

4-H Bucket Calf Project



Member & Parent Manual

- 1 To learn through a cattle project that fits my physical size and maturity level.
- 2 To learn proper health care and nutritional requirement of young cattle.
- 3 To learn basic cattle management skills without a large investment.
- 4 To learn basic record-keeping skills.
- 5 To better understand the feeder cattle and replacement cattle industries.

GENERAL RULES AND REGULATIONS

- 1 This project is open to 4-H and FFA members of all ages.
- 2 Any newborn or orphan dairy, beef or crossbred calf, calved between January 1 and May 15 this year, may be a project if in the possession of the member within two weeks of birth; identified by a 4-H tag in the right ear available from the Extension Office and identified on livestock project report (LS) by May 15. No bulls allowed; steers or heifers only. Second year Market Bucket/Bottle Beef must be tagged and weighed in at the Beef Weigh-in held in December and/or January.
- 3 First year calves must be bucket or bottle fed. (No nursing permitted after two weeks of age.)
- 4 An exhibitor may identify not more than 3 animals, but is limited to one 1st year bucket/bottle calf exhibited at the fair. This calf (1st year) may not be shown in other classes here this year. Second year Market Bucket/Bottle Beef must be the same calf that was shown as a 1st year calf the previous year and they must arrive at the fairgrounds on Sunday of fair week between 4-9 p.m. like other market beef. They will be housed with other market beef. This animal (2nd year) may not be shown in other classes (but only shown once in total) here this year.
- 5 Entries for 1st year calves should not arrive at the Fairgrounds until their weigh-in at the fair beef scale from **7:00 to 9:00 a.m. on Thursday of fair week**. The bucket/bottle beef show will start at 9:30 a.m. on Thursday in the north arena. Calves will be released on Thursday evening. 2 identical colored photos of the calf should be attached to the Project Report when it is turned in for the member's interview. One photo will be returned with records after evaluated by judges. The second photo will be kept by the beef committee and may be used to verify identification of the calf should it be exhibited as a Market Bucket/Bottle Beef the following year. Rate-of-Gain on 1st year calves will be calculated for member use only. The project information questionnaire should be turned in at the **Saturday interview** with the photos attached. Entries will be penned in the west end of Barn #1
- 6 4-H exhibitor should arrive at the interview in appropriate show ring attire with hand written records including 2 identical photos.
- 7 Classes will be shown at halter. Show sticks shall not be used on 1st year calves. The classes may be sub-divided depending on number of entries at discretion of the committee. There will be at least a separate class for each age division of members for 1st year calves only. Market Bucket/Bottle Beef will all be shown in one class unless numbers require a split class (split by fair weight).

- a) **Interviews will be held on Saturday, July 25**, on the fairgrounds from 8 a.m. to 12 noon at the Extension Office on a first come, first serve basis. Those

exhibiting only 2nd year Market Bucket/Bottle Beef will not interview.

b) The Show-ring exhibiting of 1st year calves will take place immediately following the market beef judging Thursday.

c) Judging of 1st year calves will be based on:

what member has learned about care and raising of the calf.

member's knowledge about general health, condition and management of the calf.

what member has learned about fitting and showing the calf according to beef or dairy guidelines.

80% oral interviews, 10% records, 10% showmanship

1 See the Fair Book for general health requirements.

2 Members may keep animals for breeding or market projects the following year or sell at private treaty.

10. Trophies will be awarded to top exhibitors in each age group based on the composite score of the interview, project report and showmanship: Junior, Intermediate and Senior.

1 Members are responsible for **cleaning out their stalls** at the conclusion of the fair.

2 **Championships may be won only once per grade/age division.**

Second Year Bucket/Bottle Calves

Second year market bucket/bottle must be tagged and weighed in at the beef weigh-in held in December and/or January. Second year market bucket/bottle beef must be the same calf that was shown as a 1st year calf the previous year and they must arrive at the fairgrounds on Sunday of fair week between 5-9pm like other market beef. They will be housed with other market beef. This animal (2nd year) may not be shown in other classes (but only shown once in total) here this year. Market bucket/bottle beef will all be shown in one class unless numbers require a split class (split by fair weight).

Some Points About Calf Care

1 Give the calf colostrums starting immediately after birth for at least the first 3 days of life. Leaving calf with its mother for 3 days if possible would be most desirable.

2 Do not overfeed or underfeed calf. Weigh or measure milk – following feeding recommendations. Feed milk once or twice daily at regular intervals. Warm milk to 100 F, especially during the first 3 weeks.

