4-H CLUB
DAIRY CALVES

Montana State College Agricultural Extension Service
Bozeman
A Real Job

Only those 4-H club members who have a keen interest and who really like the work which goes with management and care of livestock should go into livestock club work. This truism applies particularly to the dairy calf project for dairy cattle are most responsive to good feeding, kind and careful treatment, and comfortable, sanitary quarters.

The club member who undertakes to feed and manage a dairy calf must have a high degree of patience and perseverance. Development often seems slow. A lag in interest and effort after the first few weeks means failure. A good dairy cow is the result of the utmost in care and attention and this is the goal in the dairy calf project. It is necessary of course, that the calf be of the desired breeding, after that it is up to the club member. Those who lack the interest and energy necessary for success should not engage in the dairy calf project.
4-H Club Dairy Calves

By

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The business of raising a good dairy calf starts before the calf is born. Generally it is likely that club members in the dairy calf project will take over the care and management of their calves after weaning, but the members should know how to care for the cow at calving time. Therefore, this bulletin briefly presents the essentials of successful feeding, care and management of dairy calves, starting with the care of the cow.

Feeding And Management

Care of the Cow

A careful breeding record should be kept of all cows in the dairy herd so that the owner will know when each will freshen. At freshening, the cow should be put in a large box stall unless the weather is warm and she is on good pasture.

As calving approaches, the cow's udder becomes more distended and muscles on either side of the tail head loosen, giving a sunken appearance to those parts.

From these and other indications the dairyman knows that calving time is near. The cow should not be disturbed but the attendant should be present to give assistance if necessary.

Care of the Calf

When the calf is born, examine the cow's teats carefully and clear them of dirt and milk serum. Clogged teats often cause udder trouble and hinder the calf in getting proper nourishment. If the calf is weak, or the cow fretful, it often is necessary to help the calf to nurse. The calf should be left with the cow one or two days. If the calf is weak, or if the cow's udder is caked, and tender, three or four days is preferable.
At weaning time, remove the calf to a clean, well-bedded pen while the cow is out of the barn. If removed in this way so that cow and calf cannot hear or see each other they soon become accustomed to the separation.

![Teaching the calf to drink milk.](image)

Wait 12 to 18 hours after removing from the cow before attempting to teach the calf to drink out of a pail.

Before milk is offered, the calf should be petted and handled gently to win its confidence. A frightened calf, and one that is several days old, often is reluctant to suck the fingers, the first step in getting it to drink milk. If the calf refuses to suck the fingers, it may be backed gently against a wall or into a corner, its head held upward and a small amount of milk poured from the pail into its mouth. The taste of the milk often will cause the hungry calf to suck the fingers to obtain more. The nose then should be gently lowered into the bucket. Remove the fingers slowly from the calf's mouth and rest them upon the calf's nose. If the calf jerks its head up, the milk drinking lesson will have to be repeated. One or two lessons usually are enough. Never try to force the calf to drink.
Use 
Mother's Milk
Feed the calf its mother's milk for the first five or six days. The milk should be sweet, clean and of body temperature; it is well to feed it immediately after it is drawn. Scours often result from cold milk in dirty, sour buckets.

Over-feeding and irregular feeding are other common causes of scours (indigestion), an ailment which frequently results in sickly, poorly developed calves. Feed regularly and moderately to insure health and steady gains. One pint of milk per day for each nine pounds of live weight is about right. A 90-pound calf should get about 10 pints of milk every 24 hours in two or three feedings. Increase the milk only as the calf grows.

Feeding 
Skim Milk
By a little effort calves can be taught to eat grain when they are four weeks old. At that time a gradual change from whole to skim milk also may be made. The change to skim milk should take a week or 10 days. A sudden shift is likely to cause indigestion. As the calf increases in weight increase the amount of skim milk. A calf three to six months old should get from 18 to 24 pounds of skim milk daily. Feed skim milk for at least six months and longer if available.

Starting Grain Feeding
The calf should be taught to eat grain as early as possible, usually when about four weeks old. To train the calf to eat grain, place a few kernels of grain in the milk bucket when the calf finishes its milk. A little grain also may be trickled into the calf's mouth when it sucks the fingers after drinking milk. Some dairymen also encourage grain eating by placing grain before the calf and leaving the animal in the stanchion for an hour after feeding milk.

