STEER
BEEF FEEDING
MANUAL

Revised: June 2005
A Note to Parents and Leaders

You are the most important influence in a 4-H’ers life. As such you can play very important roles in guiding a 4-H’er through a project, making it a pleasant and rewarding experience. This material provides opportunities for a 4-H’er to learn and develop with the help of the County Extension 4-H Coordinator and you. The following are some things you can do to help the 4-H’er get the most out of this project.

1. Become familiar with the material in this publication.
2. Using the information and talking with the 4-H coordinator, help the 4-H’er choose goals that can be fulfilled.
3. Help decide what tools, equipment and supplies will be needed, and help the 4-H’er put the project together.
4. Help the 4-H’er understand and learn the tasks necessary to carry out the planned project. DON’T DO ALL THE WORK YOURSELF!
5. Review the 4-H’ers records occasionally to make sure the records are up to date. This is a very important part of the project and should not be neglected.
6. Discuss the progress of the project and help the 4-H’er recognize the difference between a good job and a bad one.
7. Help the 4-H’er understand where project improvements are needed. Remember, your compliments on a job well done are important.
8. Help the 4-H’er know and evaluate the project and the effort expended on the basis of goals and objectives set.
9. Assist the 4-H’er with establishing long range goals and selecting projects to meet this challenge.
10. AVOID COMPARING THE 4-H’ER WITH OTHERS.
Introduction

This project is designed so that Florida’s 4-H’ers can truly learn by doing. The beef feeding project is intended to help develop useful citizens as well as fill the needs of 4-H’ers who want to learn about the beef cattle business.

Your first experience, after you decide on a beef project, will be to exercise your skill in selecting a calf of correct beef type. As you work with the calf, you will develop a great deal of pride from the results of your selection, feeding, management and care. This is important because pride and success are so interrelated that one almost never occurs without the other.

The wholesome atmosphere of working with other 4-H’ers at the various club meetings, shows and fairs will be invaluable. You will also feel the pressure of competition as you enter the show ring to compare your selection and the results of your work with that of other 4-H boys and girls. This is a lesson in the basics of our American way of life. We live in a competitive society.

Finally, you will need to do some “dollars and cents” accounting on your project. After you record the expenses and receipts, you will summarize the results of your business venture to determine whether you made or lost money on your project. Keep in mind, however, that there is a great deal of benefit to a 4-H’er from a 4-H beef project that cannot be measured in dollars and cents. With a 4-H beef project, you learn by doing.

Upon completion of this project you will be able to:

(1) Select animals for feeding.
(2) Select a least cost ration needed to meet the changing nutrient requirements during the feeding period.
(3) Calculate a conversion rate of feed to pounds of gain.
(4) Determine the length of feeding period required to obtain optimum carcass grade and yield.
(5) Point out the indicators that the animal has necessary finish to produce a desirable carcass.
(6) Calculate cost per pound of gain, pounds of edible product and pounds of edible product per day of age.
(7) Discuss the importance of the above mentioned factors in the economic success of the project.

To accomplish these objectives you will complete the following tasks:

(1) Select a beef animal(s) (preferably at weaning age, 7-9 months) which has the potential to grow efficiently, finish rapidly and produce a carcass grading U.S. Good or Choice. The animal(s) can be fed for 8-10 weeks for marketing as baby beef (weighing 550-650 lbs.) or grown to 700-750 lbs., then full fed to slaughter weight of 1050-1150 lbs.

(2) Select feed that is available from local sources and will meet the animal's nutritional needs at the lowest cost per lb. of gain and lowest cost per lb. of feed.

(3) Keep accurate records of:
(a) daily feed consumption
(b) biweekly weight gains
(c) pounds of feed per pound of gain, daily gain and cost per pound of gain
(d) days off feed (including animal behavior, feces consistency, rectal temperature, etc., treatment given and response)

(4) Obtain a visual estimate of the animal’s grade at the completion of the project in order to determine current market value on foot.

(5) Obtain carcass data on the project animal(s) to calculate the amount of edible beef produced and the cost of producing each pound of edible beef.

Selecting an Animal to Feed

Purchase animals that weigh 500 lbs. or more at 7 months of age (weaning). Since efficient beef production requires rapid growing animals that produce a trim carcass with a minimum amount of feed, try to obtain your animals from breeders who can tell you the sire, dam, date of birth and immunizations given to the animal. Generally, ranchers with this information available know what they are producing and are using superior breeding stock. Lightweight calves cannot be expected to make the gains required to reach show weight in 4 or 5 months.

To have a successful beef project you must start with the right kind of an animal. To start with the right kind of cattle you must know how to select individuals. The following illustration gives some of the more important parts of conformation.
Facilities Needed

A small pen with a feed trough, mineral feeder and water tank or bucket are minimum requirements. The pen should be located so that it is well drained. A natural or artificial shade will make the animals more comfortable. A shelter from the rain is another helpful addition. The facilities may be elaborate or very simple, depending on individual preference and availability.

