



# **Beef Replacement Heifer**

## **2022 Manual**

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## **Beef Replacement Heifer Manual for 4-H and FFA Projects in San Luis Obispo County**

### **Introduction**

Raising a beef replacement heifer gives 4-H and FFA youth an opportunity to expand their knowledge in a breeding project related to commercial cattle production. Because of the difference between raising breeding heifers and market steers, this manual, as well as several publications mentioned later, are recommended reading for anyone planning to raise or supervise a heifer project.

Heifers that qualify may be shown in the beef replacement heifer class at the California Mid-State Fair in July. The rules on the last two (2) pages in this manual, along with the Fair's Competition Handbook, state the requirements for the replacement heifer class. Heifers are not required to sell; however, the exhibitors must inform the Livestock Office within one (1) hour following the show in order to remove animal from the sale. A \$25.00 fee will be charged for this procedure. This rule does not apply to champions; all champions must sell.

### **Objectives of the Beef Replacement Heifer Project**

1. To learn the basic management practices of the beef cattle breeding enterprise.
2. To learn the economics of raising a beef replacement heifer.
3. To select and raise heifers that will meet the requirements of local commercial range cattle producers and upgrade their herds.

### **Selection of Heifer**

In deciding which breed or cross breed to buy, keep in mind the differences between breeds in weight per day of age, disposition, fertility, optimum age for breeding, milk production, and the market preference of commercial cattlemen to whom you may later sell your heifer. Larger breeds eat more and usually reach sexual maturity at a later age and are heavier in weight than smaller breeds. They may also be more difficult to handle, especially for smaller members. High-milking breeds raise fast-gaining calves, but they also require more feed to maintain regular reproduction, a possible disadvantage on dry range conditions. Try to stay away from heifers that are extreme in size. Most California cattlemen prefer cows of medium size and milk producing ability.

Select only thrifty, fast-gaining, feminine-appearing heifers that will weigh at least 650 pounds and are twelve (12) to fourteen (14) months old at breeding time (December through February). Heifers must weigh a minimum of 900 pounds at the Fair to be eligible for the class. Consider crossbred heifers since, typically, they wean heavier calves (due to hybrid vigor) than do purebreds. The project rules state that the sire of your heifers must be a beef breed.

Remember that you must train you heifer to lead and to be calm around crowds. Try to avoid selecting a high-headed or "wild" heifer.

Obtain a bill of sale and brand inspection certificate at the time of purchase, as you will need documents when you take your heifer to the Fair.

### **Economics and Financing**

Before purchasing a heifer, find out the prevailing market price for beef heifers. Since most of the heifers from this project will go into commercial herds, it is wise to buy heifers at reasonable prices. The income from commercial cattle is not expected to be high enough for commercial cattlemen to justify paying inflated prices as is sometimes done for registered breeding animals. When selecting project calves from the top of the herd, however, it may be necessary to pay more than market price.

Project loans, which may be obtained from commercial banks, help you pay your bills as they are incurred and provide practical business experience for members. Whether or not a loan is needed, members should formulate a budget of expected expenses before starting the project. Project rules state that accurate records be kept up-to-date at all times.

Consider buying insurance for your heifer. Ask your advisor where it can be obtained.

### **Facilities and Equipment**

If you keep your heifer in a pen, allow about 900 square feet so there will be enough area for exercise. Be certain it is strong enough to keep in the heifer.

If a shelter is used to protect your heifer from winter storms and summer sun, a shed, lean-to, or box stall measuring ten (10) feet by ten (10) feet should be large enough for one heifer, with additional pen space for pasture. It should be well ventilated.

If you graze your heifer on irrigated pasture, about half acre of good pasture will support her during the best growing season, which is March through October. Additional feed will be needed the rest of the year. Remember, however, that it is easy for the heifer to become too fat on irrigated pasture so be careful not to supplement the heifer too much.

Rangeland is a good feed source, but it will take two (2) to ten (10) acres, depending on soil and rainfall, to carry the heifer during the green season (about January to May). Although animals on the range are more independent than those in pens that require regular feeding, members should work with project animals regularly to train and fit them for the Fair and to keep an eye on their health and nutritional condition.

