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Oklahoma Cooperative Extension Service • Division of Agricultural Sciences and Natural Resources

## Selecting and Managing the 4-H Beef Heifer

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Selecting and managing a 4-H heifer are challenging experiences, and they are rewarding when you see what you can achieve. The 4-H member should always keep in mind that the primary objective of the project is to manage each heifer so that she will become a good brood cow and produce a calf each year. Few animals can be developed into show winners, and many potential winners fail due to neglect in caring for them. Even the best heifer probably will not be a show winner without good management.

### Selection

Most 4-H members start with only one animal for their project; however, two animals managed together will usually do better. Depending on their resources, some 4-H members many start their beef breeding project with two or more open heifers, with bred heifers, or with cows and calves. The final goal should be for the project to develop into a cow herd for the club member.

One of the first decisions before purchasing a heifer should be whether to buy a registered or a grade animal. The heifer need not be registered for the 4-Her to gain learning experiences in the production of beef cattle and to have an animal develop into a brood cow. However, a purebred heifer can offer a member more opportunities for show ring competition, judging evaluation, and association with other beef club members and a junior beef breed association. Breed, body type, skeletal structure, and other visual traits are used to appraise and make the decision on the heifer to buy. She possesses the ability to grow and develop so that her frame size and weight will be acceptable for her breed.

All breeds have certain advantages and disadvantages, so it is important for you to learn about the various breeds in your area before making a final decision. A 4-H member who already has a breed preference should start with that breed. Selecting a heifer out of preference tested herds is

recommended. These herds will have records on calf weaning weights, and some herds will have additional information on yearling weights, carcass information, and possibly expected progeny differences (EPD's). A 4-H member should contact the county Extension educator or an experienced cattleman to find out more information about performance testing and its application to the selection and production of beef cattle.

Skeletal correctness is very important to sound beef production. Skeletal defects cannot be changed. Do not select heifers that are sickle-hocked, back at the knees, buck-kneed, cow-hocked, toed in or out, weak topped, or that have other skeletal defects. These defects can reduce the chance of having a winning animal if she is to be shown. Buy the best female that you can afford.

### Feeding

Many heifer projects can be grown on pasture or in paddocks with limited grain feeding. They should not be confined to small pens because this prevents them from receiving proper exercise. It is not good management to feed a heifer high levels of a high energy feed, and then walk her several miles daily so that she will not get to fat. It is best to feed her a ration that will provide the necessary amount of nutrients for her body maintenance plus a rate of gain appropriate for her frame.

There are several commercial rations that will meet the nutrient needs of the growing heifer. Usually, a ration containing 12 to 14 percent crude protein is adequate. If the heifer has not been eating grain, start her on two to three pounds of the



**Figure 1.** It is important that heifers have the proper frame size and weight at breeding and a first calving.

concentrate portion of the ration per day plus good quality grass hay free choice. Slowly increase the concentrate by about 1 to 1/2 pound per day as she “gets on feed” over a period of 10 to 15 days. It would be best to weigh the heifer at monthly intervals. Weighing would indicate if she is gaining as she should, and it also helps to determine if there is need to increase or decrease the amount of concentrate. Close daily observation and good eye judgement are important in determining the body condition of the heifer and when to change the amount of ration being fed. Four-H members should ask their county Extension educator or experienced cattlemen if they are unsure about the correct appearance for the age and weight of the heifer. There are any number of possible rations and combinations of forages and supplements that can be used for developing replacement heifers. Choices will change because of availability and prices of different feeds. Beware of fads and “miracle” additives that are frequently promoted to do all kinds of wondrous things for show cattle. The fundamental requirements for energy, protein, vitamins, and minerals in a well-balanced diet apply to show cattle just as they apply to purebred and commercial cattle.

## Complete Rations

As a matter of practicality, youth who need to buy the complete ration for one or two heifers will most likely buy the ration from a commercial feed manufacturer. This will probably be safer and less expensive than attempting to purchase individual ingredients and additive packages. Simply adjust the daily feed level to match growth needs of the heifers.

For persons with facilities and needs to make their own rations, a couple of examples using common Oklahoma feed ingredients are shown in Table 1. On a full feed, (3 to 3.5 percent of body weight), heifers should gain at rates of 2.0 to 2.5 lb/day. Again, the rate of gain will need to be monitored and adjusted by changing the feeding rate.

A common feeding situation is one in which hay is available and a supplement is used to reach a target rate of gain. This will often reduce the amount of purchased feed needed. When alfalfa hay is available, the program is very simple. Feeding 4 to 6 pounds of grain and letting the heifer have free-choice access to alfalfa hay should result in 2.0 to 2.5 lb/day gain. No supplemental protein, vitamins, or mineral will be required. If a grass hay is used, the supplement will need to include protein as well as grain and possibly will require additional calcium and phosphorus. Two example supplement formulations are shown in Table 2. Alternatively, a commercial 20 percent protein supplement can be used at a feeding rate of 4 to 6 lbs/day to attain a rate of gain in the range of 1.25 to 1.75 lb/day depending on the quality of the hay. While 20 percent protein in a supplement seems high, the protein requirement of the heifer must be met in order for energy to be utilized. When the hay contains less than 10 percent protein, the supplement will need to contain at least 20 percent protein balance to the diet.