The feed bunk or box should be approximately 6 inches deep, and 18 to 24 inches wide. The feed bunk or box should be long enough so each calf has about 2 and a half linear feet of feeding space.

A small exercise lot adjacent to the pen where the animal(s) is kept is a good idea. Calves should be turned into the exercise lot every night. Animals kept in muddy, filthy lots do not gain as they should or groom properly. Manure in the stall and pen should be removed and fresh bedding added daily.

A good calf, even though properly fitted, can be a real disappointment in the show ring if it is unruly. You’ll be embarrassed too if you cannot control your calf to show its best features. Start training early. Most successful boys and girls begin training their calf as soon as they get it home after purchasing. A firm but patient hand will soon accomplish this challenging task.
Starting the Show Steer

(if not planning to exhibit or show your animal, move to the next section)

One of the very first tasks that you must do when you get your steer is to put a halter on him. In fact, you should halterbreak the calf before he is placed on feed. The reason for this is that halterbreaking a steer interrupts the daily routine and may cause the steer to temporarily “go off feed.”

Once he is gentled, start breaking him to lead in his pen. Always lead from the left side of the calf. Be careful to never let your calf get away from you while you are leading him. If he does, he may try to get away every time. If he succeeds in getting away from you, the calf begins to think that he is the “boss” and it may take several weeks to break him of this habit. It is better to work with your calf five minutes each day than one long period each week. By doing this, he will become more accustomed to it and it will be more of a routine with him.

After the calf has learned to lead in his pen, take him outside to get him acquainted with strange objects such as doorways, cars, loud noises, show sticks, concrete and strangers. Never be afraid to let visitors look at your calf and handle him, as this is a good experience. Also, be sure that you use a show halter when training your calf to lead so that he is accustomed to it before the fair.

After your calf is halterbroken and has learned to lead, the next step is to teach him to stand squarely on all four feet and legs. To do this you will need to use a show stick to position his feet correctly. To get him to move his foot forward, put the show stick behind his dew-claw and gently pull the foot forward. To get him to move his foot backwards, press the stick between the toes in the cleft of the foot and gently push to the rear. By teaching the animal to stand correctly, his good points will be emphasized.

Preparing for the Show

The steer should be brushed daily. Brushing makes the hair coat glossy and keeps the hair free from dirt. The last brushing each day should be against the lay of the hair. The hair on the top line should not be parted down the middle, but should be brushed forward toward the neck. This aids in grooming the calf by training the hair to stand.

Most steers are shown with a chain halter that has a leather lead strap. It is absolutely necessary that this type of halter be used on the steer at least a month before the show. If used only on the day of the show, the exhibitor will be disappointed as the steer will fight the halter and will not show to good advantage.
Strangers often frighten the calf. Cattle can easily detect a person or persons that are strangers. To avoid this, invite friends and neighbors to walk near your calf or brush him. This is necessary so that the steer will not become upset when you take him to the show.

About 10 days prior to the show, add a small quantity of molasses to the drinking water each day. This will help insure that the steer will drink after arrival at the show. Steers often will refuse to drink strange water. A steer will frequently "go off feed" from being hauled. Therefore, feed the steer very lightly on the day he is hauled to the show.

Loading the steer can be dangerous for both the calf and the people leading him. You can improve the steer's footing by using sand for bedding when hauling him to the show. The sand can be covered with hay or straw.

Take a rope halter to the show or use a neck rope with a clip to tie the calf prior to the show and to hold him while washing. Do not wash the calf on show day. Instead, wash him the previous day and use plenty of bedding to keep him clean. Calves washed on the day of the show will have a gaunt appearance. Avoid overworking your calf in preparation for the show. Too much activity causes him to become tired and not show to his best advantage.

**Protect your Calf's Health**

If the calf has not been vaccinated previously for Blackleg, Malignant Edema, IBR, PI3, Leptospirosis and Pasturellas, he should be immunized as soon as you get him. Also, he should be treated for internal parasites. The use of a product to control cattle grubs should be considered, especially if you are starting the project in the summer or early fall. Flies can be controlled to some extent by keeping the stall and exercise lot clean. If the calf is observed scratching or rubbing in the area of the neck or shoulder, he should be closely examined for lice. Dust bags are available which will help control both flies and lice. However, no control measures or materials are any better than a good sanitation program.

**Feeding Your Calf**

The type of ration which you select for your calf will make a big difference in how rapidly he gains. A balanced ration and clean, fresh drinking water available in clean quarters are essential for a healthy, fast growing steer.
When selecting your ration, first become acquainted with feed supplies that are available locally. Generally, locally grown feeds are less expensive than feeds which are grown elsewhere and shipped into your area. You should also consider the characteristics of your calf as you select the ration. For example, experience over the last few years indicates that calves with some continental blood (Exotic crosses) must be fed longer on a higher energy ration than the straight English blood cattle in order to reach the same grade.

