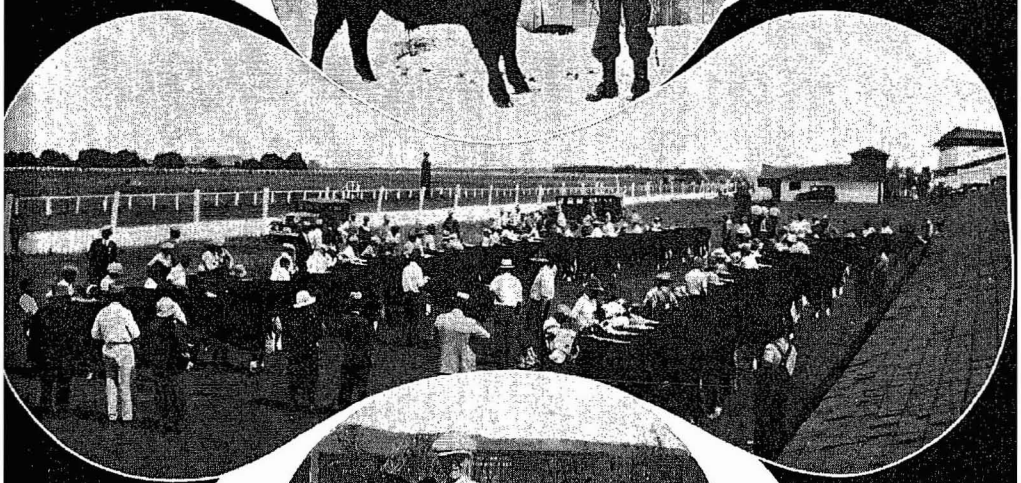
lletin No. 118 January 193

The 4H Club BEEF CALF







Montana State College
Extension Service
Bozeman

WHAT IT MEANS TO BE A MEMBER

Boys and girls 4-H Beef Calf Club members have an excellent opportunity for broad and valuable training.

They learn how to judge cattle, how to select good feeder calves, how to fatten a calf, and the feeding value of different Montana feeds. When the club member borrows money from a bank to purchase his calf, and when he takes out insurance to protect himself and the bank from loss, he receives valuable business training. The experience he gets in showing his calf at the county or state fair in competition with other boys and girls is of great value for it develops confidence in himself and in his ability.

A valuable part of his training comes from attending Club meetings where he gets experience in parliamentary practice, talking in public, and conducting meetings.

Besides the experience and training that each club member gets, their calves serve as a demonstration of the use of Montana feeds in fattening calves to the people of the community.

Montana State College, Extension Service, J. C. Taylor, Director, Cooperative Extension Work in Agriculture and Home Economics. Montana State College and United States Department of Agriculture, co-operating. Distributed in furtherance of the Acts of Congress May 8 and June 30, 1914.

The 4-H Club Beef Calf

By
D. E. RICHARDS,
Extension Livestock Fieldman

Only the well-fattened calf of good quality "tops" the market. To develop a "market-topping" calf, the club member must know how to select the good feeder, and he must have a knowledge of feeding and management. Some essential information based on tests by the Montana Experiment Station and the practical experience of Montana feeders is presented in this bulletin.

If the club member wishes to develop a calf for exhibition at early autumn shows the suggestions in the first part of this bulletin should be followed. If the calf is to be shown or marketed in November the "Montana Plan" (page 17) should be followed.

Feeding and Management

Before becoming a member of a 4-H beef calf club, a boy or girl should have enough feed to fatten the calf. About 2,500 to 2,800 pounds of grain and 2,500 pounds of hay are required.

TYPE OF CALF

A good quality beef calf about five months old and weighing between 350 and 400 pounds is best adapted for practical beef calf club work in Montana. Steer calves are recommended, but heifer calves may be used if they are spayed. The better the quality and breeding of the calf the "better" the price will be when it is "finished" and sold. A good beef calf should be smooth and have a short, broad head with a very wide muzzle,

a short neck, straight top and bottom lines, a long, level rump with a good round, well sprung ribs and a deep body.

