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# Beef Steer Guide and Record unit II



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Name \_\_\_\_\_ Age \_\_\_\_\_ Club Year \_\_\_\_\_

Address \_\_\_\_\_ County \_\_\_\_\_

Name of Club \_\_\_\_\_ Years in 4-H \_\_\_\_\_

Name of Leader \_\_\_\_\_ Record Book 85 \_\_\_\_\_



# Beef Cattle Publications \*

## Bulletins

No. 283 -- Beef Cattle Performance Testing

## Circulars

No. 812 -- Control Horn Flies on Beef Cattle with Back Rubbers  
981 -- Cattle Back Rubbers from Used Baler Twine

## Leaflets

No. 175 -- Commercial Breeders Program  
183 -- Beef Cattle Identification  
310 -- Urea in Beef Cattle Feeds

## Publications

No. 141 -- Calving Management for Virginia  
163 -- Beef Cattle Corrals  
258 -- Spraying Your Beef Cattle for Flies  
312 -- Wintering Calves in Virginia  
386 -- Crossbreeding Beef Cattle  
394 -- Corn Silage and Beef Cattle

## Others

AS - 68 - 24 -- Freeze Branding  
AS - 70 - 1 -- Management Steps for Breeding Beef Cattle Artificially  
AS - 70 - 5 -- Liquid Supplements for Ruminants

\*Copies may be obtained from your local Extension Agent.

This publication was prepared by Dennis Rowan, A. N. Huff, and C. C. Mast. The following State 4-H Animal Science Committee members also helped develop this publication: J. D. Cutlip, D. A. Dyer, J. G. Flowers, C. L. Huffman, N. N. Rich, B. R. Spangler, C. H. Stith, and R. L. Townsend.

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## Project Objectives

The steer project is designed to help 4-H members to meet many of the overall 4-H program objectives including the development of leadership, citizenship, sportsmanship, responsibility, and personal growth. The project is a tool for youth development.

The goals of this 4-H steer project are to select, purchase, produce, market, and evaluate slaughter cattle on a small scale basis. The project should be conducted as a small scale commercial feedlot operation. Practical and commercial purchasing, feeding, and marketing practices should be utilized. Most steer projects are aimed for a special 4-H steer show and sale. Spring and fall shows and sales are available to most 4-H members. Showing is recommended, but is not a project requirement. The best system would be to select and full-feed for one show date, show and sell, and evaluate the project on an economic basis including carcass evaluation. The end product is a beef carcass suitable for the consumer. The major goal should be to produce a 1000 - 1200 lb. choice steer at 13 to 17 months old on a least cost ration basis with a minimum average lifetime daily gain of 2 lbs. per day of age. The steer should yield a choice carcass with a high percent cutability in the boneless retail cuts (round, loin, rib, and chuck). The carcass should have a maximum of 1/2" fat cover over the 12th rib, at least 1.2 sq. inches of loin eye per 100 lbs. at the 12th rib, and a minimum of 1.2 lbs. carcass weight per day of age. The end product should be acceptable to the producer, meat-packer, and consumer.

## Project Size

Four-H members must produce and market at least one steer per project year or unit. A calf will usually eat more when fed with another calf than it will when fed alone. Therefore, you should feed more than one unless you have a brother or sister who is also feeding a calf. As you learn more about steer feeding and the economics involved, you may wish to expand the project size. Older 4-H members with adequate planning and resources may expand into a full-scale feedlot or feeding program.

## Financing the Project

Four-H members should either obtain a loan by note from a bank or other lending service to finance the purchase price of the steer(s) or sign a note with a parent on the same basis. The project record should indicate an interest charge. Four-H members using a loan should seriously consider obtaining mortality insurance on the animal. Other expenses including feed may be paid for by the member on a cash or charge basis. There are no "free" items in the cost of production even including the labor expended by the club member. Homegrown feeds should be charged at a fair market price. Most feed companies will carry the feed cost until the project is completed and the animal is sold.