3 Use nipple feeder pail to prevent calf from gulping milk. However, nipples, calves and bucket must be washed and sanitized to prevent bacterial infections. Calf disease can also be passed from one calf to another by the nipple feeder.

4 Always have fresh water available in clean pail or from automatic drinking cup after calf is about 3 weeks old. Water pail should be in the front of the pen, opposite from the feed.

5 After calf is weaned, keep trace mineralized salt before it at all times.

6 Do not depend on silage as a source of feed for calves less than 6 months of age. Silage should not constitute all of the roughage after 6 months of age.

7 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 nearby the barn with shade and water can be satisfactory supplemental feed and provide the calf exercise and clean quarters.

Feed Recommendations

COLOSTRUM- Colostrum fed to calves as soon after birth as possible (ideally within 15 minutes and certainly within 4 hours) protects against disease. Early feeding of colostrums is necessary because:

- 1 new born calves have no antibodies to provide natural protection against disease until colostrums is received.
- 2 calves ability to absorb gammaglobulin (the disease protection component) is substantially reduced 24-36 hours.
- 3 calves may become infected with highly pathogenic (disease-causing) bacteria immediately after birth. Excess colostrums is a highly nutritious feed, but has little or no immunity properties (antibody protection) when the calf is more than a day old. Undiluted excess colostrums contain about a third more solids than milk or reconstituted milk replacer and are highly digestible. Storage and subsequent use of excess colostrums is highly desirable. It may be fed fresh; frozen or stored, then thawed prior to feeding.

MILK REPLACER – Milk replacers vary in quality. Study the feed tag. The best milk replacer contains at least 20% protein, all derived from milk products. The protein level should be 22-24% when chemically modified soy protein, soy isolates, or soy concentrates are used because plant proteins are less digestible than milk protein. Table 1 lists various sources of protein according to acceptability in milk replacers. Compare the protein sources listed on your milk replacer feed tag with this list.

Table 1. Protein Sources in Milk Replacers The fat level in a good milk replacer powder should be at least 10% and may run as high as 30%. The higher fat level tends to reduce the severity of diarrhea and provides additional energy for growth. Good-quality animal fats are preferable to most plant fat sources. Soy lecithin, especially when homogenized, is another acceptable fat source and improves mixing properties of the replacer.

A. Optimum	B. Acceptable	C. Inferior
Skim milk powder	Chemically modified	Meat solubles
Buttermilk powder	Soy protein	Fish protein concentrates
Dried whole whey	Soy concentrate	Distillers' dried solubles
Delactosed whey	Soy isolates	Brewer's dried yeast
Casein		Wheat flour
Milk albumin		
Oat flour		

Carbohydrate sources that the calf can use include lactose (mild sugar) and dextrose. Two common carbohydrate sources that should be excluded from milk replacers are starch and sucrose (table sugar).

Amount to Feed, Feeding Frequency, Age of Weaning

A prime consideration in raising the calf is to provide adequate dry matter for growth. For an 80-100lb. Holstein calf, 1 lb. of dry matter daily from milk to milk replacer is adequate from birth

to weaning at 4 weeks. Estimate the dry matter percentage in the liquid diet and dilute as necessary in relation to the total volume offered the calf (table 2 has guidelines).

Once-a-day feeding of milk-fed calves has proven successful except when calves are housed in the extreme cold or in otherwise undesirable environments. The keys to its success are keen observations to detect any sickness early, before it becomes acute and careful feeding of adequate nutrients without overfeeding.



Table 2. Dilution Rate for Various Liquid Diets for Calves Fed Once or Twice Daily

	Once daily feeding water = Ingredient + dry matter = 1 lb. dry matter	Twice daily feeding water = Ingredient + dry matter = 1 lb. dry matter
Type of milk % Dry Matter Lb./feeding-Daily	Lb./feeding-Daily	Lb./feeding-Daily
1 st milk colostrums	28 3.5 + 3.5 = 1.0	2.0 + 2.0 = 1.1
Pooled excel colostrums	16 6.0 + 0 = 1.0	3.0 + 1.5 = 1.0
Whole milk Holstein	12 7.0 + 0 = 0.8	4.0 + 0.0 = 1.0
Milk Replacer	88 .8 + 5.0 = 0.7	0.5 + 3.5 = .9

STARTER RATIONS – A good quality, palatable calf started should be offered early (i.e. 3 days of age) and certainly by the 10th or 12th day. The best calf starters are high in energy, free of excessive fines and contain about 16% protein (18% if calves are to be weaned before 4 weeks of age). To encourage more intake, they should consist of whole, coarsely ground, cracked, or rolled grains. Molasses (up to 5% of the mixture) improves palatability and minimizes fines and dust. Finely ground feeds become “pasty” and are undesirable. Whole grains, especially oats, can be fed with started rations to calves up to 3 months of age. Calf starters should be fed until calves are about 12 weeks of age. Intake should be limited to about 3 or 4 lb. per calf each day.

