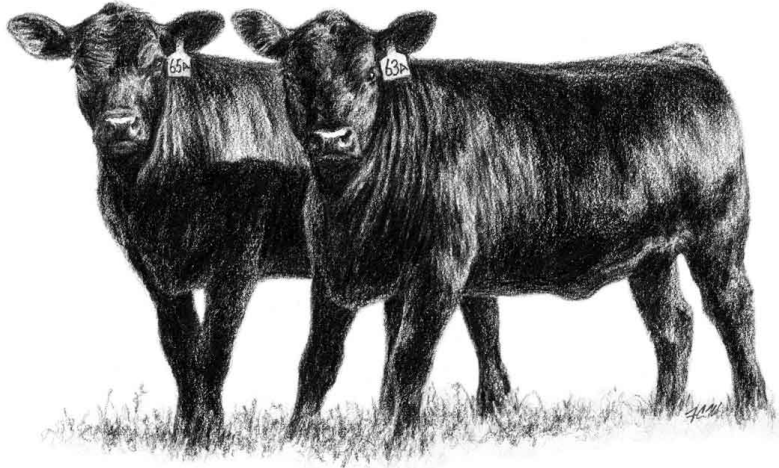


# Johnston County 4-H Heifer Project Guide



Adapted by Dan Wells from: *Introduction to 4-H Beef Heifer Project*,  
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Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

### **Things You Should Learn**

1. How to choose a heifer.
2. How to feed and properly develop a heifer from weaning to calving.
3. How to recognize the important traits of a beef heifer.
4. How to treat your heifer for external and internal parasites.
5. How to vaccinate your heifer.

### **Things You Should Do**

1. Own, feed, grow and develop one or more heifers.
2. Keep and complete the records on your beef heifer project.
3. Take part in livestock judging schools.
4. Regularly attend and participate in 4-H club meetings.
5. Give a talk about your project.
6. Give a demonstration about what you have learned.

### **Selection**

The type of heifer you select to start your project will have a big influence on your success. If you start with a good producing heifer, your future herd will be a good one. Selection of a beef heifer for a project animal should be based on the financial situation of your family, available project animals, and the farm situation. A breed that is right for your farm should be chosen.

The breed should also be popular and practical in your area. If the heifer is to be shown, you will need to know the age classification that is standard in your county, district and state shows.

Probably the best time to select a heifer is in the fall when most breeders are weaning their calves. Most beef producers will not wean their calves until they are seven to eight months old. A heifer chosen at this time gives you the chance to learn about feeding, managing and developing a breed cow from a weaned calf. There will also be a larger number of heifers to choose from.

When selecting a heifer, visit several reputable breeders, and learn what kind of heifers they have and how much they cost. Most breed associations hold their yearly sales from December through March and usually sell heifers that would be good for a project.

In some shows, a heifer must be registered. If you are buying your project heifer from a purebred breeder, study her pedigree. Some lines of cattle are not only more popular, but are also more productive than others. If you do not know about pedigrees, get a local Extension agent to help you. Check the tattoo of the heifer with the registration certificate. Be sure that ownership is transferred to you.

In selecting a heifer, you should consider several traits; growth, structural correctness, femininity and muscling.

*Growth Rate*-Growth is a highly heritable trait and is related to feed efficiency (pounds of weight gained per pound of food fed.) Because of this, emphasis should be placed on growth. If possible, look at the sire and dam (the father and mother of the heifer.) From this you can get a good idea of whether or not the heifer will develop into a desirable breeding animal. Also compare calves by the same sire with the heifer

you're considering. Chances are that if your heifer comes from a good herd, she will develop into a good cow. Weight per day of age is the best way to tell how much a heifer will grow in the future. The following average weights are intended as guides in choosing heifers of the British and Continental breeds:

	British	Continental
7 months	450-500 pounds	500-550 pounds
12 months	600-700 pounds	650-750 pounds
15 months	650-800 pounds	700-850 pounds

*Structural Correctness*-Soundness is needed for efficient beef production, as well as showring performance. Strong feet and legs are necessary (figures 3 and 4 show examples.) Beef cattle are kept to use forages that would otherwise be wasted. To do this they must often travel long distances over rough territory. When the bone structure is weak, stress or pressure on certain muscles and tendons of the body can cause breakdown of the muscles, joints and tendons. This means that the bone weakness can shorten the productive life of a cow. Heifers with strong feet and legs are better able to graze many acres and are more likely to have heavier calves. They will stay in the herd longer than heifers with weak bone structure. A heifer should also be near level down her topline, or spine. A roached or dipped topline indicates structural weakness that can affect a cow's productivity.