Purchase price of steer and feed costs are the major items in the cost of production. Labor cost is another major factor in the actual operation of a feedlot. The 4-H member should allow for \$150 to \$175 purchase price and a feed cost of \$100 to \$120.

In planning for the project, the club member and parent or leader should project expected costs and returns. For example, if you pay 30¢ per pound for a 500 lb. feeder and your projected feed costs are \$100, your total feed and purchase cost would be \$250. This would mean that your 1,000 lb. finished steer would have to bring at least \$250 to break even on feed and purchase expenses. The steer project provides one of the best 4-H learning programs available, but is not a profitable one, dollar-wise. At best, club members can hope to earn only a few dollars or break even by feeding only a few head. Large feedlots make money on volume. For example, a \$5 profit per head on 10,000 steers would be \$50,000.

Four-H members make or break on the basis of wise buying and least cost rations. Four-H members should pay no more than current market prices for the feeder and should utilize home-grown feeds and/or commercial type feeding programs. In buying steers, the members should figure the purchase price per pound of live weight. For example, if a member purchased a 500 lb. steer for \$250, the price per pound would be 50¢. Needless to say, when you add a \$100 feed bill, this club member cannot hope to break even.



## Time to Start

Four-H members should allow for a 200 - 240 day feeding period prior to slaughter date and/or show date. Steers for most spring shows should be on feed before October 1. If possible, obtain the exact birth date of your calf. Four-H members should check with their Extension Agent about show dates, entry information, date steer must be on feed, and other regulations. Fall shows are available in many areas and the State Fair in September is open to all 4-H'ers. Experienced 4-H feeders are encouraged to exhibit at the State Fair and at other events including out-of-state shows.

## Facilities and Equipment

Housing for the steer need not be expensive or elaborate, but should be comfortable. Beef cattle like the outdoors. An open stall with a dirt floor in a barn or shed connected with a dry, well - drained lot is ideal. The dirt floor should be covered with straw or some other highly absorbent bedding. Sand may be used for bedding in the summer months. Wet and soiled bedding should be cleaned out on a regular schedule. In the winter, let the steer use the lot and stall as he wishes. Actually, a pine grove or brush thicket will be preferred by the steer for winter shelter. In summer months, the shed needs ventilation and the steer needs a shaded area; keep the steer inside a shaded, cool stall during the day and turn him out at night.

A lot approximately 50 by 100' will give the steer plenty of room for exercise. Larger lots may be used, provided the steer is halter broken and easy to catch. The shed should have a gate, so that the steer may be brought in for haltering.

The steer will need a feedbox — make it 6" deep, at least 12" wide, and 18" long. The top of the box should be 12 to 16" above the floor. Hay should be placed in a hay rack located away from the feedbox. Spaces should be built in the feedbox for a free-choice, simple mineral mixture and iodized salt. Keep the feedbox clean — would you like to eat out of a dirty plate?

A supply of fresh water should be available at all times. A water facility may be provided by use of a stream, watering trough, or pail in a rack in one corner of the stall.

Other basic equipment needed: rope halter, show halter, buckets, curry comb, flat comb, show stick, rice root brushes, scotch comb, and first aid equipment.

## Selecting and Purchasing a Feeder Calf

You should start the project with a steer calf weighing approximately 500 lbs. If possible, determine the growth rate (total pounds ÷ total number days of age) of the steer prior to purchase. For most spring shows, steers should have been born between November and March. Growthier breeds such as the Charolais do not reach choice slaughter grade as early as the British breeds. Therefore, avoid buying the British breeds (Hereford, Angus, Short-horn) in the older age bracket because they may finish out too early. Likewise, avoid buying exotic (imported) breeds that are too young because they will not reach the desired grade by show and/or market time.