Equipment that will be needed includes a strong rope halter, water and feed troughs, a brush and show equipment. A show halter and a show stick will be needed for showing.

### **Feeding**

Heifers not on range or pasture will need about 2 to 2 1/2 pounds of alfalfa hay or mix of grass or grain hay and alfalfa per 100 pounds of body weight. Oat, barley or grass hay, when substituted for part of the alfalfa hay, can help reduce scours. Additionally, prevent your heifer from becoming too fat as this can impair calving and milk production. Unlimited access to irrigated pasture can lead to an overly fat condition. Heifers should be managed to maintain a continuous rate of growth not exceeding about 1 to 1 1/2 pounds per day depending on breed and skeletal size. They must weigh a minimum of 900 pounds at weigh-in at the Fair in order to qualify for the beef replacement heifer class.

Cereal hay or grass hay can be fed free-choice combined with 1/2 pound of cottonseed meal and 1 to 1 1/2 pounds of barley, rolled or ground. If alfalfa hay makes up to fifty (50) percent or more of the hay ration, the cottonseed meal can be eliminated. If the heifer gains too rapidly and starts to get too fat, reduce or eliminate the barley.

If good range or irrigated pasture is available, no other feed is necessary. When range becomes dry, a protein supplement such as one to one and a half pounds of cottonseed meal fortified with vitamin A is needed. Vitamin A can also be injected.

A mixture of fifty (50) percent loose salt and fifty (50) percent bone meal or dicalcium phosphate should be available to the animal at all times.

#### Feeding Rules:

- ✓ Feed at regular times (once or twice daily).
- ✓ Feed at the same time each feeding.
- ✓ Keep feed and water troughs clean at all times.
- ✓ Do not change feed suddenly.
- ✓ Have plenty of fresh clean water available at all times.

#### **Breeding**

The rules for this project specify that heifers must be bred to calve between September 1<sup>st</sup> and December 1<sup>st</sup> following the Fair. Assuming a nine (9) month gestation period, the heifer should be bred no later than March 1<sup>st</sup>, and preferably, by January 15<sup>th</sup>. By calving in September or early October, heifers should have enough time to cycle for their second breeding season.

Heifers may be bred naturally or by artificial insemination. They should be bred to small bulls of one of the English beef breeds in order to reduce calving difficulty. It is recommended that the bulls be semen tested for fertility. Leaving the heifer with the bull(s) for forty-five days or more should cover a span of at least two (2) estrous cycles.

The heat period, the time during which your heifer will breed, will usually last from twelve to twenty-four hours. The heifer will usually repeat the heat period about twenty-one (21) days until in calf. As a general rule, a heifer should be inseminated within twelve (12) to twenty-four (24) hours after first being observed in heat. The gestation period, the time after breeding until the calf is born, is about nine (9) months or 283 days, depending on the breed.

Owning and managing a breeding heifer is certainly not without risk. A number of problems can delay or prevent conception and calving. Diseases, nutrition, sexual immaturity, genetic defects and physical injuries are some causes of infertility or abortion. For more information about beef cattle breeding, read Cooperative Extension Leaflets 1858 and 2933.

#### **Health**

The accompanying chart describes abortion diseases, which can be a problem in the central coast area. Other diseases to be aware of are mentioned in the 4-H Club Beef Project Manual for leaders. Consult a veterinarian for vaccination and management

recommendations to avoid these and other diseases. Vaccinations for brucellosis can only be done by licensed veterinarians. State law requires that beef heifers over twelve (12) months of age show evidence of calf hood brucellosis vaccination if they are sold within the state for breeding purposes.

Treatment for stomach and intestinal worms may be beneficial, especially for heifers on irrigated pasture. A fecal count for worms is suggested if feasible.

Be aware of possible infestations of parasites such as grubs, lice, ticks, faceflies, and hornflies. If treatment is necessary, carefully follow the directions on the label of the product you use.