TIME TO START

The time to put a calf on feed depends upon when the calf is to be "finished" and ready to be shown and sold. A good time to start a beef calf club is in October or November. Start with a "weaner calf" and if it is handled according to the suggestions that follow, it will be ready for market along in the fall of the following year, weighing about 1,000 pounds. This requires about 2,500 to 2,800 pounds of grain and a ton and a half of hay.



A broad strong head indicates a good feeder

USE MONTANA FEEDS

Montana home-grown feeds, that is, alfalfa hay, wheat, barley and oats, are all the feeds that are necessary to produce a market-topping baby beef. When alfalfa hay is not available, it is desirable to feed a little cottonseed or linseed cake, which are standard feeds of known value. A little beet molasses, which is a good appetizer and will cause certain calves to eat more grain, may also be desirable.

TO FATTEN CALF

A calf will not get fat on hay or pasture alone no matter how good the hay or pasture is. It takes grain along with the hay to fatten a calf and the more grain the calf will eat the greater the gain. The more fat and finish the calf carries at the end of the feeding period, the higher the price.

"Oats For Starting — Wheat For Fattening"

Value of Grains

WHEAT A GOOD FEED

Wheat is the best grain grown in Montana for fattening calves. Calves that are fed wheat will have more finish at the end of the fattening period. Wheat has another advantage in that it is less inclined to cause bloat than barley. Frosted wheat or wheat that is shrunken from hot weather has practically the same feeding value as good market wheat, provided it has fairly good weight per bushel.

BARLEY EQUALLY GOOD

Blue barley or any barley without hull has practically the same feeding value as wheat. Common barley with hull such as Trebi, ranks next to wheat or hulless barley as a fattening feed but the club member will experience more trouble from bloat if barley is used than if the calves are fattened on wheat, frosted wheat, shrunken wheat, blue barley or hulless barley.

START WITH OATS

Oats are valuable for starting a calf on feed, but they are a "growing" feed rather than a "fattening" feed. Oats, fed whole, is the best feed for starting a beef calf on the grain ration. It is desirable to feed oats for about two months or until the calf is getting about eight pounds a day and then gradually shift to the wheat or other grain that is to be used for fattening.

FEED WEIGHTS

Grain	Weight
1 Gal. Whole Oats	4 lbs.
1 Gal. Ground Oats	3 lbs.
1 Gal. Ground Wheat	5 1/2 lbs.
1 Gal. Ground Barley	4 lbs.
1 Gal. Cottonseed "Cake"	5 1/3 lbs.
1 Gal. Beet Molasses	12 lbs.

"Feed The Oats Whole — But Grind The Wheat or Barley"

While oats are a very valuable and palatable feed for use in getting the calf started on a grain ration, it has too much hull to be a food fattening grain and it should never be used as the only grain for fattening a calf.

WHOLE OATS PREFERRED Whole oats are preferable at the start because calves like them better than other grains. There is very little, if any, danger from "bloat" or "over feeding" from whole oats and alfalfa hay. When the calves get up to six or eight pounds of oats per head daily they may start to scour. Be careful at this time and start changing to wheat a little at a time.

If the calf is wild and not used to eating grain, put some oats in a box near the salt box or in the manger if the calf is tied up. As the calf learns to eat the oats, start feeding one pound in the morning and one pound at night. (1 quart of oats weighs 1 pound).

It is best to feed the oats whole, that is, unground, but it is desirable to grind the other grain. Wheat should not be ground too finely for then calves do not like it and will not eat enough to get fat. If it is coarsely ground or rolled the calves like it much better. Barley should be ground about medium.

GRADUALLY INCREASE FEED Calves are like people, some eat more than others but the grain for the calves should be increased gradually. At the start of the feeding period, never feed more than the calf will clean up at each feeding. A practice followed by many feeders is to increase the feed at the rate of about one pound a week until the calves are up to about eight pounds daily and then hold the feeding at about that amount during the winter months. About the first of April the grain should be gradually increased, keeping the calf on a full feed of grain during the entire summer and until he is sold in the fall. When the calf is on a full feed he should be watched closely and if he shows signs of going

"off feed" the feed should be reduced or cut nearly in half for about a day and then gradually increased again.