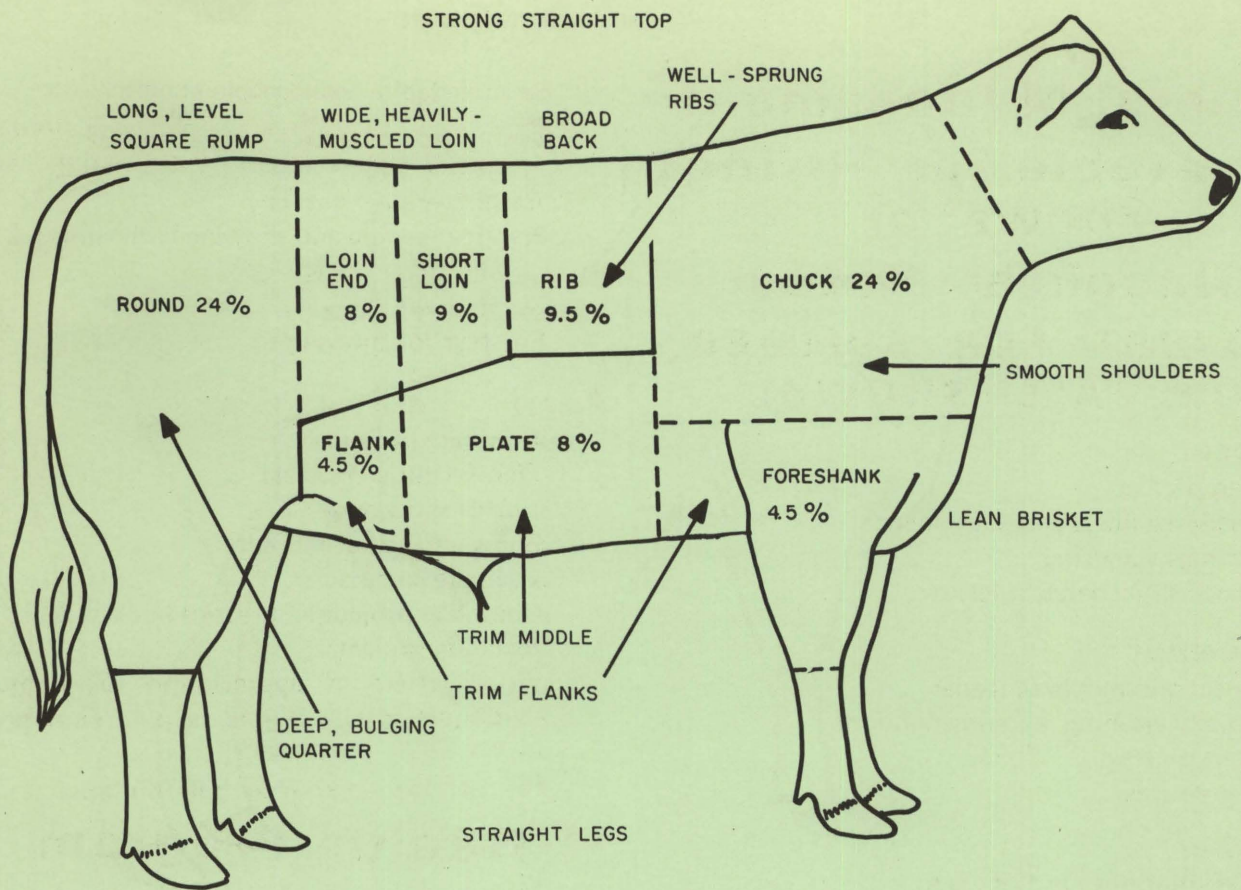
A November calf should weigh no less than 660 lbs. by October 1 and should have a weight per day of age of 2.35 lbs. or more. A March 1 calf should weigh at least 500 lbs. and have a weight per day of age of at least 2 lbs. A January calf should have a 2.2 lbs. weight per day of age by October 1.