Molybdenum toxicity can be a problem on irrigated pastures in San Luis Obispo County. Severely affected cattle scour, lose weight rapidly and change hair color. With mild toxicity, cattle do not gain and perform as well as they should. The problem can be corrected by feeding copper sulfate at the rate of one gram per head per day in a salt-grain mix or liquid supplement. Copper glycinate injections will also provide the required copper. Internal parasites (worms) cause symptoms similar to Molybdenum toxicity; you may wish to consult a veterinarian for diagnosis and treatment recommendations.

### **Fitting and Showing**

4-H and FFA project manuals and breed association publications listed in the reference list of this manual have much detailed information on the fitting and showing of beef cattle.

Heifers that are not registered should be without horns. Dehorning may be necessary. The same hair clipping procedure used for market steers is acceptable for replacement heifers.

### **Follow-Up Information**

Since the end product of the beef replacement project is a healthy calf at weaning time, it is important that the member acquire follow-up information on calving and weaning from the buyer if possible.

## **General Rules for 4-H & FFA Beef Replacement Heifer Projects**

### **Member Eligibility**

To be eligible for this Beef Replacement Heifer Project, the exhibitor must be a member in good standing of a 4-H Club or FFA Chapter in San Luis Obispo County, or be a qualified independent junior exhibitor from San Luis Obispo County. (Refer to State and Local Rules for eligibility and qualifications.)

### **Heifer Eligibility**

Registered or grade beef replacement heifers are eligible projects. Grade heifers must be without horns. The sire of the heifer must be of a beef breed. If an exhibitor declares that the heifer is registered, the registration papers must be signed off and submitted to the Livestock Office before the heifer will be allowed to sell.

The age limit for a heifer is a minimum of 20 months and a maximum of 30 months on the opening day of the Fair. Heifers must weigh a minimum of 900 pounds at the weigh day during the Fair and be bred to calve between September 1st and December 1st of the year shown. These requirements will be verified at the scale by the certified weighmaster, the attending veterinarian, and Fair management. Those heifers that do not meet the criteria will be disqualified from show competition.

### **Ownership Requirements and Project Agreement**

The project members must have ownership of their heifer (see schedule on last page for correct date). You are required to complete a Project Agreement form and return it to the California Mid-State Fair Office (refer to schedule on the last page for time and date due).

Project Agreement forms will be provided to the Beef Project Leaders and FFA Instructors, or upon request from the Fair Office. A copy of the Bill of Sale must be submitted with the Project Agreement form as proof of ownership for all heifers. The original Bill of Sale must be retained by the exhibitor and presented to the State Brand Inspector at the Fair on weigh day.

### **DNA Requirements**

All exhibitors must submit a DNA kit with Sale Catalog Information prior to the 120 day ownership deadline.

### **Substitutions**

If a breeding or health problem should occur, as evidenced by a veterinarian or the 4-H Leader/FFA Instructor in charge, a substitute heifer may be allowed if owned by the member on or before the specified date, which is listed in the 2022 Competition Handbook schedule under official rules. No substitution will be allowed unless the member submitted a Project Agreement on the original heifer by the original January deadline, receives approval from Fair Management on the substitution, and submits a written justification for the substitute from the attending veterinarian or leader.

### **Breeding and Project Management**

Heifers must be bred to calve between September 1<sup>st</sup> and December 1<sup>st</sup> of the year shown. Therefore, they must be bred no later than March 1<sup>st</sup>, but preferably by January 15<sup>th</sup> to fit the calving season of the central coast area. Heifers will be pregnancy tested on weigh day at the Fair by a veterinarian specified by Fair Management. Heifers that are not bred will be disqualified from show competition. Heifers may be bred naturally, or by artificial insemination. They should be bred to bulls with low birth weights in order to reduce difficulty in calving. Accurate records must be kept on the heifers. It is important that members have dates written down as to when the heifer was exposed to the bull and any data that could be beneficial to the potential buyer. The member must have adequate facilities and feed for the project. Heifers should be fed for continuous growth, gaining about 1 to 1 1/2 pounds per day. The heifer should not become over fat.