Until the calf is 10 weeks old it should have all the grain it can eat, after that it should receive at each feeding only what grain it will eat in a few minutes, the amount being governed by the condition of the calf. Since skim milk contains all the nutrients found in whole milk except butterfat, the grain ration should consist largely of fattening grains. Whole oats with cracked corn, barley or wheat, make a good feed with skim
milk. Five to 10 per cent of linseed oil meal and 10 to 15 per cent dried molasses beet pulp may be added to the grain mixture after the feeding of skim milk is discontinued.

Here are three suggested grain rations which go well with skim milk and alfalfa or mixed hays:

I. When a mixture of legume and grass hays is fed:
   - Rolled barley or corn..............2 parts
   - Whole oats ................................5 parts
   - Dried molasses beet pulp...........1 part

II. When cereal or grass hays are fed:
   - Rolled corn or wheat..............4 parts
   - Whole oats ................................5 parts
   - Linseed oil meal......................1 part

III. When alfalfa hay is fed:
   - Rolled barley, corn or wheat.....4 parts
   - Whole, or ground oats..............6 parts

Many dairymen prefer using whole oats only.

Raising Calves on Milk Substitutes

On farms where whole milk is sold it may be desirable to raise the calves on a milk substitute after they are a few weeks old. In this event a commercial calf meal, or a home-prepared meal may be used. In the use of a commercial meal it is advisable to follow the directions of the manufacturers.

The following mixture has given very good results at the Montana Agricultural Experiment Station when fed with choice leafy pea green alfalfa hay.

Skim milk powders..........................200 pounds
Cracked yellow corn........................250 pounds
Steam rolled wheat.........................250 pounds
Dried molasses beet pulp..................100 pounds
Ground oats ..................................100 pounds
Soy bean meal...............................35 pounds
Linseed oil meal.............................25 pounds
Blood meal ..................................20 pounds
Bone meal ...................................10 pounds
Salt ..........................................10 pounds

Total........................................1000 pounds
When this mixture is used the calves are fed whole milk until the calves are six weeks old. From then on the amount of milk is gradually reduced until the calves are about eight weeks old. Then milk feeding can be discontinued. The calves are taught to eat the meal at an early age. The amount is gradually increased until about 1.65 pounds are fed daily, depending upon the calf. As the calf increases in size and additional grain feeding is desired, the meal may be supplemented with ground oats or a mixture of the common grains. In winter, when the calves are not out on pasture, they should have the run of a sunny lot during the warm part of the day.

The best hay for young calves is a mixture of fine quality grasses and alfalfa. Alfalfa when fed with skim milk is rather laxative for calves under three months, but excellent results are obtained after this age. Cereal and millet hays are not very satisfactory. Give calves a little more hay than they will eat. Remove the coarse left-over stems from manger daily. After calves are three months old they may be fed a little silage if available.

When calves are on good pasture they need no other roughage. Hay or green crops may be fed when pasture becomes short and dry. Calves under two or three months will do better on dry hay than on "watery," early spring pasture. When on pasture, calves should have shelter to protect them from flies and heat.

Plenty of fresh, clean water is always necessary. Milk is not a substitute for water. The calf should have access to plenty of fresh, clean water at all times, or it should be provided twice daily.

Salt is another essential that should be available at all times. Use good, granulated stock salt.
Pens and Stanchions

A 5x5-foot pen for each calf until it is two to four weeks old is desirable. After this age several calves may be put together in a larger pen. The individual pen permits more attention for each calf and prevents calves from sucking one another. When several calves are put in a large pen stanchions and a feed manger should be provided along one side of the pen. A partition between each stanchion prevents calves from upsetting milk buckets and eating each other’s grain.

A clean, deep bed of straw should be provided for each calf. Pens should be of good size, well-lighted, dry and free from drafts. Dark, damp, dirty quarters often cause indigestion and poor growth. In winter, after calves are three weeks old, they should be turned out for exercise on warm, bright, sunny days.

Common Troubles and Their Treatment

Scours
Indigestion
Diarrhea

Common calf scours, also called indigestion and diarrhea, is a common and troublesome disease among calves raised by hand, frequently resulting in stunting and death. Common causes are too much milk, cold milk, sour milk, dirty buckets, drinking too fast,
too much laxative feed such as bran, oil meal, legume hay and succulent pasture; spoiled feeds, sudden changes in feeding, and damp cold pens.