The steer should grade choice or better as a feeder and should be a large, healthy, growthy, stretchy, muscular calf which looks like a calf (not mature looking) and appears to have the ability to grow and gain. Short, dumpy calves or light-musclcd calves should be avoided. If possible, it would be good to look at the sire and dam and to check performance records of the sire and dam and their offspring.

The steer may be grade, purebred, or cross-bred. Steers may be purchased from purebred or commercial farms or through special feeder sales. Ask an experienced cattleman to help you select and purchase your feeder.

Keep in mind that the most expensive cuts of beef come from the rib, loin, rump, and round. Therefore, when selecting a calf look for a calf with a wide, heavily-musclcd loin, long square rump, and deep bulging quarters.





**Body Parts and Related Wholesale Cuts in the Beef Steer** — The high priced cuts consist of the round, loin, and rib; while the lower-priced cuts are the chuck, brisket, foreshank, plate, and flank.

Comparison of Weight and Retail Value of Closely Trimmed Retail Cuts

<u>Closely Trimmed Retail Cuts</u>	<u>Percent of Live Weight</u>	<u>Percent of Carcass Weight</u>	<u>Percent of Retail Value</u>
Round			
Rump, boneless	2.2	3.5	5.7
Inside round	2.8	4.5	7.6
Outside round	2.9	4.6	7.6
Round tip	1.6	2.6	4.5
Loin End			
Sirloin	5.4	8.7	14.3
Short Loin	3.2	5.2	10.2
Rib, Short Cut	3.8	6.2	9.1
Chuck			
Blade chuck	5.8	9.4	7.6
Chuck, arm, boneless	3.7	6.1	7.3
Brisket, boneless	1.4	2.3	3.1
Others			
Flank steak	0.3	0.5	0.8
Lean trim	7.0	11.3	11.9
Ground beef	7.6	12.2	9.1
Fat	7.9	12.7	0.5
Bone	6.1	9.9	0.1
Kidney	0.2	0.3	0.2



# General Management Timetable for Spring Shows or Slaughter Dates (ADJUST FOR SUMMER OR FALL SHOWS)

## August

- Plan project
- Ready facilities and equipment
- Arrange financing
- Check show dates, rules, etc.

## September

- Select and purchase feeder
- Follow weaning recommendations
- Start on feed
- Gentle steer

## October

- Last month to put on feed
- Check with veterinarian about health and internal parasites
- Halter break
- Check on show entry date
- Treat steer for grubs prior to November

## November

- Bring steer to full feed
- Continue halter work
- Keep records up - to - date

## December

- Check weight or gain. Steer should be gaining 2.3 lbs. per day.
- Be sure you are ready for winter weather.

## January

- Continue program
- Keep records up - to - date
- Visit other 4-H steer feeding projects
- Be on guard for lice
- Trim feet as needed

## February

- Continue program
- Check show equipment
- Check on possible buyers

## March

- Continue program
- Check weight and gain

- Be sure steer is manageable at halter
- Show steer to visitors by haltering, leading outside stall area, setting steer up, showing
- Wash steer on warm day
- Practice leading and showing with show halter and show stick
- Secure buyer(s)
- Fit steer for showing

## April - May

- Continue program
- Plan for show and sale
- Fit for show and sale
- Show and sell or market
- Evaluate carcass
- Complete project and record book
- Evaluate project
- Write letters of appreciation to sponsors, donors, other people helping with project
- Pay off loan and feed bills on time

## Health Program

1. Provide safe, clean feedlot and stall.
2. Bed properly.
3. Learn and follow good weaning management.
4. Be sure calf has been vaccinated for blackleg and malignant edema shortly before weaning.
5. Speak with your veterinarian about preventive medicine, prior to buying a steer.
6. Be sure calf has been dehorned and castrated (and healed) prior to delivery.
7. Check with your veterinarian about any need for internal parasite control.
8. Clean feedbox and waterers frequently.
9. Provide proper nutrition including ration, water, salt, and minerals.
10. Treat for grubs between September and October prior to November 1.
11. Provide fresh air and exercise.