On this page is a good feeding schedule, starting with oats and gradually changing to wheat or barley. The table gives the feeding program through the third week in April. After that the grain must be increased gradually, the amount to feed

A Good Feeding Schedule

Time	Kind of Grain	Amount
December 1st week	Whole oats	Start on feed
" 2nd "	"	2 lbs. per day
" 3rd "	"	3 " " "
" 4th "	"	4 " " "
January 1st "	"	5 " " "
" 2nd "	"	6 " " "
" 3rd "	"	7 " " "
" 4th "	"	8 " " "
February 1st "	Whole oats	6 " " "
	Ground wheat	2 " " "
" 2nd "	Whole oats	4 " " "
	Ground wheat	4 " " "
" 3rd "	Whole oats	2 " " "
	Ground wheat	6 " " "
" 4th "	Ground wheat	8 " " "
March 1st "	Ground wheat	8 " " "
" 2nd "	"	8 " " "
" 3rd "	"	8 " " "
" 4th "	"	8 " " "
April 1st "	"	9 " " "
" 2nd "	"	9 " " "
" 3rd "	"	10 " " "

"A Long-Necked Calf Never Topped The Market"

varying somewhat with each calf. By the middle of the summer the calves should be eating up to 15 pounds of grain per day and by the end of the season the careful feeder will be feeding his calf from 18 to 20 pounds or more of grain per day.

Following this program and feeding the calf an average of 12 pounds from May 1st until October would require a total of 2,800 pounds of grain (this includes 340 pounds of oats).

WHEN TO FEED

During the winter months and when the calf is getting only a small grain feed, it is necessary to feed the calf only twice a day — morning and evening.

During the summer months when on a full grain feed the calf will eat more grain and make faster gains if fed three times a day.

When first started on the grain ration, the calf usually will eat the grain and "clean up" the feed box in 15 to 20 minutes. As the feeding period advances and the calf begins to get on a "full feed" of grain, he will not eat all of the grain immediately. Instead of "cleaning up" the feed box in a few minutes the calf will eat a portion of the grain, and then lie down and chew his cud contentedly for a while, perhaps strolling out to get a drink of water. In about an hour he will go back and eat more of the grain.

When the calf begins to leave a part of his feed for a while after feeding do not get alarmed and think he is "off feed." If the calf has the grain all "cleaned up" by the time the next feed is offered, you can be sure everything is O. K.

CLEAN FEED BOX

When the calf does not "clean up" all of his grain before the next feed is offered, the old grain should not be left in the feed box. Clean the feed box and feed the left-over grain to hogs or other livestock.

The feed box should be kept clean, otherwise, especially in the summer time, it will attract flies and the calf will not eat nearly as much grain as if it is offered to him in a fresh, clean box.

KEEP GRAIN CLEAN

It should hardly be necessary to mention this precaution but often when the calf is not doing well, that is, when he is not eating the full amount of grain, it is found that the grain is being stored in an open granary or box where the chickens and turkeys walk over it. Grain so stored often becomes dirty and the calf does not like to eat it.

ECONOMICAL FEEDING

It takes a certain amount of grain and hay for growth and body maintenance. Additional grain is largely converted into fat and the more fat or finish that the calf has at the end of the feeding period, the higher price he will bring.

Thus, the most economical method of feeding is to get the calf to eat the greatest possible amount of grain. This does not mean that he should be crowded beyond the limits suggested here for winter feeding but during the summer months every effort should be made to get the calf to eat all of the grain possible.

WHEN FEEDING HAY

Alfalfa is the best hay for fattening calves. It is high in protein and properly balances the grain ration. First cutting alfalfa hay is preferable for calves as it is less likely to cause scours and bloat. Bluejoint, prairie hay or grain hay can be used but it is best to feed one-half pound of cottonseed cake or linseed cake per day to supply the needed protein.

The best practice to follow in feeding hay is to feed just what the calf will nicely clean up each day. The common practice of feeding hay morning and evening seems to be best. Do not expect the calf to eat up the coarse stems and other waste in the hay. Clean out the manger from time to time and feed the stems and waste to horses or stock cattle.