Find the causes and remove them. Reduce the milk ration to one-fourth by substituting warm water. Gradually increase the milk to normal as the calf improves. In severe cases also give the calf one and one-half to two and one-half ounces of castor oil. Follow this with a teaspoon full of the following mixture in the milk at each feeding: 1 part Salol and 2 parts sul nitrate of bismuth.

**Caution**

Do not confuse common scours with white scours, a highly infectious disease affecting calves shortly after birth. White scours can be detected by light colored, offensive smelling droppings. It usually causes death within 48 hours. Call a veterinarian for white scours.

For the small gray louse used powdered sabidilla seed. With a large salt shaker dust the powder over neck, back and sides of the calf. Two or three light applications during the winter are usually enough. Do not apply when the calf is wet.

For the large blue louse, a mixture of 3 parts mineral oil and 1 part kerosene is recommended. Mix and apply lightly with a cloth or brush, rubbing against the hair. Two applications of "Black Leaf 40," mixed one part to 1000 parts of water and applied 10 days to two weeks apart is also effective.

Ringworm which causes the white scabby formations around the eyes of calves, usually during winter and spring months, can be cured by frequent applications of used crank case oil applied with a brush every day or two for 10 days or two weeks.
Removing Horns and Extra Teats

When the calf is 3 to 10 days old clip the hair over the head and rub the very tip of the horn button with a moistened stick of caustic potash until a small bean-sized white chafed spot appears. If the caustic potash is inserted in a piece of rubber tubing it will not burn the hands. Caustic potash is poisonous and should be kept in a sealed bottle. It may be obtained at any drug store.
Extra teats detract from appearance and may otherwise be undesirable. They should be removed when the calf is young. Apply iodine or other good disinfectant and snip the teat off with sharp scissors. A rudimentary or extra teat also may be removed by placing a tight rubber band around it, causing it to slough off.

The following table will serve as a guide to club members, indicating the approximate weights heifer calves may be expected to attain at different ages when properly fed and managed.

<table>
<thead>
<tr>
<th>Months</th>
<th>Holsteins</th>
<th>Shorthorns</th>
<th>Guernseys</th>
<th>Jerseys</th>
<th>Ayrshires</th>
</tr>
</thead>
<tbody>
<tr>
<td>At birth</td>
<td>90 pounds</td>
<td>55-60 pounds</td>
<td>55-60 pounds</td>
<td>140 pounds</td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>220 pounds</td>
<td>140 pounds</td>
<td>140 pounds</td>
<td>260 pounds</td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>360 pounds</td>
<td>260 pounds</td>
<td>260 pounds</td>
<td>380 pounds</td>
<td></td>
</tr>
<tr>
<td>9 months</td>
<td>520 pounds</td>
<td>380 pounds</td>
<td>380 pounds</td>
<td>490 pounds</td>
<td></td>
</tr>
<tr>
<td>12 months</td>
<td>680 pounds</td>
<td>490 pounds</td>
<td>490 pounds</td>
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</tbody>
</table>

Preparing Calves for Show

The show ring is not the aim nor the end of 4-H calf club work but exhibits at fairs stimulate interest and provide a yardstick by which results may be measured. Many club members do exhibit their stock and it is desirable that such showing be made as creditable as possible. The remaining portion of this bulletin gives some of the important points in selecting and preparing dairy calves for exhibit.

Selecting the Calf

Breed characteristics are important in the show ring. Therefore, when selecting the calf for exhibition—and this should be done well in advance of the show so as to allow ample time for feeding and fitting—the club member should have in mind the ideal characteristics which are recognized by judges and breeders for the breed. Breeders, extension agents and others can give the club member the desired information, and literature
of breed associations is always available. The first step is to select the calf carefully, which means that the club member must become a good judge of the breed in which he is interested.

Feeding calves for the show ring is not materially different than the methods already discussed. The club member should endeavor to have his calf as large as possible and to carry a medium amount of flesh. Pasture grasses, roots, silage and oil meal produce a soft, pliable skin, and fine, silky hair—points of great importance in the show ring. The grain ration of the show animal should contain from 5 to 15 per cent oil meal. Dried beet pulp soaked for 12 hours, into which the dry grain ration is mixed just before feeding, makes possible more rapid gains and the desired fill in the show ring. Mixed grass and legume hay is preferable just before and during the fair. It may take three to four months to get an animal in good show condition. It is well to discontinue feeding silage, roots or grass a week before the exhibit. The calf should be kept in a clean, well-bedded stall in the barn most of the time while being fitted for the fair. The hot sun and flies should be avoided.