## Feeding Program

Feed steer twice a day. Keep bunkers and waterers clean. Start calf out (after weaning) on hay and water, gradually introduce ration, and bring steer to full-feed over a two-week period, according to ration and weight of steer. Cut back on amount fed if steer does not clean up ration between feedings. In case of scours or other ailments, cut back on feed and call in a cattleman or veterinarian for advice.



## SUGGESTED RATIONS FOR 4-H CLUB STEERS

**NOTE:** Economy with satisfactory performance should receive primary consideration. Corn is usually the cheapest source of energy and should be the main ingredient in all purchased feed. Oats, while excellent feed, usually are too expensive to be added to purchased feed. Small grains should be included in rations only if home raised.

**BEWARE:** Expensive feed and an excessive price for the calf contribute to most financial failures of 4-H steer projects. Study your feed cost closely — whenever 9 pounds of feed costs more than you expect for one pound of steer at sale time, you are in economic trouble. Complex rations are usually slightly superior, but economically unjustified.

### **Ration 1** - full feed — corn silage

- 2# - 50% protein supplement
- 1# - corn per 100# body weight

### **Ration 2** - full feed plus 2# legume hay or 5# silage

- 2a. 89# - corn and cob meal  
11# - 50% protein supplement  
100#
- 2b. 87# - corn and cob meal  
13# - 44% S.O.M.  
100#

### **Ration 3** - full feed with 4 # legume hay or 10# silage

- 3a. 92# - cracked, shelled corn  
8# - 50% protein supplement or 10#  
44% S.O.M.  
100#

- 3b. 92# - whole, shelled corn  
8# - 50% protein supplement, small pellets  
100#

### **Ration 4** - (Home raised) feed with 4# clover hay or 10# silage

- 46# - cracked corn
- 46# - cracked barley
- 8# - 50% protein supplement or 9# 44% S.O.M.  
100#

### **Ration 5** - (Home raised) feed with 4# legume hay or 10# silage

- 60# - corn
- 32# - oats
- 8# - 50% protein supplement or 9# 44% S.O.M.  
100#

### **Ration 6** - (Home raised) feed with 4# clover hay or 10# silage

- 6a. 46# - cracked corn  
24# - oats or barley  
6# - 50% protein supplement or 7# 44% S.O.M.  
24# - wheat  
100#
- 6b. 69# - cracked corn  
23# - wheat  
8# - 50% protein supplement or 9# 44% S.O.M.  
100#

### **Ration 7** - (for self-feeding and beginners. Use home raised ingredients as far as possible)

- 25# - ground, legume hay
- 54# - cracked corn
- 8# - molasses
- 13# - 44% S.O.M.  
100#



### **Mineral:**

- a. Keep trace mineral salt before cattle.
- b. Keep a calcium - phosphorus mineral before cattle.

### **Hormones:**

- a. Administer one 12 mg. of stilbestrol at beginning and repeat in January for spring shows.
- b. Or feed 10 mg. of stilbestrol daily (stop 7 days before slaughter).

### **Protein Supplements:**

- a. Soybean oil meal is usually the best buy in Virginia and also the best quality protein of all oil meals.
- b. 4-H Club members will find commercial 50% protein beef supplements to be the most practical way to supply protein, vitamin A, and mineral to rations.

### **Forages:**

- a. Legume hays are usually more desirable for calves. Avoid feeding alfalfa with barley — it sometimes causes bloat.
- b. 2 1/2 lbs. of corn or grass silage will replace 1 lb. of hay for supplying roughage and is in some respects better.

