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 the care and management of livestock should go into livestock club work. This truism applies particularly to the dairy calf project because 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 good 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.
Generally, 4-H dairy club members start with a calf that is only a few days old. The raising of a good dairy calf, however, starts with its sire and dam. Therefore, this bulletin briefly presents the essentials of selecting, raising and showing dairy calves starting with the sire and dam.

Selection, Feeding and Management

Selection of Sire and Dam

Club members should always aim to select a calf sired by a good type, purebred bull of known high producing ancestry. The calf’s mother should be a high producing animal of the same breed. She should be of good type, with a large, shapely, well attached udder with well placed teats of convenient size. Club members should not waste their time and feed in raising an off-colored calf of inferior breeding.

Care of the Cow

An accurate breeding record should be kept of all cows in the herd so that the owner will know when to dry a cow up and when she will freshen.

The dam should be given a seven to eight weeks dry period. During this period she should be liberally fed so that she will be in a good, thrifty and moderately fleshy condition at calving time. If considerable grain was fed during the dry period it is advisable to start decreasing the grain ration about a week or 10 days before she is to freshen. Little or no grain should be fed the last two or three days. Some dairymen recommend giving a slightly laxative feed such as two or three pounds wheat bran or dried molasses beet pulp, moistened with warm water, for a few days before calving.

At freshening, the cow should be put in a large box stall unless the weather is warm and she is on a good pasture near by.

As calving approaches, the cow’s udder becomes more distended and muscles on either side of the tail head loosen, given a sunken appearance to those parts.
From these and other indications the dairymen 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 clean them of dirt and milk serum. Clogged teats may cause udder trouble and hinder the calf in getting proper nourishment. If the calf is weak, or the cow fretful, it may be necessary to help the calf to nurse. Some dairymen take the calf away from its mother as soon as it is born while others leave the calf with its mother from one to three days. There are advantages and disadvantages with both methods. If the calf is weak it will likely get a better start if left with its mother two or three days.

**Weaning Calf and Teaching to Drink**

If the calf is taken away from its mother, at birth, or when the cow is out of the barn and placed where she cannot see nor hear it she will soon cease to worry.

You will have no difficulty in teaching the calf to nurse a nipple bucket. If the calf is two or three days old when weaned from its mother and you wish to feed it from an open bucket then it is best to wait 12 to 18 hours after weaning before you attempt to teach it to drink milk.
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 fed 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 or ten pounds of live weight is about right. A 90-pound calf should get about 9 or 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 regularly 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 about a week. A sudden shift may cause indigestion. As the calf increases in weight increase the amount of skim milk. A large calf three to six months old should get from two to three gallons of skim milk daily. Feed skim milk for at least six months and longer if available.

**Starting Grain Feeding**

Start teaching the calf to eat grain when two 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 and vitamin “A”, the grain ration should consist largely of fattening grains. Whole oats with cracked corn, barley or wheat, make a good feed with skim milk.

Here are three suggested grain rations which go well with skim milk and hay:

I. When a mixture of legume and grass hays is fed:
   Rolled barley, wheat or corn .................. 40%
   Ground or whole oats ........................ 60%

II. When cereal or grass hays are fed:
    Rolled corn, wheat or barley .................. 35%
    Ground or whole oats ........................ 55%
    Linseed oil meal .............................. 10%

III. When alfalfa hay is fed:
     Rolled barley, corn or wheat .................. 60%
     Whole, or ground oats ........................ 40%

Many dairymen prefer using whole oats only.

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 home prepared meal is recommended when fed with choice, leafy, pea green alfalfa or mixed legume or grass hays.
Dried skim milk or dried buttermilk & 100 lbs. 
Soybean oil meal & 200 lbs. 
Rolled oats & 300 lbs. 
Rolled barley, wheat or corn & 380 lbs. 
Sterilized bone meal & 10 lbs. 
Iodized granulated stock salt & 10 lbs. 

1000 lbs.

When this meal is used the calves are fed whole milk until they 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 two 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.

Skimmilk or milk substitutes should be fed until the calf is in good, thrifty condition and at least six months old. After that, a mixture of common feeding stuffs such as 30 percent ground wheat, barley or corn; 50 percent ground oats and 20 percent dried molasses beet pulp with good legume hay will give good results. If the roughage consists largely of grass or cereal hays or a poor grade of legume hay then 10 to 15 percent linseed or soybean oil meal should be added to the grain mixture. 25 percent wheat bran can be substituted for the oil meals.

**Roughage**

The best hay for young calves is a mixture of fine quality pea green grasses and alfalfa. Alfalfa when fed with skimmilk 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.

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

Granulated iodized stock salt should be available at all times.

A 5x5-foot pen for each calf until it is two weeks old is desirable. After this age the calf may be kept in an individual stall, see Montana Extension Circular No. 128 “The Montana Dairy Calf Stall,” or several calves may be put together in a larger pen. The individual pen or stall 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**

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.

**Indigestion**

**Diarrhea**

**Treatment**

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 ful of the following mixture in the milk at each feeding: 1 part Salol and 2 parts subnitrate of bismuth. Another effective treatment is to give a 100-lb. calf 5 grams Sulfapyanidine morning, noon and night and, if necessary through the second day, but not longer.

Some dairymen use a nipple bucket to prevent scours.

**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.
Treating Lice and Ringworm

For the small gray louse use powered sabi­
dilla seed. With a large salt shaker dust the pow­
der over neck, back and sides of the calf. Two or
three light applications during the winter are usu-
ally 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.

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.

Figs. 3 and 4—Clip off the hair, then rub the spot with caustic potash.
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>Dairy Calf Weight</th>
<th>Holsteins</th>
<th>Guernseys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At birth</td>
<td>90 pounds</td>
<td>55-60 pounds</td>
</tr>
<tr>
<td>3 months</td>
<td>220 pounds</td>
<td>140 pounds</td>
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<tr>
<td>6 months</td>
<td>360 pounds</td>
<td>260 pounds</td>
</tr>
<tr>
<td>9 months</td>
<td>520 pounds</td>
<td>380 pounds</td>
</tr>
<tr>
<td>12 months</td>
<td>680 pounds</td>
<td>490 pounds</td>
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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 a 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. Breeders, extension agents and others can give the club members 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 percent 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 person 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 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 trainers 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.