Whenever possible, supplements and complete rations should include one of the ionophores (Rumensin or Bovatec are presently cleared for use with heifers). These products increase feed efficiency and, just as importantly, help prevent coccidiosis. They may also reduce the age and weight needed

**Table 1. Complete rations for growing heifers.**

	Percent	
	Ration 1	Ration 2
Alfalfa	20.0	15.1
Cottonseed hulls	19.8	20.0
Corn	40.5	25.2
Wheat Midds		24.9
Cottonseed meal	14.7	9.6
Molasses	4.1	4.1
Salt	.3	.3
Limestone	.4	.8

**Table 2. Supplements for growing heifers fed free-choice grass hay.**

	Percent	
	Supp 1	Supp 2
Alfalfa		25.0
Corn		42.9
Wheat Midds	75.0	
Soybean Meal		26.3
Cottonseed Meal	19.5	
Molasses	4.0	3.5
Dicalcium phosphate		2.3
Limestone	1.5	

for the heifer to reach puberty. Feeding levels of either product should be 25 to 30 grams per ton to complete feed or 200 milligrams/head/day if provided through a supplement.

The primary purpose of feeding the heifer is to grow and adequately develop her into a productive brood cow. She must have enough feed (nutrients) to keep her growing and developing rapidly. However, do not be too eager. Do not overfeed her. Overfeeding can be harmful to her future production as a brood cow. An excessively fat heifer is usually a slow breeder and poor milker, and she is more likely to have calving problems.

## Heifer Feeding Management Tip

- Feed only what is required; feed a balanced ration.
- Feed regularly; don't skip a feeding. Preferably, feed twice each day.
- Keep feed fresh. Do not let stale feed accumulate in the feed bunk.
- Avoid finely ground feed. Coarse feeds are better.
- Additional minerals should not be needed if they are provided at proper levels in the concentrate mix.
- Provide clean, fresh water at all times.
- Prevent feed wastage.
- If the heifer goes off feed or scours, cut back on the concentrate portion and feed more hay immediately. Gradually return to a normal amount of feed after she recovers.

## Heifer Health

The easiest and cheapest way to control most diseases and parasites is by prevention through good management. Most diseases can be controlled through good management and inexpensive vaccinations. Clean sheds, lots, and feed and water troughs are the first steps in preventing disease and parasites.

Heifer calves should be vaccinated for brucellosis at 4 to 10 months of age. Weaned heifers should be vaccinated for leptospirosis and revaccinated for blackleg and malignant edema. Other vaccines can be given for some of the other diseases, but one might consult with a veterinarian for these. It is good business to buy breeding animals only from breeders who have a reputation for healthy herds.

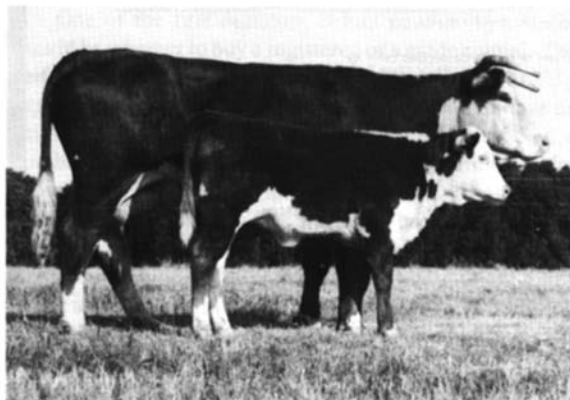
Fleas, lice, and grubs are the most common pests that annoy cattle. Flies can be controlled with one of several insecticides by using ear tags, sprays, or dusts.

Since lice do most of their damage in winter and early spring, it may be desirable to use dusts or some of the systemics that are on the market today. Grub control is very essential, especially if the heifer is to be shown. The use of systemics has been the best means of controlling the cattle grub. One must always read the directions on the label concerning the timing and application of these products.

Do not use any drug or feed additive that has not been approved for use with breeding females. Any drug that is a hindrance to the development of the female reproductive organs should never be used.

## Age

How old should the heifer be when she is purchased? She should be old enough that you can adequately take care of her. It is easier to provide necessary feed nutrients and other management needs for a heifer of approximately 7 to 8 months of age and ready to wean than for a heifer that is 4 to 5 months or younger. The younger heifer is more sensitive to feeding and management and is more likely to get sick.



**Figure 2.** The goal is to develop the heifer into a brood cow which will produce a calf each year.

Four-H members who plan to show heifers should consult the show catalogs to determine the age of animals they want to purchase based on show classifications.

## Registration

Registration papers are very important because they provide valuable information about the individual animals. Items of information such as animal name, registration number, birthdate, tattoo number, and parentage on the papers are very important. All information should be true and correct. Registration information should never be altered. Remember, the 4-H member's and the breeder's integrity and reputation are reflected by the information given on the registration papers. Some breed associations are including expected progeny differences, production records, and maternal records on the registration certificates.