Many commercial calf starters are quite adequate and convenient to feed. Simple, home-mixed calf starters may be equally acceptable. Table 3 gives examples of some good rations.

Table 3. Example Calf Starter Rations



Ration

Ingredients	A	B	C	D	E	F
Corn, coarse grind	50	39	54	50	34	28
Oats, rolled or crushed	35		12	26	34	30
Barley, rolled or coarse grind		39				
Beet pulp, molasses						20
Corn cobs, ground					15	
Wheat bran		10	11			
Soybean Meal	13	10	8	17	15	15
Linseed Meal			8			
Molasses, liquid			5	5		
Dicalcium phosphate	1	1	1	1	1	1
Trace mineral salt	1	1	1	1	1	1
Vitamin A (I.U.)	200,000	200,000	200,000	200,000	200,000	200,000
Vitamin D (I.U.)	50,000	50,000	50,000	50,000	50,000	50,000
Total (lbs.)	100	100	100	100	100	100
Protein (% of D.M.)	16	16	16	16	16	16
Fiber (% of D.M.)	6	6	6	6	6	6

Hay or Silage for the Young Calf

While calves may begin nibbling on good quality hay as early as 5-10 days of age, it is not necessary to feed forages before 8-10 weeks of age. If forages are inconvenient because of the housing and management system, it may be desirable to incorporate a forage factor (more fiber) into the starter ration. Rations E and F (table 3) are examples of suitable rations for calves not receiving hay or silage. Corn silage should be limited before 3 months of age because of its high moisture content which can limit intake and growth.

Preventing Calf Scours

A number of different management practices encourage the development of scours in small calves. Avoid these if at all possible.

- 1 Overcrowding – provide 24 to 28 square feet of bedded area or about 20 square feet of building floor space for calves raised in confined, elevated stalls.
- 2 Inadequate ventilation – provide a minimum of 4 air exchanges per hour in winter, 15 in summer. Avoid drafts on the calf.
- 3 Wet, damp calves – adequate bedding, good ventilation and avoid spraying calves with water when cleaning facilities; help prevent calves from becoming chilled. Providing plenty of dry bedding in maternity stall is a must.
- 4 Overfeeding – irregular amounts and too much of the wrong concentration or wrong kind

of liquid diets are common cause of calf scours.

5 Low resistance – vitamin A, D, and E supplementation (oral or injectible forms) immediately after birth is helpful in increasing the calf's natural resistance to scours, especially if the colostrums received may be low in vitamin A content.

6 No first-milk colostrum – don't assume the newborn calf has nursed. 40 % of the calves born receive insufficient colostrum to be protected from the calf hood disease organisms found on the farm. Feed colostrum as soon as possible after birth (minimum of 2 quart of Holstein; 3 pints to the small breed calves.)

7 Dirty utensils – clean the feeding utensils thoroughly after each feeding. Store upside down to drain all water out. Small amounts of excess wash water are perfect areas for bacteria to multiply rapidly.

Use of Electrolytes

Early detection of sickness and prompt corrective action is important to prevent scours. When a calf has only a mild case of scours (not off-feed, not depressed and no fever), feeding an electrolyte solution usually is beneficial.

A good procedure to follow is to:

1 Remove or drastically reduce the amount of milk or milk replacer offered.

2 Feed only water containing an "electrolyte" for three to six feedings, depending on how soon feces become firm. Oral electrolyte solutions can be purchased commercially or can be made by combining these kitchen ingredients:

- 4 teaspoons of table salt
- 3 teaspoons of baking soda
- ½ cup of "light" corn syrup
- 1 gallon of water

Frequent feeding of smaller volumes is advantageous. A 100lb. calf should consume about 5 quarts (10% of body weight) daily.



Management

Identify calf immediately after birth. Use an eartag.

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.

In mild weather, calves may be exercised out-of-doors, but exercise is not absolutely necessary for pre-weaning calves.

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 outweigh all advantages obtained from their use. Wash and sterilize calf pails. Keep the calf pails as well as the dishes you eat from.

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.

Observe groups of calves frequently for sucking.

When calves are unthrifty, check for external and internal parasites.