*Femininity*-Reproductive efficiency is more important than anything else if you want to make money in the beef cattle business. A heifer should be selected from a herd with a high calf-crop percentage (ideally 90% or above.) Ask to see the calving dates of the heifer's dam. If the dam has a record of late calving compared to the

other cows in the herd, be cautious about selecting the heifer.

A feminine appearance usually means reproductive efficiency. Pick heifers that are neat and trim and look like females. Avoid coarse, masculine looking heifers. Check the heifer's dam to see if she looks feminine.

*Muscling*-A heifer should contain adequate muscling. After all, the end product of the cattle business is meat, and meat is muscle. Look for heifers that have a wide top shape, indicating a well-developed loin muscle. Also select heifers that stand and walk with a wide base; a wider stance indicates a greater degree of muscling. Be careful not to confuse muscle with fat! Check the udder, tail head and brisket for fat deposits. An overly fat heifer may have reproductive problems down the road.

### **Growth and Development of the Heifer**

A definite feeding and management program should be planned to take a heifer from weaning to breeding to calving at two years of age. Proper growth and development are important. Fattening the calf up too much will hurt future reproduction and milk production.

Homegrown feeds can be used to feed the heifer. Protein and mineral supplements may be the only feed you need to purchase. Heifers born during the late winter and early spring are normally selected in the fall following weaning. Refer to the table on typical weights for heifers of this age. These heifers should be fed to gain between 1 to 1.5 pounds per day through the winter and early spring until March or April,

depending on the breeding date. The following rations should bring about these gains.

1. Full-feed legume-grass hay (approximately 10-12 pounds per day) plus 1% of body weight of ground whole ear corn.
2. Thirty-five to forty pounds of corn silage plus 2 pounds of 32% protein supplement or its equivalent.
3. Twenty-five pounds of corn silage plus hay free choice and 1 pound of protein supplement.

Heifers wintered on these rations should weigh about 65 % of her expected mature weight, and be about 15 months old and ready for breeding around April 1. Breeding heifers to calve as two-year olds presents some problems, but the increase in lifetime production, as well as lower feed costs is more than enough advantage to outweigh problems.

You should breed your heifer to the best possible bull from her breed. Many breeders are very willing to help 4-H'ers breed their heifers artificially. The breeder that you bought your heifer from may give you breeding privileges. If your farm already has cattle, you may select one of your sires to breed your heifer. You should make arrangements to breed your heifer 45 to 60 days before the actual breeding date.

After breeding, the heifer should be put on quality pasture and/or fed to gain 1.25 to 1.5 pounds per day up until 60 days before fall show

season. At this time the heifer's feed should be increased until she is gaining 1.5 to 2 pounds per day. This will add some extra "bloom" and conditioning which will give the heifer increased "eye appeal" at the shows. Be careful and do not allow her to get fat. If a heifer gains over 2 pounds per day during this period, she will probably get too fat which may hurt her future productivity. The amount of extra feed needed to put this extra gain and bloom on the heifer will vary, depending on the available pasture and the condition of the heifer. A dry lot ration that can be fed to put on the gain could be made up of five to six pounds of cracked corn, two to three pounds of crimped oats, and 1.5 pounds of 32% protein supplement.

A heifer can use more pasture in the ration than steers; this intake might need to be reduced as show time approaches so she will look trim. Probably the best guide for the growth and development of a heifer is a set of scales. Many county livestock associations own scales and are glad to let 4-H members use them. After the shows, the heifer should be placed on good quality pasture and the concentrates should be gradually removed from her ration. The heifer should gain about .5 to 1 pound per day until the wintering period.

