

# KANSAS 4-H BUCKET CALF PROJECT

## Parent/Leader Manual

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### ***Purposes:***

1. To design a cattle project to fit the physical size and maturity level of younger members.
2. To teach proper health care and nutritional requirements of young cattle.
3. To teach basic beef management skills without a large investment.
4. To teach basic record-keeping skills.
5. To provide a better understanding of the feeder cattle industry.



*Identifying your calf with an eartag is important!*

## **Guidelines**

- 1. Bucket Calf** – An orphan or newborn calf; male or female, dairy, beef, or cross; fed on bucket or bottle.
- 2. Begin Project** – Select and/or purchase a calf within two weeks of birth. Calf needs to be born between January 1 and May 1 of current project year. Calf should be at least 90 days old at fair time in order to show.
  - Calf Sources* – Feedlots, dairies, sale barn, neighbor
  - Other Suggestions* – One calf per year per 4-H'er. Develop management and marketing plan with parent, leader, or banker.
- 3. End Project** – Project ends when calf is sold at weaning age, as a feeder calf, dies, or end of 4-H year. If calf is continued as a breeding heifer or market steer project, begin record for next year with ending value.
- 4. Identification** – Tag calf with official 4-H eartag by June 1 of current 4-H year. Tags are available at county or district K-State Research and Extension office. It should be tagged at least 90 days before county fair.
- 5. Record** – *4-H Livestock Record for Beginning Members* (P1082). Fill out the appropriate section according to age of 4-H'er.

- 6. Fair Classes** – Calves may be shown at halter in special beef or dairy class. Classes may be split according to:
  - a. Age of 4-H'er
    - i. 7 to 9 years old
    - ii. 10 to 12 years old
  - b. Age of Calf
    - i. Calves born January 1 to March 15
    - ii. Calves born March 16 to May 31

Classes are judged by conference method based on:

- What 4-H'er learned about caring for and raising calf.
- Fitting and showing according to either beef or dairy guidelines, with emphasis on how much the 4-H'er learned and can do without help. However, parental guidance is encouraged.
- The general health of calf and knowledge of 4-H'er in health-related areas.
- Dairy or beef quality of calf should not be considered, since purchase is not made on that basis.
- Completion of record sheet, to best of member's ability.

**7. Awards** – It is suggested that every entry receive a participation ribbon. If classes are ranked, it is important for spectators to know that placings are being made based on the interview and not on the quality of the animal.

**8. Sale of Animal** – It is suggested that animal not be sold at fair auction, so that true market value may be taught. Members may keep animal for breeding heifer or market steer project or sell at sale barn or by private treaty.

**9. Age of 4-H'er** – This project is suggested for youths 7 to 12 years old. Those who have had their 13th birthday before January 1 of the current year would be ineligible.

**10. Other Project Assistance:**

- Project Leader
- Veterinarian
- Feed Company Nutritionist
- Veterinary Science Project Materials
- Beef or Dairy Project Materials

### Care of Newborn Calf

1. Provide clean well-bedded pen, free of drafts
2. Swab the navel with tincture of iodine as soon as calf is born.
3. Provide colostrum (first milk produced by the dam) to the calf for at least three days.
4. If unusual health problems exist, vaccinate, give antibiotics and vitamins A and D by injection.

### Feeding Recommendations

**Colostrum** – The need for and benefit of colostrum cannot be over-emphasized! A source of colostrum should be obtained from a dairy and frozen for use if calf is obtained within 24 hours of birth. If colostrum is available, it can supply the entire liquid feeding program. Since the antibodies in colostrum are capable of being absorbed from the intestinal tract only during the first day after birth, it is essential that the calf be given colostrum during the first 24 hours of life (first 12 hours preferred).

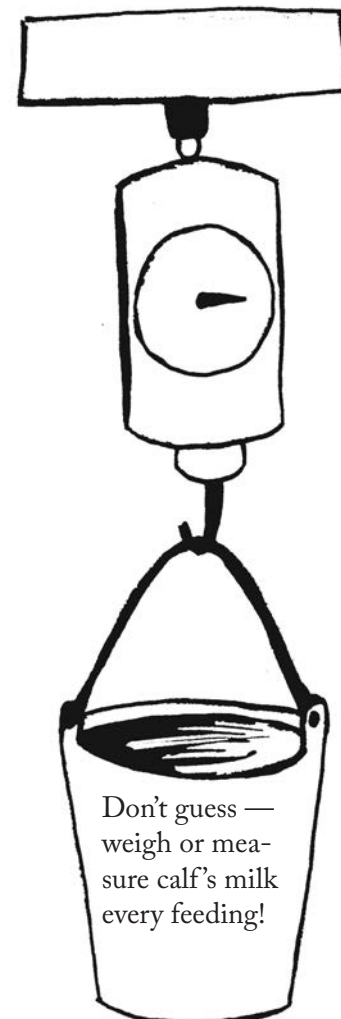
**Antibiotics** – Feeding antibiotics (terramycin or aureomycin) stimulates the growth of young calves and reduces the incidence of calf scours. Feed recommended levels (50 to 100 mg once a day) in the milk, starting with the first bucket feeding. Antibiotics should also be in the calf starter ration (see Table 2).