Many feeders prefer to use a variety of feeds in the ration to meet all the animal nutrient needs. Each animal should be fed a ration which contains concentrates, roughages, proteins, vitamins, minerals and water. Each of these nutrients has a reason for being in the ration. Your job is to make certain that these nutrients are supplied in an amount needed by the animal. Concentrates supply the energy the animal needs to grow and develop. Roughages help keep the animal's digestive system working properly. Protein is essential for good muscle development. Protein supplements such as cottonseed meal and soybean meal and high quality legume hays are major protein sources, whereas grains furnish somewhat lesser quantities of protein. Your steer ration should contain 11 to 12 percent protein. Commercial supplements containing urea, with the urea supplying not more than 33 percent of the protein equivalent, can be used if fed according to instructions.

Vitamins and minerals are important in bone development and maintaining the general health of the animal. Keep a complete mineral supplement and loose plain salt before the calf at all times. This is important. The supplement which you select should contain at least 8 percent phosphorus. Vitamin A is essential in the ration and should be fed at a rate of 4000 units per hundred pounds of live body weight. Vitamin A is inexpensive and can be secured from a local feed mill. Use a low potency supplement for ease in mixing with your feeds. The calves may be given an injection of Vitamin A, if you prefer, as an alternative to feeding it with the feed. If injected, give the calf one million units each time injected:
Some finishing ration suggestions are:

a. Citrus pulp ........................................... 21 lbs.
    Cotton seed hulls ................................. 7 lbs.
    Ground corn ....................................... 60 lbs.
    Soybean meal ..................................... 11 lbs.
    Vitamin mineral premix ......................... 1 lb.
    + hay, water, salt and mineral available at all times
      100 lbs.

b. Ground corn ....................................... 65 lbs.
    Citrus Pulp ....................................... 25 lbs.
    Cottonseed meal .................................. 10 lbs.
    + hay, water, salt and mineral available at all times
      100 lbs.

c. Corn .................................................. 45 lbs.
    Citrus pulp ....................................... 28 lbs.
    Cottonseed hulls ................................. 14 lbs.
    Soybean meal ..................................... 8 lbs.
    Molasses .......................................... 4 lbs.
    Alfalfa meal ...................................... 2½ lbs.
    Salt ................................................ ½ lb.
    Vitamin mineral premix ......................... 1 lb.
    + hay, water, salt and mineral available at all times
      100 lbs.

d. Ground corn ....................................... 60 lbs.
    Citrus pulp ....................................... 20 lbs.
    Omelene .......................................... 10 lbs.
    Cottonseed meal or Soybean meal .............. 10 lbs.
    + hay, water, salt and mineral available at all times
      100 lbs.

If you plan to use pulp in the ration try to purchase enough to last the entire feeding period. This is necessary because pulp may vary in quality. In any event, try to feed the same brand of pulp. Record your feed purchases on Form C.

If implants or growth stimulants such as Ralgro or Synovex are used, make sure that they have been implanted according to directions. There is a limit as to the number of days prior to slaughter that these products may be used. Read the label. Properly used, these products are very useful.

**How Is Your Calf Gaining?**

Weight gain is the most important consideration in feeding cattle, closely followed by feed efficiency. Record the data on the Animal Weight and Feed Conversion Record (B) at regular bi-weekly (14 days suggested) intervals. For you to better visualize the gain and feed conversion changes, schedules I and J have been included for you to graph your animal's progress in these areas.

Unfortunately, very few youths have access to scales to determine how their animals are gaining. However, there is a method available to calculate the weight of beef cattle by the use of body measurements. This is done as follows: Make at least three independent measures and use the average of the three measures in your calculations.

1. Measure the length of body, taken from point of shoulder, to point of rump (pinbone) in inches. (A-B diagram)

2. Measure the circumference (heart girth). Make measurement from a point slightly behind shoulder blade, then over the fore ribs and under the body behind the elbow. (C in diagram)

![Diagram of cattle showing measurements](image)

When these values, in inches, are determined, use the following formula to calculate body weight:

3. Heart girth \( X \) heart girth \( X \) body length + 300 = weight in pounds.

**Example:**

Heart girth (76") \( X \) heart girth (66") \( X \) body length (66") + 300 = weight

\[ 76 \times 66 = 5,776 \]
\[ 5,776 \times 66 = 381,216 \]
\[ 381,216 + 300 = 1,270 \]

Another alternative is to use a commercially available tape which has been calibrated to estimate the animal's weight on the basis of a heart girth measure.
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