The heifer always needs a supply of fresh, clean water. Minerals and salt should also be provided on a free-choice basis. Use a small box with two compartments; one for salt and the other for a mineral mixture.

If the salt and mineral box is outside, it should be protected from rain.

### **Shelter**

Housing for a beef heifer does not need to be expensive or elaborate, but it should be comfortable. A roomy shed with a dirt floor close to a dry, well-drained lot would be ideal. Provide 35 to 40 square feet of shelter per heifer. A lot one-half acre in size should give plenty of room for one heifer when turned out. The dirt floor should be covered with straw, shavings or sand in the summer. Wet and soiled bedding should be cleaned out frequently and regularly.

During the summer, the shed needs cross ventilation. Sunlight should be kept out of the stall because too much is harmful to the heifer's hair. The heifer should be kept in the shed during the day. Cool air stimulates hair growth. A fan in the shed during the day can help keep the heifer cool and promote hair growth. Shut the heifer out of the shed every night during the summer unless there is a cold rain.

### **Make Sure Your Heifer is Healthy**

Make sure the heifer you select is healthy and comes from a healthy herd. The heifer should be vaccinated for clostridial diseases, such as blackleg and malignant edema. Vaccines are also available for respiratory diseases such as IBR and PI3, and strains of BVD (Bovine Viral Diarrhea.) Respiratory diseases often affect animals that are trailered long distances or subjected to other

stresses, so these vaccinations are critically important.

Flies, lice and grubs are the most common external parasites that affect beef heifers. Flies can be controlled by sanitation, residual sprays, back rubbers and dust bags. Lice and grubs can be controlled by any of the systemic insecticides before November 1. Internal parasites should be controlled through use of a dewormer.

### **Records**

Record keeping is an important part of 4-H projects and the beef cattle business. County, district, state and national 4-H awards are based on project and activity records. Because of this, you should accurately record information about your project and activities.

Activity records should include information about your beef heifer project, other 4-H projects and activities and school and community activities. These records give an account of your accomplishments over the years so they can be judged. These records provide a basis to recognize and reward outstanding members.

Successful cattlemen keep many records. They keep records that will help them improve the performance of their herd. These performance records include birth date, weaning weight, growth rate, fertility, feed efficiency and carcass traits.

Records you might want to keep are birth date and weight, weaning date and weight, date of purchase

and breeding date. It is also important to track amount and cost of any expenses such as purchased hay, feed, minerals, vaccines, medicines, grooming and showing supplies.

### **Questions**

1. What is a heifer?
2. Heifers should weigh what percentage of their expected mature weight when bred for the first time?
3. How old should your heifer be when she delivers her first calf?
4. How much should a heifer gain per day from weaning to breeding?
5. List four examples of feed ingredients.
6. Name two external parasites that may affect your heifer.
7. What is a "sire?"
8. What is a "dam?"
9. What affects profit in beef production more than any other item?
10. Why should you either not select a fat heifer or feed you heifer so much that she gets fat?

### **Possible Related Activities**

#### Subjects for 4-H Club Talks

1. What my 4-H Heifer Project means to me.
2. Why I like a particular breed of beef cattle.
3. My first heifer.
4. Eat more beef.
5. My first beef show.

#### Subjects for 4-H Demonstrations

1. How to select a beef heifer.
2. How to vaccinate beef cattle.
3. How to feed beef heifers.
4. Where do steaks come from?
5. How to keep records.

## **Beef Cattle Terms to Know**

*Average Daily Gain (ADG)*- the total pounds of weight gain divided by the number of days need to make the gain.

*Bull*- Male cattle of any age.

*Calves*- young cattle of either sex, generally less than one year of age.

*Clostridial Diseases*- acute infectious diseases which usually kill cattle. Unvaccinated cattle six to 24 months of age are most susceptible. There of four types of bacteria which cause these diseases.

*Cow*- female cattle that have produced one or more calves.

*Dam*- The mother of a calf.

*Feed efficiency*- the number of pounds gained per pound of ration fed.

*Forage*- herbaceous livestock feed, such as pasture, hay or corn silage.

