



# **Beef Replacement Heifer Handbook**



# Beef Replacement Heifer Manual



## 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 heifers and market steers, the fair staff recommends reading this manual for anyone planning to raise or supervise a heifer project.

Heifers that qualify may be shown in the beef replacement heifer class at the Tulelake-Butte Valley Fair. Please refer to the rules throughout this manual along with the fair's exhibitor hand book for the requirements of eligibility of the replacement heifer division. Heifers are not required to sell however; the exhibitor must inform the Livestock Office within one hour following the show in order to remove the animal from the sale. Each exhibitor is allowed to sell one replacement heifer as well as one market animal of any species.

## 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 breed, milk production, and 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 900 pounds at the fair and are twelve to fourteen months old at breeding time. 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 heifer must be a beef breed. Registered and Non-Registered heifers are eligible for show.

Remember that you must train your heifer to lead and to be calm around crowds. Try to avoid selecting a high-headed or "wild" heifer. Please refer to local rules for restrictions regarding control issues.

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. Ask the breeder if the heifer has been

vaccinated for brucellosis as it is a requirement for show and sale eligibility. Please refer to state rules for further information.

## **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.

Project loans, which may be obtained from commercial banks, may 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 and income before starting the project. Project rules state that accurate records be kept up-to-date at all times. Each exhibitor will be required to submit a financial budget and expense records for the project to the fair prior to showing.

Consider buying insurance for your heifer. Ask your advisor or the fair office 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 the heifer in.

If a shelter is used to protect your heifer from winter storms and summer sun, a shed, lean-to, or box stall measuring ten feet by ten 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 June through September. Additional feed will be needed the rest of the year. Remember 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 good feed source, but it will take two to ten 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 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 ½ 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 of about 1 to 2.5 pounds per day depending on breed and skeletal size. They must weigh a minimum of 900 pounds at weight-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 ½ pound of cottonseed meal and 1 to 1 ½ pounds of barley, rolled or ground. If alfalfa hay makes up to fifty percent or more of the hay ration, the cotton seed meal can be eliminated. If the heifer gains too rapidly and starts to get too fat, reduce or eliminate the barley.

If good range of 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 percent loose salt and fifty percent bonemeal or dicalcium phosphate should be available to the animal at all times. The heifer should always have free choice of a mineral supplement throughout the year. A trace mineral block with selenium is an adequate choice.

### **Feeding Rules:**

- ✓ Feed at regular intervals (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 15<sup>th</sup> thru December 15<sup>th</sup> and February 1<sup>st</sup> thru May 1<sup>st</sup> following the fair. Assuming a nine month gestation period, the heifer should be bred no earlier than December 20<sup>th</sup> and no later than July 15<sup>th</sup>. Two heifer divisions will be available at the fair, (1) Fall Bred Heifer Division and (2) Spring Bred Heifer Division.

Heifers may be bred naturally or by artificial insemination. They should be bred to light birth weight 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 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 days until in calf. As a general rule, a heifer should be inseminated within twelve to twenty-four hours after first being observed in heat. The gestation period, the time after breeding until the calf is born, is about nine 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 1851 and 2933.

## **Health**

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 months or age show evidence of calf hood brucellosis vaccinations 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. There are numerous de-wormers available for worming purposes.

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. Severely affected cattle may show symptoms of scours, loss of 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 are a good source of information on the fitting and showing of beef cattle. The same hair clipping procedure used for market steers is acceptable for replacement heifers. All heifers must be without horns. Horned heifers must be dehorned in order to be eligible for show. Please refer to the fair's local and state rule's guide for fitting restrictions.

## **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 Beef Replacement Heifer Division



## **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 Modoc or Siskiyou counties in the 10-A District, or be qualified independent junior exhibitor from Modoc or Siskiyou counties in the 10-A District.

## **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. Heifers must be bred and purchased from a breeder in Modoc, Siskiyou, or Klamath Counties.

The age limit for a heifer is a minimum of 15 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-in during the fair and be bred to calve between September 15<sup>th</sup> thru December 15<sup>th</sup> and from February 1<sup>st</sup> thru May 1<sup>st</sup>. These requirements will be verified at the scale by the certified weighmaster, the attending veterinarian, and fair management. Those heifers that do not meet criteria will be disqualified from show competition.

## **Ownership Requirements and Project Agreement**

The project members must have ownership of their heifer no later than 120 days before fair. Heifers must be weighed and tagged at the Pre Weigh-in/Tagging day to be eligible. The *original* Bill of Sale must be retained by the exhibitor and presented to the State Brand Inspector at the Fair.

## **Substitutions**

If a breeding or health problem should occur, as evidenced by a veterinarian of the 4-H Leader/FFA Instructor in charge, a substitute heifer may be allowed if owned by the member on or before the 120 day ownership requirement and was tagged and weighed at that time.

## **Breeding a Project Management**

Heifers must be bred to calve between September 15<sup>th</sup> thru December 15<sup>th</sup> and from February 1<sup>st</sup> thru May 1<sup>st</sup>. Two calving divisions will be available at the fair, (1) Fall Calving Division and (2) Spring Calving Division. Heifers will be preg-checked on weigh day at the Fair by a veterinarian specified by Fair Management. Heifers that are not bred within the specified calving times 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 that bull and any data that could be beneficial to the potential buyer.

## **Health**

At the start of the project, members should seek advice from a local veterinarian about preventing diseases such as Leptospirosis, Vibrosis, Anaplosmosis, and Brucellosis. State law requires that beef heifers over twelve (12) months of age show evidence of the calfhood brucellosis vaccination if they are sold within the state of California for breeding purposes. Therefore, it is mandatory that the brucellosis ear tag number (orange metal clip number) and tattoo number be entered on the entry form. All heifers will be checked by the veterinarian upon arrival on the Fairgrounds and those 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 Reserve Grand Champion Beef Replacement Heifer will be selected by the judge(s). Heifers awarded purple or gold 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 hour following the heifer show in order to be removed from the sale order. The entry Fee will be \$35.00. The entry fees will be used to offset vet costs affiliated with vet inspections of the heifers. 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 beef replacement heifer at the Fair per year. Only those heifers placing in the top two 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 fair management.

## **Temperament of Heifer**

Heifers must be gentle and trained to lead with a show halter. The Fair Management reserves the right to disqualify any animal 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 Fair-going public.