Hay that is ground or chopped does not have greater feeding value than hay that is fed long. Calves have plenty of time to grind their own hay. With careful feeding there should be very little waste in feeding long hay to club calves.

SALT AND WATER The calf should have access to stock salt at all times and it should have plenty of water. The ideal arrangement is to have the calf in a feed lot where good, fresh water is always accesable but when it is not possible to provide a feed lot of this kind, the calf should be watered at least three times a day during the hot summer months.

BREAK TO LEAD The recommended practice is to put a standard rope halter on the calves and break them to lead when they are first being put on feed. Directions for making halter are given on page 15.

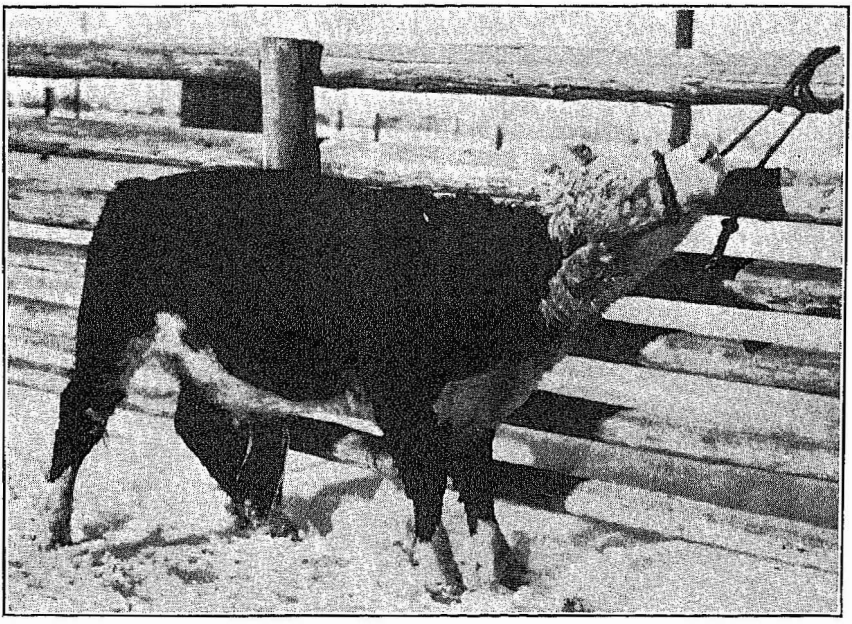
Calves so trained may be led to the scales for weighing without difficulty. The calf must be trained to lead if it is to appear in a show ring. If the training is delayed until well along in the feeding period the calf will be harder to break and will run off more fat than if the job is done at the start.

In breaking to lead, put a good, strong rope halter on the calf and tie him up for a few minutes. When he learns



Rope halter properly used

"Break the Calf to Lead Early"



Tie him up short to something solid with his head high and it won't take long to break him

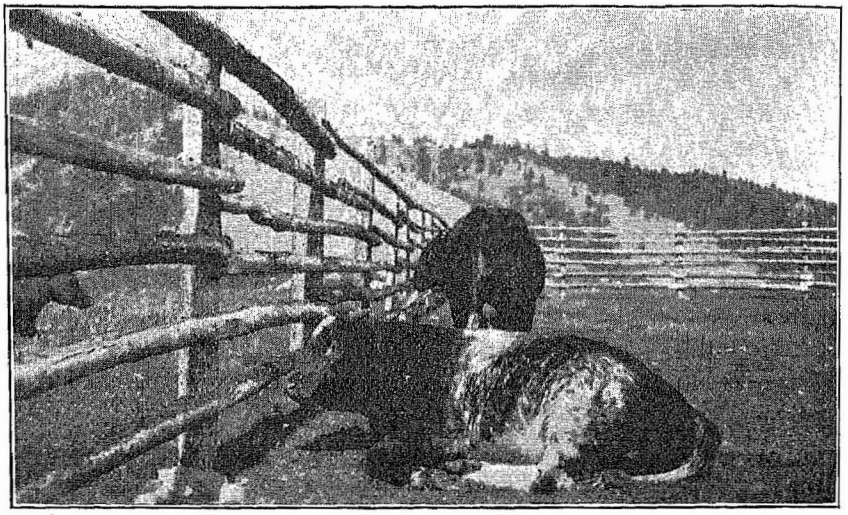
that he cannot get away he always will have more respect for the halter than if he drags a small club boy around the barn lot for the first lesson. Be sure that the calf does not get away the first time an attempt is made to lead him or he will always try to get away.