*Heifer*- female cattle that have not calved.

*Pedigree*- a paper that gives the name of the animal and its parents and grandparents.

*Purebred*- an animal whose parents are of the same breed and are recorded with the breed registry.

*Ration*- the animal's diet.

*Registered*- an animal whose name, along with the names and numbers of its sire and dam, have been recorded by the breed association.

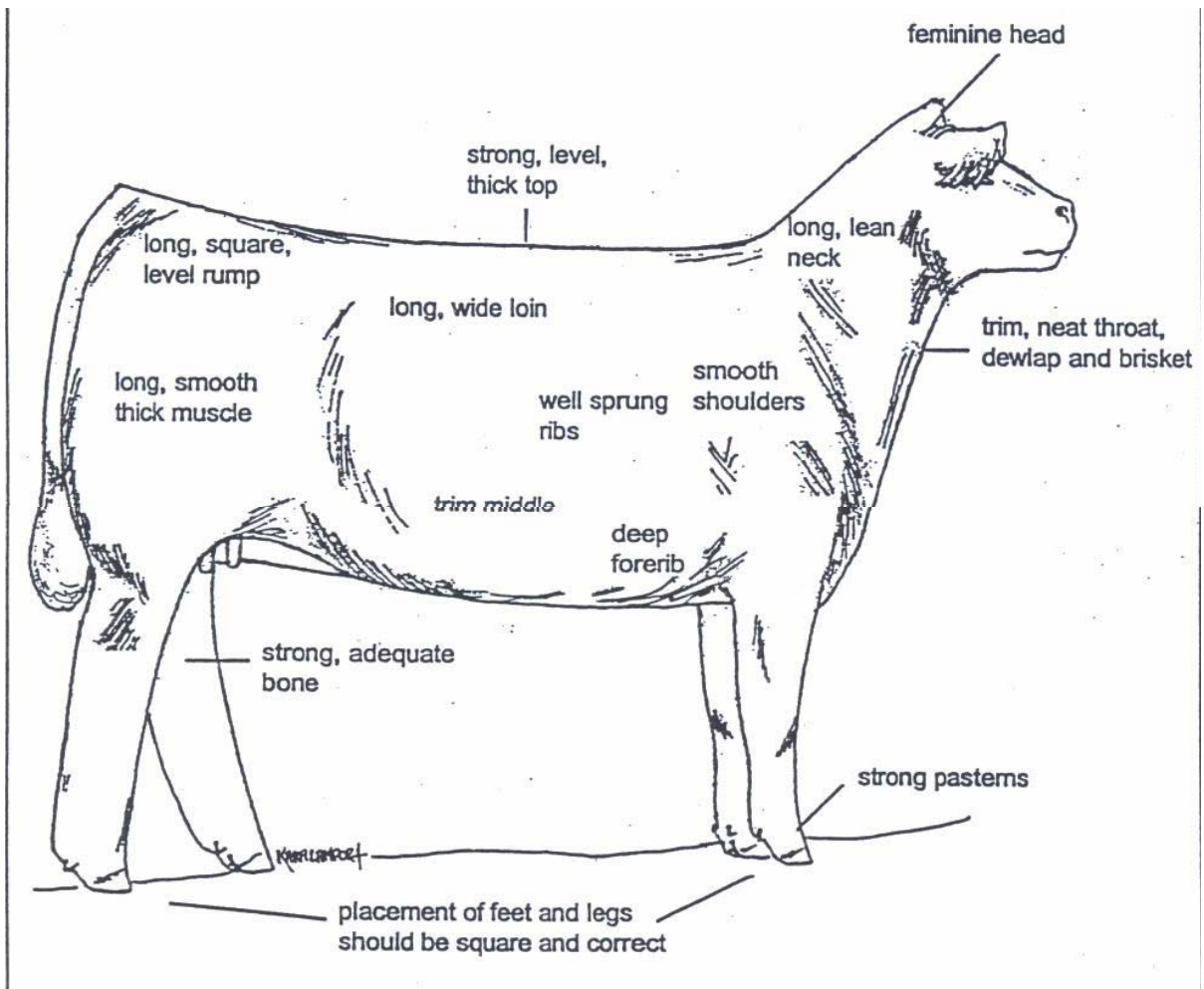
*Ruminants*- animals such as sheep, cattle and goats which have stomachs divided into four parts and chew their cud.