**Milk Replacer Feeding** – Beginning with the second day, feed whole milk or properly diluted colostrum at the rate of 1 pound for each 12 pounds of body weight daily. Continue feeding milk until the calf is eating 1.5 pounds of calf starter daily. When feeding milk replacer, follow the manufacturer's directions. Recommended analyses of milk replacers are as follows:

- Protein — 18 to 30 percent
- Fiber — not more than 0.15 percent
- Fat — 18 to 22 percent
- Vitamin A — not less than 20,000 IU/lb
- Calcium — .75 to 1.25 percent
- Vitamin D — not less than 5,000 IU/lb
- Phosphorus — .70 percent
- Vitamin E — not less than 100 IU/lb
- Sodium — .45 percent
- Aureomycin or Terramycin — 25 to 30 mb/lb

Use milk replacer for 4 to 6 weeks. Mix and feed the replacer according to the instructions on the bag. Usually, this will be 10 percent of the calf's body weight in milk, morning and night (2 to 3 quarts twice daily).



If the calf is already on a milk replacer, an effort should be made to purchase the same kind. The milk replacer can then be gradually changed to the product you desire. Milk replacer mixes best if the milk powder is added to hot water. However, it needs to cool to body temperature before feeding.

**Calf Starter** – Begin feeding calf starter and good quality hay during the first week. At about 3 months of age, replace the calf starter with a cheaper type of calf grower ration. Good green, leafy, soft-stemmed hay containing at least 50 percent alfalfa is best for calves. Allow them all the hay they will eat. It is of great importance that the calf be made to consume starter and hay at an early age.

Calves do not like finely ground and dusty feeds. Ingredients that must be ground for calf starters should be coarsely ground, cracked, rolled, or flaked. Calf starters should contain the following levels of nutrients:

- Protein — 18 percent
- Vitamin A — not less than 3,000 IU/lb
- Net Energy (Lact) — 72 Mcal/cwt
- Vitamin D — not less than 270 IU/lb
- Calcium — 0.8 to 1.3 percent
- Phosphorus — minimum of 0.5 percent
- Aureomycin or Terramycin 5 to 10 mb/lb
- Sodium — 0.75 to 1.25 percent
- Acid Detergent Fiber (ADF) — maximum of 10 percent
- Crude Fat — 3 to 8 percent

Start with a small amount of calf starter and increase with the calf's appetite. The calf will consume more if it is fed fresh daily. The old feed can be given to other livestock. Calves can be weaned from milk replacer when consuming 2 to 2 ½ pounds of calf starter daily (usually at 4 to 6 weeks of age).

Calves can be trained to eat starter by dropping a handful in the milk bucket or hand feed as soon as milk is gone and calf is trying to lick you. Feed up to 5 pounds of starter and all the hay the calf wants until about 3 months old. Then switch to "grower" feed at 5 pounds per day and free choice of high quality hay and/or pasture. Clean, fresh water should be available at all times.

**Four Months to One Year** – Calf should be fed the right amounts of nutrients to obtain optimum growth. Keep calves in good condition but avoid getting them too fat! This feeding program could be accomplished by feeding all the legume or good mixed legume-grass hay they will eat, and 2 to 8 pounds daily of an economical grain mixture. (Amount depends on the condition of the calf and

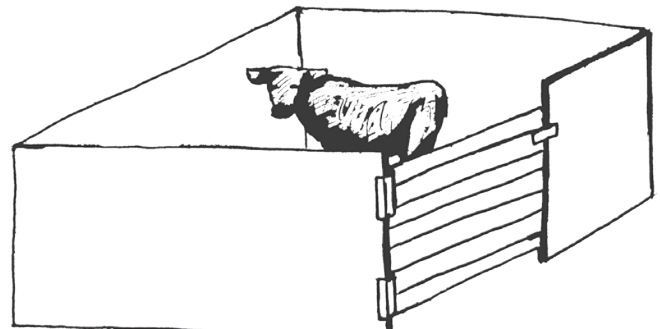
quality of forages available.) Good pasture or silage could be used to replace part of the hay, provided sufficient grain is fed to supply adequate energy and protein. Trace-mineralized salt and fresh water should be available at all times.