## **Public Relations**

Be a good businessman. Keep everyone informed and visit the people supporting your work including breeder, feed supplier, veterinarians, leader, parents, banker, buyer, meat retailer, and others. Develop your own news stories, radio

broadcasts, and TV appearances. Furnish progress reports and pictures to the people supporting your project. Be sure to write letters of appreciation to sponsors and supporters including donors of various awards. Pay your bills on time! Establish a good credit rating. Promote the beef industry! Plan to participate in industry meetings, fairs, shows, sales, tours, and educational programs.

## **Related Projects and Activities**

Explore your learning and leadership opportunities in other 4-H programs and in the beef project.

### **Some 4-H Activities**

Judging  
Demonstrations  
Exhibits  
Fairs  
Tours  
Exchange programs  
Camp  
TV projects  
Field days

### **Some Related 4-H Projects**

Other Animal Science Projects  
Career Exploration  
4-H Member Leadership  
Let's Start - A - Business  
Veterinary Science  
Plant and Soil Science  
Field Crops Science



MONTHLY RECORD OF STEER PROJECT

Beginning \_\_\_\_\_ 19 \_\_\_\_ Ending \_\_\_\_\_ 19 \_\_\_\_

<u>Rations*</u>	<u>lbs./day</u>	<u>lbs./month</u>	<u>Cost/lb.</u>	<u>Total Cost</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Pasture: No. days in month \_\_\_\_\_ X No. calves \_\_\_\_\_ = Total days @ 7¢/day = \_\_\_\_\_  
 Total Monthly Feed Cost = \_\_\_\_\_

What I have done this month: Tell about things you did with your calves and tell about club activities in which you took part during the month.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Beginning \_\_\_\_\_ 19 \_\_\_\_ Ending \_\_\_\_\_ 19 \_\_\_\_

<u>Rations*</u>	<u>lbs./day</u>	<u>lbs./month</u>	<u>Cost/lb.</u>	<u>Total Cost</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Pasture: No. days in month \_\_\_\_\_ X No. calves \_\_\_\_\_ = Total days @ 7¢/day = \_\_\_\_\_  
 Total Monthly Feed Cost = \_\_\_\_\_

What I have done this month: Tell about things you did with your calves and tell about club activities in which you took part during the month.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\*List each type feed you used such as corn, soybean oil meal, mixed feed, corn silage, clover-grass hay, etc.



PROJECT PICTURES  
(Side View)

Picture at beginning of project  
Date Picture Taken \_\_\_\_\_

Picture at end of project  
Date picture taken \_\_\_\_\_

TABLE A. Livestock Purchased and Sold

Kind of livestock	Date of Birth	Purchases				Sales			
		Date	Weight	Price/lb.	Total	Date	Weight	Price/lb.	Total
TOTALS				\$	\$			\$	\$



TABLE B. Value of Prizes and Other Support

Type of prize or support	Date	Placing	Premium
TOTAL			

TABLE C. Inventory of Purchased and Owned Supplies

Kind of Equipment or Supplies	Value at Start of Project	+	Cost of equipment purchased during project	-	Value at end of project	=	Expenditures for current year (Can be + or -)
Example: Clippers owned	\$20.00	+	\$0	-	\$20.00	=	\$0
Example: Purchased Shampoo	\$0	+	\$3.00	-	\$ 1.00	=	\$2.00
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
		+		-		=	
TOTAL							\$







## MARKET BEEF ANALYSIS

### I. Financial Summary

- |  |          |          |
|--|----------|----------|
| 1. Value of animal sold (table A)                      | \$ _____ |          |
| 2. Value of prizes and awards (table B)                | \$ _____ |          |
| 3. TOTAL RECEIPTS (add line 1 and 2)                   |          | \$ _____ |
| 4. Cost of animal (table A)                            | \$ _____ |          |
| 5. Feed costs (total of monthly costs)                 | \$ _____ |          |
| 6. Project cost for equipment (total table C)          | \$ _____ |          |
| 7. Interest charge (table D)                           | \$ _____ |          |
| 8. Other costs (table E)                               | \$ _____ |          |
| 9. TOTAL EXPENSES (add lines 4,5,6,7 and 8)            |          | \$ _____ |
| 10. INCOME OVER EXPENSES (subtract line 9 from line 3) |          | \$ _____ |