If a good calf is in the hands of older boys and girls who have the assistance of experienced herdsmen, it may not be necessary to break the calf at the start. It is sometimes advisable to tame the calf by quiet feeding and to teach him to stand tied and to lead by working carefully and gently with him at intervals a few months after he is put on feed. Be careful with this method — inexperienced boys sometimes have developed "outlaws" in this way.

"Two Calves Fed Together Do Better Than One Fed Alone"

KEEP CALF GENTLE

It should go without saying that a beef calf that is kept gentle and "made a pet of" will make better gains than the calf that is abused and wild. If the calf runs to the far corner of the feed lot when the club member approaches it usually indicates



Gentle contented calves make the best use of their feed

unkind treatment. Beef calves that are "rode and roped" and kept wild never put on very much finish or stand first in their class in baby beef shows.

CALVES NEED COMFORT

The best arrangement is to have an open shed for shelter and a small lot for exercise. An expensive shed or fence is not necessary. If water can be provided in the lot and places fixed in the shed for feeding hay and grain the arrangement is ideal.

Provide a good generous amount of straw for bedding for a beef calf likes a good soft bed just as well as a club member.

"Well Bedded Is Half Fed"

Other Important Pointers

DON'T RISK BLACKLEG

Beef calves should always be vaccinated to prevent blackleg. Vaccination costs only 15 cents or less a dose and it is the only sure means of avoiding this fatal disease. Club members as well as cattlemen cannot afford to take a chance with blackleg.

REMOVE HORNS EARLY

Dehorned cattle always bring slightly more money than horned cattle. For this reason, all 4-H Club calves should be dehorned. When done properly, the horn is cut off so close to the head that a good generous ring of hair and hide is cut off with the horn. If not cut off close enough, small horns or scurs will grow out and give the calf an ugly appearance. Calves should be dehorned so that they look like natural polls or "muleys" and then when the calves are shown, their heads can be clipped the same as natural polled cattle.



Not a good job of dehorning—cut them off short

From a strictly show standpoint it may be desirable to leave the horns on and train them so they curve down but the policy in Montana is to train boys and girls to be practical feeders and to handle the cattle in a practical way rather than to be too much concerned with non-essential show ring details.

LOOK OUT FOR BLOAT

No matter how careful you are in feeding, some of the calves may bloat and treatment is necessary. The best way to treat for bloat is to mix thoroughly, about one-half a cup of kerosene with about a cup of milk or raw linseed oil. This

should be given to the calf as a drench. An ordinary "soda pop" bottle is a good thing to use when giving a drench to the calf. Do not hold the calf's head too high and see that the calf swallows before all of the kerosene is poured in its mouth. After the calf begins to swallow, pour the remainder of the dose in gradually. Put the end of the bottle pretty well back in the calf's mouth. As a last resort the calf may be tapped with a trocar but kerosene will nearly always save a calf. When the calf is treated in this way, it does not set him back very much, but if tapped with a trocar it will be several weeks before he thoroughly recovers and begins to gain again.

SHEEP DIP FOR LICE

Sometimes during the winter a calf will get lousy, and if something is not done to kill the lice the calf will do much scratching and will gain slowly. The best treatment is to wash the calf with warm water containing "sheep dip." About one-half cup of dip to a 3-gallon pail of warm water is the proper mixture. Wash the calf thoroughly. Pick out a warm day or be sure to keep the calf in a warm barn after washing.