### **Some Points about Calf Feeding:**

1. Give the calf colostrum starting immediately after birth, for at least the first three days of life. Leaving the calf with its mother for three days if possible would be most desirable.
2. Do not overfeed or underfeed your calf. Weigh or measure milk – follow feeding recommendations. Feed milk once or twice daily at regular intervals. Warm milk to 100°F, especially during the first three weeks.
3. Always have fresh water available in a clean pail or from an automatic drinking cup after calf is about three weeks old. Water pail should be in the front of the pen, opposite from the feed.
4. After calf is weaned, keep trace mineralized salt before it at all times.
5. Do not depend on silage as a source of feed for calf under 6 months of age. Even after 6 months of age silage should not constitute **all** of the roughage.
6. Do not depend on pasture as a source of feed for a young calf, except under the most favorable conditions. Too often, a calf is neglected and undernourished on poor pasture. Good pasture near the barn, with shade and water, can be a satisfactory supplemental feed and provide the calf exercise and clean quarters.

### **Housing**

1. Place calf in a pen (4 feet by 6 feet) until weaned. Keep pen well-bedded and free from drafts.
2. Thoroughly clean and re-bed pen frequently.
3. Equipment used for feeding in calf pen should be constructed of materials that are easily cleaned.
4. Place drinking cups and feeding boxes so that top is about 20 inches from the floor.



## Management

1. Identify calf immediately after birth. The state 4-H logo eartag may be used.
2. Dehorn calves when the horn button can be felt. The electric dehorner is the method of choice. Caustic potash or dehorning paste may also be used.
3. Extra teats on dairy heifer calves should be removed as soon after birth as possible. The extra teat should be thoroughly disinfected with iodine and snipped off close to the body wall with very sharp shears. Disinfect the wound.
4. In mild weather, calves may be exercised outside, but exercise is not absolutely necessary for pre-weaning calves.
5. Use nipple feeder pails to prevent the calf from gulping milk and to reduce digestive upsets. However, if the nipples and valves are not properly cleaned, possible bacterial infection may out-weigh all advantages obtained from their use. Wash and sterilize calf pails. Keep the calf pails as clean as the dishes you eat from.
6. After calf is weaned, it could be grouped according to age, in a large pen with others. See that all calves actually eat their fair share.
7. Observe groups of calves frequently for sucking.
8. When calves are unthrifty, check for external and internal parasites.

**Table 1. A Good Grower Ration**

Ingredients	Amount
Corn (ground) or Grain Sorghum (rolled)	700 lbs.
Oil Meal (soybean or cottonseed)	100 lbs.
Bonemeal (or calcium-phosphorus supplement)	7 lbs.
Trace mineralized salt	7 lbs.

**Table 2. Antibiotics for Calf Feeding**

Supplement	Grams per pound of supplement	Amount fed each calf, once daily during milk feeding period		Amount of supplement required to furnish 15 grams antibiotic per 1,000 pounds KSU calf starter
	(grams)	(grams)	(teaspoons)	(pounds)
<b>*AURECOMYCIN</b>				
Aurofac 25	25.0	1.5	0.5	0.6
Aurofac 10	10	3	1	1.5
Aurofac D	5.0	6	2	3
Aurofac 2A	3.6	8	3	4.2
Aurofac	1.8	16	5	8.4
<b>**Auromycin Crumbles</b>	2.6	10**	3**	5.8
<b>***TERRAMYCIN</b>				
TM - 50	50.0	0.75	.25	0.3
TM - 10	10.0	3	1	1.5
TM - 5	5.0	6	2	3.0
TM - 3.6	3.6	8	3	4.2
TM - 3+3	3	9	3.5	5

*\* American Cyanamid Co. \*\* Does not mix well with milk \*\*\* Charles Pfizer and Company*

### Table 3. Cost of Raising a Bucket Calf<sup>1</sup>

#### Birth to 3 months of age

Milk <sup>2</sup>	250 lbs @ \$	/cwt = \$ _____
Starter	300 lbs @ \$	/cwt = \$ _____
Hay	40 lbs @ \$	/cwt = \$ _____

#### Three months to 6 months

Concentrate mixture	360 lbs @	\$ /cwt = \$ _____
Hay	380 lbs @	\$ /cwt = \$ _____

#### Six months to 1 year

Concentrate mixture	540 lbs @	\$ /cwt = \$ _____
Hay	1 ton @	\$ /cwt = \$ _____
Estimated feed cost		\$ _____
Estimated overhead, labor, etc.		\$ _____

**Estimated cost of raising bucket calf** \_\_\_\_\_<sup>3</sup>

1. Cost will vary according to type of program, cost of feed, etc.

2. This cost can be replaced if surplus colostrum is stored for later use. Also, a good milk replacer will often be more economical to use than marketable whole milk.

3. Does not include original cost of calf.





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