Fig. 5—Wash the calf by using good soap worked up into a heavy lather.
Teaching To Lead and Show

Neither the club member nor his calf will make a good impression in the show ring unless the animal is taught to lead. This training is best done when the calf is young.

There are just a few general essentials that are important: be kind, be gentle, be calm, be patient. A good rope halter should be made (get directions from the county agent). If the club member will lead the animal while another persons urges it on with a light switch, usually only a few lessons are necessary. After the calf leads readily then it should be taught to show. To show to the best advantage the calf should be taught to walk slowly, taking very short steps. Frequent stops should be made and at each stop teach the calf to stand with all four feet placed well under the body with head held in medium high position and the back and rump straight. A slight jerking on the halter should be all that is necessary to bring a well trained animal into the desired pose.

Washing and Grooming

Six weeks before the exhibit the calf should be thoroughly washed with toilet soap and warm water. Repeat the day before the show. Stained white hair may be bleached by rinsing several times with water containing clorox. Rinse off all soap and suds with

Fig. 6—A homemade, inexpensive, but suitable blanket.
clean water. Immediately after rinsing brush off all excess water and cover the calf with a heavy blanket until dry. It is best to put a blanket on the calf during the entire fitting period. This keeps the skin soft, and gives the hair the desired silky appearance. A good blanket may be made from burlap, lined with flannel. Wash the calf early enough before the exhibit so that it will be dry and warm when it goes into the ring.

Brush the calf vigorously with a soft brush or a rubber curry comb 10 or 15 minutes each day after the first washing. The steel curry comb should be used only to clean the brush and to remove dirt from thighs and legs. Just before showing, the calf should be wiped with a flannel cloth dampened slightly with sweet oil. The day before the show, wash and braid the tail into five or six braids. Undo the braids and comb the switch just before showing to give the desired fluffy appearance.

If the hoofs are too long they should be trimmed to the proper length with a pair of nippers.

Preparing Horns and Clipping

To bend or shape a horn to conform to breed characteristics it may be scraped thin on the side toward which it is to bend. Weight or horn train-
ers may also be used for this purpose. The work of shaping horns should start with calves 6 to 8 months old.

Before exhibiting, horns should be carefully polished. First remove all rough parts with a wood rasp, and scrape with glass to remove ridges. Then rub with fine emery cloth, first working around the horn and finishing with lengthwise strokes. When perfectly smooth the horn is ready to polish with a paste made of powdered pumice stone and sweet oil or a commercial metal polish applied with a soft flannel cloth. A final rubbing should be given with a dry flannel cloth.

Only the head, ears, neck and tail should be clipped. In
trimming the tail begin clipping far enough from the end to leave a good full switch. In all cases no rough edges should be left. A good machine is necessary, and it is well to have the assistance of someone with experience.

Every detail of training and preparation must be done before the calf is shown. Here is the final test of how well the club member has done his work.

If properly trained the animal will show to the best advantage. Upon entering the ring it is best to keep the animal moving slowly until asked to line up. Six or eight feet should be left between each animal in the line. Be alert, keep one eye on the animal and the other eye on the judge and keep posing the animal to the best advantage during the entire judging period. Remember the judge is looking for reasons why he should place one animal over another and if he finds an animal in an awkward pose, it may lose its relative position. If an animal steps out of line it is best to lead it out in a large circle coming back into position again.

Do not stand so as to obstruct the judge’s view of the animal but instead show your animal to the judge and be ready at all times to move the animal as requested.

Promptness, courtesy, and a smile in defeat, are characteristics of a good showman.

Do not give the calf a large amount of cold water just before going into the ring, as this causes the animal to hump its back and the hair to look rough.

Find out from the superintendent when the class will be called into the ring. Feed and water well in advance so the animal will be comfortable and at the same time have the desired “fill” when in the ring. Do not feed too heavily. Be ready when the call comes.

While at the show the calf should be kept clean and well groomed at all times. Stalls should always be clean and well-bedded with straw. Remove litter at once. At a show the club member is under careful scrutiny, as well as the calf—so make the best showing possible.