A SIMPLE PROBLEM

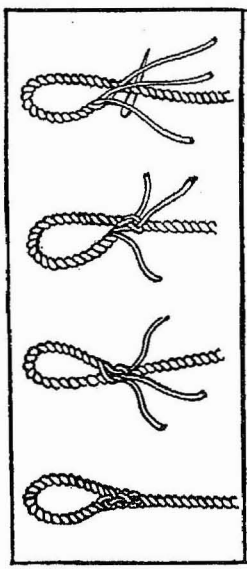
400 lb. calf this fall	+	1 good 4-H Club member 2,500 lbs. wheat 2,500 lbs. alfalfa 4 months pasture	=	1000 pound baby beef next fall

"For Bloat—Try Kerosene First; the Knife Last"

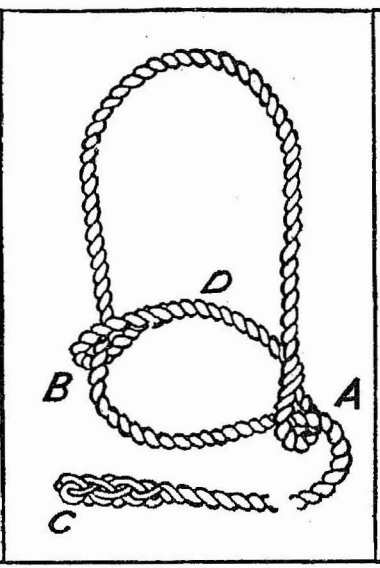
To Make A Rope Halter

To make an adjustable rope halter for a club calf, allowing 6 feet for tie rope, take a piece of ½ inch rope 13 feet long.

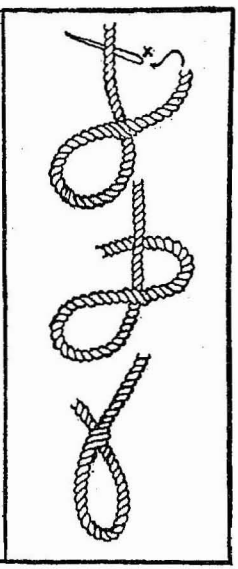
At a point about 18 or 20 inches from one end of the rope make a loop splice. (see figure). To make a loop splice, raise 2 strands with a marlin spike (a smooth pointed piece of hardwood) and pass the long end of the rope under the strands thus



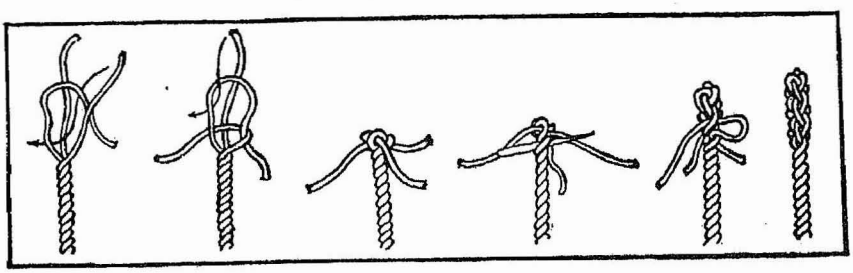
Steps in making eye splice



Completed halter. A, eye splice; B, loop splice; C, crown knot; D, nose piece



Steps in making loop splice



Steps in making crown knot

raised so that when the loop is drawn to the desired size, the rope will pass through beneath the 2 strands at right angles to the direction in which they are laid. To complete the splice, raise 2 strands in the long part of the rope at a point above and close to the loop just made and pass the short end through at this point, drawing the ropes closely together.

Next make an eye splice (see figure) in the short end of the rope. To make an eye splice, untwist the end of the rope and form a bight or loop, placing the strands in position, the 2 outside strands straddling the main rope and the middle or top strand running along the top of the rope. Raise one of the strands in the rope by inserting the marlin spike and pass the center strand under it, diagonally to the right. Turn the rope toward the left and pass the outside strand over the strand that was raised first, and under the strand next to it. To pass the third loose strand under the third strand in the main rope, turn the main rope back to its original position and raise the third strand in the main rope, i. e., the strand next to the one which was previously raised, then insert the loose strand so that it will come out where the first loose strand entered the main rope. No two loose strands should be under the same strand in the rope and no two should come from between the same two strands. Complete the splice by tying (splicing) in the strands in the same manner as in making an end splice. Pass the end of the rope through the loop made by the eye splice and then through the loop splice. The end of the rope may be finished with an end splice or by splicing back the loose ends of the rope.