It is important for registered animals to be tattooed. Some breeds also require brands. All identification must match the identification given on the registration papers. Most shows will not permit a registered animal to be shown if the papers are not in the rightful owner's name. The registration papers must be transferred to the current owner's name and be received from the breed association before the first show. Check show catalogs for specific length of ownership requirements.

## Breeding

Plan to breed the heifer between 15 and 18 months of age so that she will calve at 24 to 27 months of age. It is important that she weigh approximately 65 percent the mature weight when breeding and approximately 85 percent of her mature weight at calving in order to minimize calving problems and to obtain good rebreeding performance. If you are breeding the heifers to produce show calves, you should consider the age classification spread determined by the show management and breed association. You want your heifer to calve early in a specific age classification. Seasonal calving, beginning in the fall and continuing through spring, may be desired. Heifers that are bred for fall calving (September 1 and later) should be turned in with the bull by November 21. The average gestation length is 283 days. Using this figure, you can calculate the length of a breeding season which will result in calves being born during a specific time frame.

If the heifer is registered, she should be mated to the best available bull of her breed. Some 4-H members may have an agreement with the breeder from whom they purchased the heifer which permits them to use one of the breeder's bulls. The 4-H member may decide to artificially inseminate the heifer. Most breed associations provide herd sire summaries which contain a great deal of data useful in selecting potential sires.

## Summary

Buy the best heifer you can afford, feed her adequately, manage her health and other cares, and breed her to the best available bull. Your efforts will be rewarded.

**PERFORMANCE REGISTRATION CERTIFICATE**

**AMERICAN ANGUS ASSOCIATION**

*Certifies That*

NAME OF ANIMAL  
**O S U KARAMA 924A**

BREEDER  
**OKLAHOMA STATE UNIV STILLWATER OK**

FIRST OWNER  
**OKLAHOMA STATE UNIV STILLWATER OK**

SEX  
**COW**


TATTOO  
LEFT EAR: **924A** RIGHT EAR: **924A**

REGISTRY NUMBER  
**11578314**

TAG NO  
**620125**

DATE CALVED  
**2/24/91**

MEMBER CODE  
**420125**



EXPECTED PROGENY DIFFERENCES	BIRTH WEIGHT		WEANING WEIGHT		MILK EPD	WEANING WEIGHT MATERNAL		COMB VALUE	YEARLING WEIGHT	
	EPD	ACC	EPD	ACC		ACC DAUGHTERS	EPD		ACC	
	+3.91	.091	+31	.081	+11	.091	+26		+48	.07
AS OF 9/91										
SIRE										
PROST POWER DRIVE										
DAM										
O S U KARAMA 3502										

PEDIGREE RELATIONSHIP	PRODUCTION				MATERNAL		CARCASS EPD		
	CALVING EASE	BIRTH WEIGHT	WEANING	YEARLING	CALVING EASE	WEANING	CARCASS WEIGHT	MARBLING	RIBEYE AREA
INDIVIDUAL									
PROGENY									
SIRE	338	619	689	54	439	28	265	784	330
PAT G SIRE	414	1442	1645	55	982	25	1096	4720	1503
DAM	1019	1773	2103	2092	2810	2101	4678	1275	4110
MAT G SIRE	130	874	947	58	589	32	182	543	146
PROGENY	275	808	2102	892	2101	504	4101	540	1245

NAME AND LOCATION OF RECORDED OWNER: \_\_\_\_\_ MEMBER CODE: \_\_\_\_\_ DATE OF SALE: \_\_\_\_\_

SERVICE DATE: \_\_\_\_\_ SERVICE BULL NAME: \_\_\_\_\_ BULL NO.: \_\_\_\_\_ TRF. NO.: \_\_\_\_\_

First female authorized transfer of Registration on the records of the Association is: \_\_\_\_\_

NAME: \_\_\_\_\_ MEMBER CODE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ TOWN: \_\_\_\_\_ ST: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

DATE OF SALE: \_\_\_\_\_ SIGNATURE OF TRANSFEROR: \_\_\_\_\_

If above animal is a female, serviced prior to Date of Sale, Date of Service or exposed period as follows:

Service date, if known: \_\_\_\_\_ NATURAL  ARTIFICIAL

Feature exposure: From \_\_\_\_\_ to: \_\_\_\_\_ SERVICE BULL NO.: \_\_\_\_\_ MEMBER CODE: \_\_\_\_\_

I certify that the above service conforms with the governing provisions of Section \_\_\_\_\_ of the Rules governing artificial insemination, if applicable, as follows: \_\_\_\_\_

immediate relative  full time employee  \_\_\_\_\_ SIGNATURE OF OWNER OF RECORD OF SERVICE BULL IF NOT SELLER OF FEMALE: **X**

**AMERICAN ANGUS ASSOCIATION**  
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*Richard L. Spader*  
EXECUTIVE VICE-PRESIDENT

REG. NO. 11578314  
DATE ISSUED 9/03/91 136375

Figure 3. Registration papers provide important information.

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