### **Health**

At the start of the project, members should seek advice from a local veterinarian about preventing diseases such as Leptospirosis, Vibriosis, anaplasmosis, and brucellosis. State law requires that beef heifers over twelve (12) months of age show evidence of the calf hood brucellosis vaccination if they are sold within the State of California for breeding purposes. Therefore, it is mandatory that the brucellosis ear tattoo number (not orange metal clip number) be entered on the Project Agreement form. All heifers will be checked by the veterinarian at the scales when being weighed and pregnancy tested, heifers having no tattoo, shall be disqualified from show competition.

### **Judging**

The Danish System of judging will be used at the Fair, giving an exhibitor four (4) possible group placings. A Grand Champion and a Reserve Grand Champion Beef Replacement Heifer will be selected by the judge. Heifers awarded purple, gold, or silver ribbons in show competition will qualify for the Beef Replacement Heifer Sale held during the Fair. Heifers that qualify for the sale are not required to sell, but must inform the Livestock Office within one (1) hour following the heifer show in order to be removed from the sale order. A fee of \$25.00 will be charged for this procedure. However, the Grand and Reserve Champion heifers must sell in the Heifer Sale.

### **Replacement Heifer Sale**

An exhibitor may not show or sell more than one (1) beef replacement heifer at the Fair per year. Only those heifers placing in the top three (3) groups will be eligible to sell. If a heifer calves during the Fair and has qualified for the sale, she will be eligible to be sold with the calf by her side provided that the calf is healthy and the heifer is controllable. The decision will be made by Management.

### **Temperament of Heifer**

Heifers must be gentle and trained to lead with a show halter. The Fair Management reserves the right to disqualify as ineligible for show competition, and order the removal of any beef entry that is not gentle and properly halter broke to lead, and which could, therefore, endanger other exhibitors and the Fairgoing public.



## **Cattlemen's Choice - Pen of four Bred Commercial Heifers**

**Four** Bred Heifers will be selected by a committee of three SLO County Cattlemen as the outstanding Pen of Four Bred Commercial Heifers which **must** be bred and raised in San Luis Obispo County, Heifers **must** have the official calthood brucellosis vaccination with the presence of an official tattoo visible in the right ear.

The exhibitor of each Heifer will receive a cash award and a plaque- Sponsored by the SLO County Cattlemen's Association.

This Cattlemen judging activity will **not** conflict with or influence the traditional judging selection process of the official show judge.

The judging will take place on Wednesday, July 27<sup>th</sup>, 2022. The show shall start at 5:00 PM. Cattlemen Judges shall judge from the stands.

Each judge will be provided the same scenario and one scorecard. All cattle in each class shall be scored (100-point scale) by each judge. Cattle in each class will be scored by each of the three cattlemen. Scorecards will be submitted to the clerk/coordinator at the conclusion of each class. Judges are encouraged to take notes.

At the conclusion of all classes, a list of the top eight heifers resulting from their scores will be provided to all judges. The three judges must then agree on the final selection of the top four heifers. These heifers are all equal and not ranked.

The Cattlemen's Choice will be announced at the start of the Heifer auction on Friday evening. All four exhibitors will be brought to the sale block to receive awards and recognition at that time.

### **Judging Criteria:**

#### **Scenario:**

Cattlemen shall select heifers as if purchasing these females as a private party purchase off the ranch or in a sales yard auction. Heifers should be scored based upon the following scenario: A Bred Heifer due to calve in the summer or fall of 2022. Heifers will be introduced soon after purchase into a typical large herd Commercial Cow Calf rangeland operation. The rangeland is located in the California coastal foothill range comprised of oak, pine, buckeye and native brush in rocky grassland and some open country. The range location and climate is predisposed to drought conditions. Calves after weaning will be sold as stockers.

#### **Scorecard**

Usefulness Score; Overall conformation, balance, frame and weight.....**25 points**

Femininity score; Broody, displays feminine traits, angularity, a sound udder, and overall reproductive efficiency.....**25 points**

Soundness score; Sound feet and legs, unrestricted movement and flexible skeleton.....**25 points**

Composition and condition score; A desirable combination of fat, muscle, leanness and bone.....**25 points**

**Total possible points 100 points**