. The hook is used to position the feet. It should be sharp enough to get response but not sharp enough to cut. The stick should be long enough to reach your steer's back feet.

When you first introduce your calf to the stick, hold his head up high and very slowly rub under his belly with the stick. He might want to kick at it and move about, but keep working with him until he decides he likes the scratching and will stand still.

When the calf will stand still, use your boot toe or the end of the stick to place his front feet. Move

his foot back by pressing on the flesh just above the front of the hoof. If the foot needs to move forward, press up on the dew claw with your boot toe or the hook of the stick. Position his back feet the same way, but always use your show stick on them. You will want your calf to stand with a leg at each corner of his body. It will take practice for you to learn the correct position for his feet. Do not let him get his feet too far under him or too far behind him.

Here are a few important hints in teaching your calf to set up:

- Be patient. Never lose your temper and hit the calf. He will become angry and frightened of the stick.
- Scratch his belly. When you stop the calf, scratch his belly to settle him and then place a foot; scratch his belly again and then place another foot.
- Use the hook in the stick to keep his belly sucked up and his top line straight.
- Do not overdo. If your calf is working well, set him up a few times, then leave him alone. However, most 4-H'ers don't spend enough time teaching a steer to set up.

Steer of Merit

With the increased interest on good eating quality of beef with less fat, it would be useful to know the carcass quality of your steer. The Montana Steer of Merit program is designed to give you that information. Awards are also available for high quality carcasses through the Montana Stockgrowers Association that cooperates with Montana State University in this effort.

See your MSU County Extension

Agent and participate in the program if at all possible. From participating in the program, you will learn the quality grade and yield grade of your steer. If your animal meets the minimum standards, you will receive a Steer of Merit Certificate. If the quality of the carcass is high enough, you could qualify for a state-wide cash award. There will also be county awards in many counties.

Careers

4-H beef projects can lead to interesting careers. Some of these include:

Beef Cattle Herdsman
Farm Manager
Cattle Buyer
Veterinarian

**Breed Association
 representative**
Nutritionist
Veterinarian
Veterinary Assistant
Feed Sales and Service
Equipment Sales
Cattle Producer

Glossary

If you are going to work with cattle, it is important in your beginning project to learn some of the more commonly used cattle terms. Every profession, sport and industry has its characteristic terminology. The cattle business is no different, and knowing these terms will help establish your credibility.

Balanced Ration—One that supplies all of the essential nutrients in the right proportion for the specific stage of production.

Bovine—Term referring to all cattle.

Breed—Animals similar in color, structure and other body characteristics. When mated, members of the same breed produce offspring having color, structure and other body characteristics similar to their parents. They are said to “breed true.”

Bull—A male bovine that is used for breeding.

Calf—Young animal of either sex, usually less than one year old.

Carcass—What is left after the head, hide, feet and internal organs have been removed from the animal.

Carcass Weight—Weight of the carcass.

Castration—To remove the testes of bull calves.

Concentrates—Feeds such as corn, barley, oats and protein supplement.

Condition—Degree of fatness.

Conformation—The visual outline of an animal.

Cow—A heifer that has calved.

Cow-Hocked—Crooked hind legs as viewed from the rear.

Creep Feeding—Providing a calf with feed in addition to what it gets from its mother’s milk and pasture.

Crossbred—Animal from parents of two different breeds.

Cutability—Estimated percentage of carcass weight in boneless, closely trimmed retail cuts from the round, loin, rib and chuck.

Dam—Female parent.

Dehorning—Removing horns from cattle.

Double Muscled—An animal with an abnormal enlargement of the muscles, especially noticeable in the loin, rump and round.

Fat Thickness—Depth of fat measured over the rib-eye muscle of the carcass at the 12th rib.

Feed Efficiency—Term for the number of pounds of feed required for an animal to gain one pound of weight; e.g., 6.5 pounds of feed per pound of gain.

Finish—Degree or amount of fatness on an animal.

Founder—A nutritional ailment from overeating—resulting in high fever, lameness in front feet with excessive hoof growth.

Free Choice—Allowing animal to eat as much as he wants at any time.

Grooming—Care of animal such as washing, clipping and brushing.

Heifer—Female bovine that has not calved.

Live Weight—Weight of the live animal.

Management—Selecting, feeding and caring for beef animals.

Market Beef—Steer or heifer fed for the purpose of producing meat.

Market Value—The price you receive for a live animal.

Nutrient—Ingredients in a ration such as protein and vitamins that help develop bones, muscles and finish.