### II. EFFICIENCY OF PRODUCTION

- |   |               |
|---|---------------|
| 1. Weight of animal at start of project (table A)   | _____ lb.     |
| 2. Weight of animal when sold (table A)   | _____ lb.     |
| 3. TOTAL GAIN (subtract line 1 from line 2)   | _____ lb.     |
| 4. Days animal was on feed (table A)  | _____ days    |
| 5. Daily gain on feed (divide line 3 by line 4)   | _____ lb./day |
| 6. Total feed cost (line 5, Section I.)   | \$ _____      |
| 7. Feed cost per pound of gain (divide line 6 by line 3, and multiply this quotient by 100) | _____ ¢/lb.   |
| 8. Total cost per pound of beef sold (divide total expenses by weight of animal when sold)  | _____ ¢/lb.   |



III. Carcass information (Ask leader, Extension Agent, or meat grader to assist)

1. Live weight \_\_\_\_\_
2. Carcass weight \_\_\_\_\_
3. Dressing percentage \_\_\_\_\_
4. Ribeye area \_\_\_\_\_ square inches
5. Fat cover over rib \_\_\_\_\_ inches
6. Percent kidney and pelvic fat \_\_\_\_\_
7. Percent boneless retail cuts (cutability) \_\_\_\_\_
8. Carcass grade \_\_\_\_\_
9. Carcass weight per day of age \_\_\_\_\_
- \*10 Pounds lean cuts per day of age \_\_\_\_\_
11. Feed cost per pound of carcass weight \_\_\_\_\_
12. Per pound value of carcass \_\_\_\_\_

\*Carcass wt. per day of age x % cutability

## Project Evaluation

Describe in a few sentences the evaluation you place on the project in terms of overall 4-H objectives, learning, leadership development, and economic production of beef for the consumer. Discuss plans for new projects and learning opportunities.



# 4-H Activities Record

## I. Club Responsibilities

Number of meetings your club held this year. \_\_\_\_\_

Number you attended. \_\_\_\_\_

Offices held in 4-H club work this year.  
\_\_\_\_\_  
\_\_\_\_\_

Committees you served on. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Did you serve as a 4-H member leader?  
yes \_\_\_\_\_ no \_\_\_\_\_

## II. Project Activities

Projects you completed this year.  
\_\_\_\_\_  
\_\_\_\_\_

Give location for each activity below (Local, L; County, C; District, D; State, S; Regional, R; National, N).

Talks. Give title. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Demonstrations. Give title.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Exhibits. Give name of project.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Judging Contests. Give type.  
\_\_\_\_\_  
\_\_\_\_\_

Showmanship Contests. Give type.  
\_\_\_\_\_  
\_\_\_\_\_

Public Speaking Contests. Give title.  
\_\_\_\_\_  
\_\_\_\_\_

## III. Other Activities

Place a check (✓) beside the following activities and events in which you participated.

- Project tour
- Project workshop
- Judging school
- Fitting and Showing school
- Officer training
- Leadership training
- Community service project
- 4-H Church Sunday
- National 4-H Club Week
- County Camp
- Conservation Camp
- TV Camp
- Electric Congress
- State 4-H Congress
- National 4-H Congress
- 4-H Citizenship Short Course
- 4-H Citizenship Conference
- Achievement Day
- Health check-up by doctor
- Dental check-up by dentist
- News articles written, No. \_\_\_\_\_
- Radio programs, No. \_\_\_\_\_
- TV programs, No. \_\_\_\_\_
- Others \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## IV. 4-H Awards and Honors

List those received this year.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date project completed. \_\_\_\_\_



