Beef Replacement Heifer

2026 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 animals, this manual is recommended reading for anyone planning to raise or supervise a heifer project.

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). 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 your 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. A copy of the bill of sale is required to enter your heifer in the fair, both documents are to be brought to the fair with your heifer.

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.

You may 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 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 (10) feet by ten (10) feet should be large enough for one heifer, with additional pen space for pasture. It should be well ventilated.

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.

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.

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 August 20th and December 1st following the Fair. Heifers should calve so that they have enough time to cycle for their second breeding season.

Heifers may be bred naturally or by artificial insemination. They should be bred to calving ease bulls to reduce calving difficulty. It is recommended that the bulls be semen tested for fertility. Leaving the heifer with the bull(s) a minimum of forty-five days 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.

Accurate records must be kept on the heifers. It is important that members have dates recorded, as this information will be beneficial when speaking with potential buyers.

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, see the extension resource site at: https://beef-cattle.extension.org/

Health

Purchase a heifer that is in good health from a reputable breeder. At the start of the project, members should seek advice from a local veterinarian about preventing diseases such as Leptospirosis, Vibriosis, anaplasmosis, and brucellosis. CMSF requires heifers to show evidence of the calf hood brucellosis vaccination. Vaccinations for brucellosis can only be done by licensed veterinarian and must be given before 12 months of age. 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.

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, 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 available on the 4-H website.

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.