Performance Record—Measure of a calf's growth such as weaning or yearling weight.

Post-Legged—An animal that does not have ample set on the rear legs.

Production Records—Measure of a cow's productivity based on the number and weaning weights of the calves she has produced in her lifetime.

Purebred—An animal whose ancestry traces to registered stock of one breed; however, all purebreds are not registered.

Quality—State of desirability or excellence.

Ration—Amount of feed given to an animal in a 24-hour period.

Registered—Recorded in a herd book of a recognized breed association which issues a certificate that the animal is the offspring of registered parents and meets registration requirements.

Roughage—Feeds such as silage, pasture and hay.

Scours—Diarrhea that may be caused by moldy or sour feed. Young calves may get scours by consuming too much milk or from being in a cold, damp building.

Sickle-Hocked—An animal with crooked hind legs as viewed from the side.

Sire—Male parent.

Steer—Male castrated when a calf.

Structural Soundness—Refers to the physical condition of the skeletal structure, especially the feet and legs.

Weaned—When a calf is no longer nursing its dam. Weaning is the act of separating the calf from its mother when it is about seven to eight months old.

Weanling—A calf that was recently weaned.

Weight Per Day of Age—Measure of weight gain; usually from birth to weaning, or from birth to one year old.

Yearling—An animal that is more than one year and less than two years old.

WHAT WE BELIEVE ABOUT ANIMAL CARE

Since before written history, animals have been under the care and stewardship of humans.

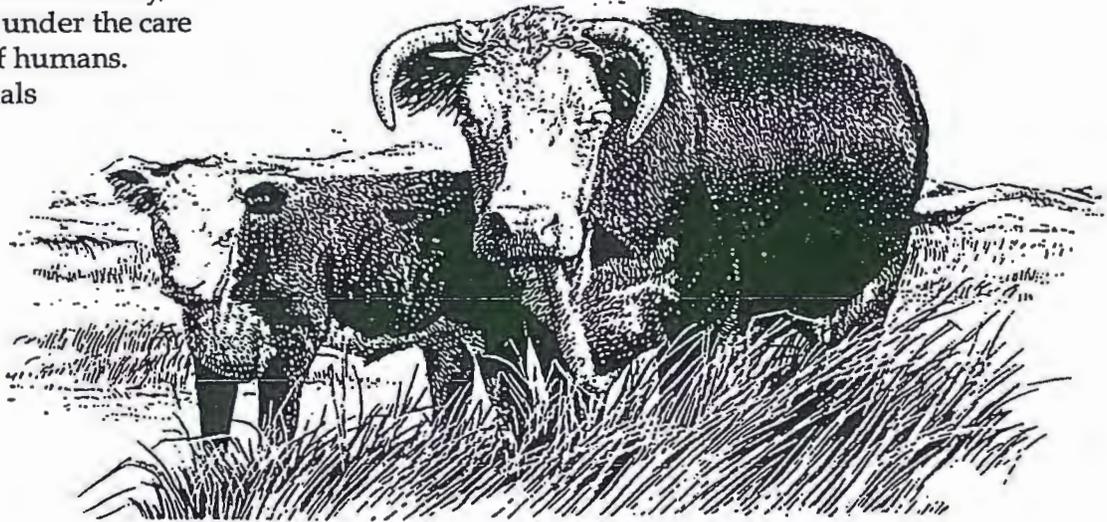
Traditionally, animals have fulfilled three major functions: 1) as producers of food and clothing; 2) as beasts of labor and recreation; and 3) as companions to humans.

Montana State University and Montana 4-

H are dedicated to the responsible care of animals and to the production of safe and wholesome food. We believe there are scientific and philosophical reasons for people to employ sound animal husbandry practices. Abuse and neglect of animals is irrational, counter-productive and goes against these husbandry practices.

Montana 4-H requires that animals be handled in a proper and ethical manner in accordance with modern scientific animal husbandry practices. In addition, adequate care, including watering, feeding and comfort should be appropriately provided to all animals.

4-H-members, parents and leaders have a



serious responsibility to follow animal health practices that are approved by the industry and the U.S. Department of Agriculture to assure that meat customers are receiving wholesome and safe food. Health aids and other approved products should be used with care, according to prescribed practices, only when needed and in the correct amounts.

Montana 4-H requires that market animals meet all the Food and Drug Administration regulations governing management and safety practices. Approved withdrawal times from health aids and growth stimulants must be followed.