To make an end splice first make a crown knot (see figure) and then splice back the loose strands. To make a smooth, tapering splice, cut out a portion of the fibers in each strand after each tuck and when finished, pound the splice lightly with a short stick or hammer and roll it on the floor under the foot.

Montana Feeding Plan

The most practical way of fattening calves in Montana has been developed by the Montana Experiment Station at Havre.

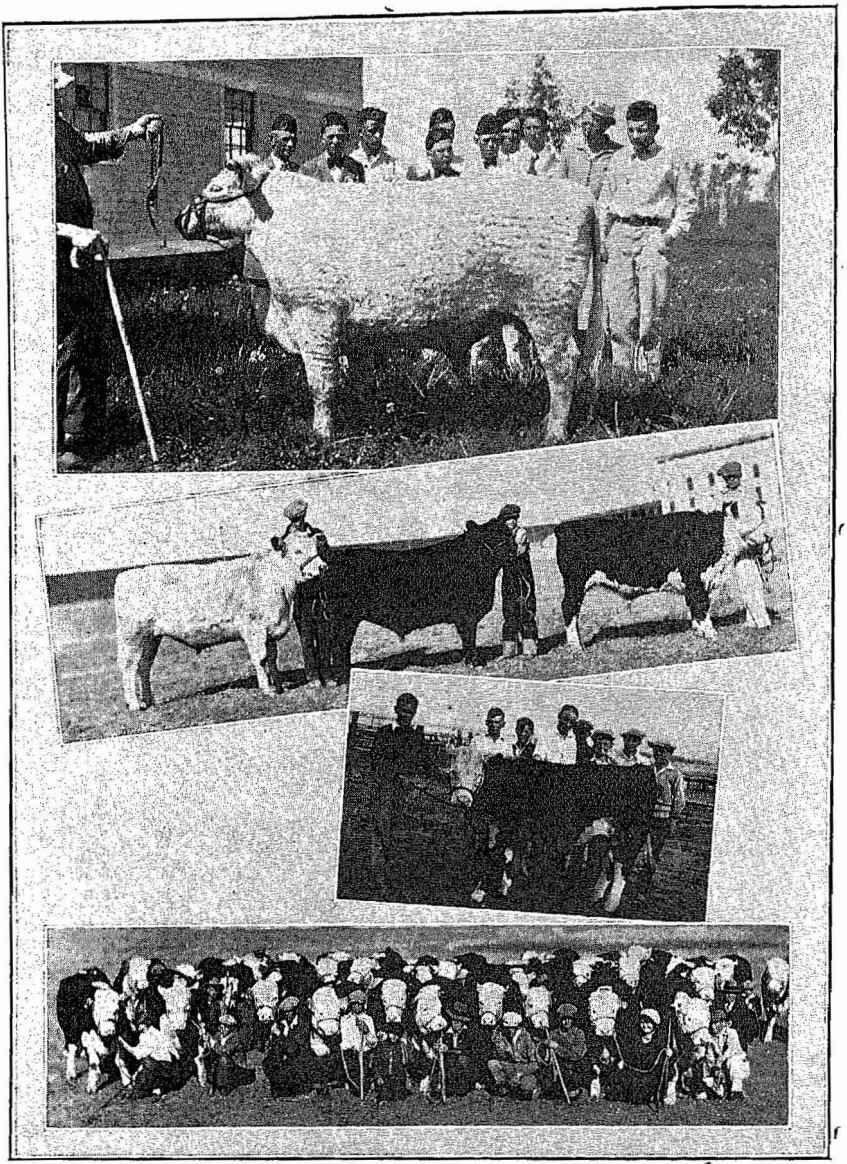
This system of baby beef production is known as the Montana plan. The method briefly stated, is to take a weaner calf in the fall, and feed him about three pounds of grain per day through the winter along with a full feed of alfalfa hay, continue to feed increasing amounts of grain during the summer when the calf is on native pasture. When he is moved to the feed lot about the first of September "full feed" him on grain and hay until he is "finished" and ready for market, usually between the first and the middle of November.