*Sire*- the father of a calf.

*Tattoo*- colored numbers and letters inside the ear for permanent identification.

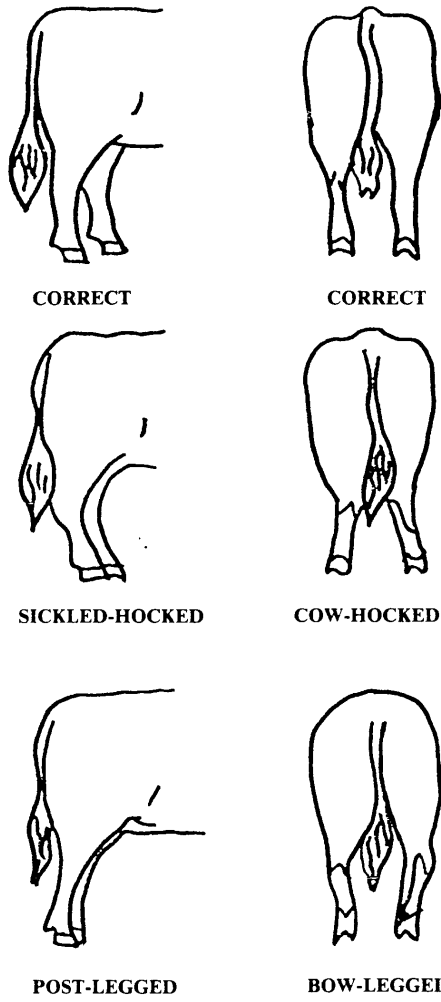
*Weaning*- separating calves from their mothers, excluding milk from their diet.

*Vaccination*- an inoculation with a substance which helps prevent cattle from catching specific diseases.

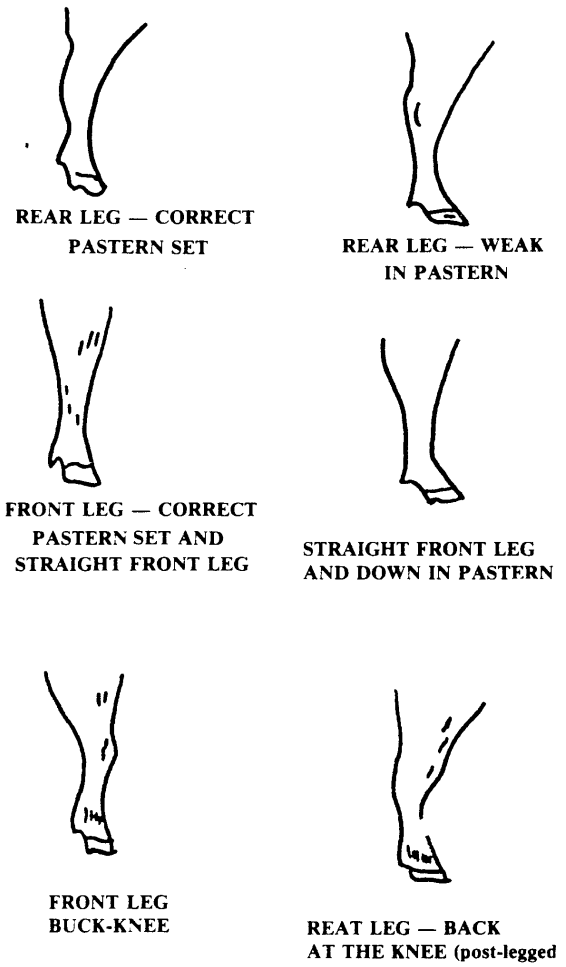


Ideal Breeding Heifer-SDSU





**FIGURE 3**  
**EXAMPLES OF CORRECT AND INCORRECT**  
**LEG SET**



**FIGURE 4**  
**EXAMPLES OF CORRECT AND WEAK**  
**PASTERN AND KNEES**