Always have fresh water available in clean pail or from automotive drinking cups after calf is about 3 weeks old.

Housing

Place calf in a pen (4'x6') until weaned. Keep pen well-bedded and free from drafts.

Thoroughly clean and re-bed pen frequently.

Equipment used for feeding in calf pen should be constructed of materials that are easily cleaned.

Place drinking cups and feeding boxes so that top is about 20" from the door.



Information for this project was adapted from "Feeding the Dairy Herd", University of Illinois, at Urbana-Champaign, Iowa State University, and "4-H Bucket Calf Project", Kansas State University

**Interviews are the Saturday just prior to fair between
8
AM and Noon at the Extension Office.**

**Please attach 2 identical colored photos to the next
2
pages. Hand write your records.**

Bring the next 6 pages to the judge at the time of your interview. These can be stapled or placed in a clear report binder. (No 3 ring binders)

The first photo sheet will be removed and given to the beef committee to be used for verification purposes next year.

Records and comments will be returned to 4-H members after the show. Scores are posted on the barn wall approximately 30 minutes after the conclusion of the Bucket Bottle Show.

JOHNSON COUNTY BUCKET/BOTTLE CALF PROJECT

Place colored photo here

MEMBER NAME _____ **AGE** _____

CLUB _____

Calf Ear Tag Number _____

Date Project Started _____

Calf Birthdate _____

This form must be taken to the interview for evaluation and use by judges.

Beef Committee Copy

Place colored photo here

MEMBER NAME _____ **AGE** _____

CLUB _____

Calf Ear Tag Number _____

Date Project Started _____

Calf Birthdate _____

This form must be taken to the interview for evaluation and use by judges.

JOHNSON COUNTY BUCKET/BOTTLE CALF PROJECT

MEMBER NAME _____ AGE _____

CLUB _____

	1st Calf	2nd Calf	3rd Calf
--	-------------	----------	----------

Calf Ear Tag Number

Date Project Started

Calf Birthdate _____

Source of Calf:

P = Purchased

F = Born on our farm

O = Other

Color of Calf

Breed of Sire

Breed of Dam

Value at Start (actual or estimate)

Weight at Start (actual or estimate)

1 What was your goal for this project? (What did you want to learn?)

2 How did you go about working toward your goal?

This form must be taken to the interview for evaluation and use by judges.

a) How did you decide where to get your calf?

b) Describe facilities where you housed your calf: (pen size, location, water/feeders)

c) Describe the feeding program you followed* (type of feed, amount per day, etc.)

***First 3-4 days you had the calf**

***Next 3-4 weeks**

***After you had the calf a month**

This form must be taken to the interview for evaluation and use by judges.
JOHNSON COUNTY BUCKET/BOTTLE CALF PROJECT

3. HEALTH

a) Did your calf have any health problems? (what was it and how did you treat it?)

b) What did you do to prevent health problems & keep your calf healthy and growing?

c) Identify the biggest problem you had with the project and what did you do to solve it?

4. What were the most important things you learned as you worked toward your goals?

This form must be taken to the interview for evaluation and use by judges.
JOHNSON COUNTY BUCKET/BOTTLE CALF PROJECT

5. What idea or plan do you have for the future based on what you have learned?

Total for All Bucket/Bottle Calves

Feed & Expense Summary: (required)	POUNDS	CASH COST	Non-cash cost (items on hand)	TOTAL COST
Feeds: Milk Replacer				
Starter				
Hay				
Other feeds				
Medications	*****			

Veterinarian Expense	*****			
Bedding	*****			
Other Costs, Misc.	*****			

TOTAL COSTS/POUNDS		A.		B.
Purchase Price/Value of Calf(s) when project started	Calf #1	Calf #2	Calf #3	

FORM MUST BE COMPLETED TO THIS POINT FOR INTERVIEW!!!

Required: Profit & Performance Summary:

(this portion to be completed Thursday after weigh-in and keep for your records)

1. Weight at Fair _____ lbs.

2. Starting Weight of Calf brought to Fair _____ lbs.

3. Total days on feed _____ days

4. Total Weight Gain (Line 1-Line 2) _____ lbs.

5. Average daily gain (Line 4 divided by Line 3) _____ ADG

6. Cash Cost/lb. of Gain [(A. divided by No. of Calves)/Line 4] = \$ _____.

7. Breakeven price per lb. [Value of Calf when project started +(B. divided by No. of Calves)] divided by Line 1 = \$ _____.

This form must be taken to the interview for evaluation and use by judges.