Recommended Feeding Schedule

November to May	Three pounds grain per day Full feed of hay (10 lbs. per day)
May to September	Full feed of grain on pasture —which will be about six pounds per day.
September to November 15	FULL FEED OF GRAIN (Should eat 20 lbs. per day at close of period). Alfalfa hay, first cutting

Calves will not eat much grain when first put on pasture, but they should be fed what they will clean up each day and they will eat more as the season advances.

"The Montana Plan Is Best for November Marketing"



Here they are—good calves and good 4-H Club members at club meetings and at various fairs of the State. Upper—getting some pointers on how to "show the calf." Next—posing some prize winners in different classes. Next—A club meeting with a calf as the "subject." Lower—Club members and their exhibits at one of Montana's fairs.

There are many advantages of the Montana plan of baby beef production.

1st. The calf is started on a grain feed gradually—three pounds per day, during the winter and increasing the amount when the calf is on pasture. Calves very seldom bloat when handled in this way.

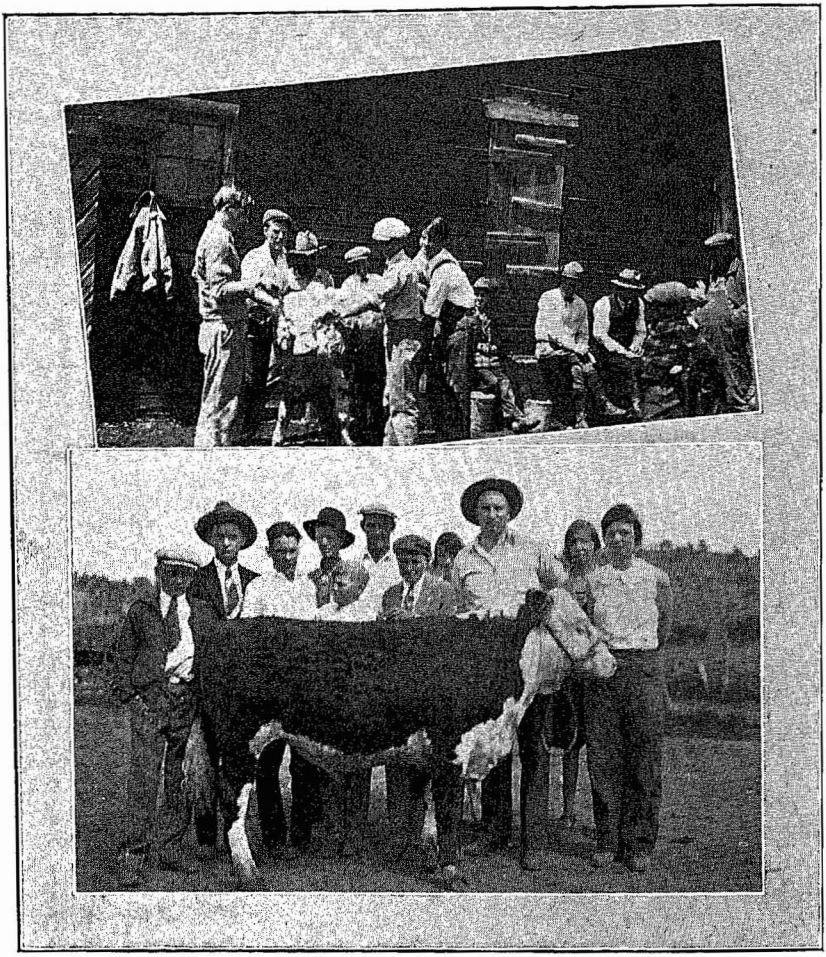
2nd. The calf eats grain very readily when so handled and makes rapid gains when taken off pasture in the fall.

3rd. The calf is ready for market at a time when the market supply of fat cattle is limited, thus usually hitting the high market of the year.

4th. Less labor is required to fatten the calf by this method.

5th. A 4-H Club boy can handle five or more calves in this way and have a very profitable enterprize.

The main disadvantage of the "Montana plan" for 4-H Club work is that the calves will not be "finished" and ready to show and sell at the early fairs in August and September. If calves are to be shown in November, the Montana plan is recommended.



Club boys demonstrating the "washing up" process, and posing for their picture after a demonstration on preparing the calf for the show ring