

## *Care of Cow and Calf*

**I**N THIS CHAPTER we will discuss briefly the care of the cow that is going to calve, and the raising of her calf until time for it to freshen (if a heifer) or until it is of serviceable age, if a bull calf. Of course many of the points that already have been discussed also apply to the care of the cow and the raising of the calf.

### ***Drying Off the Cow***

The cow due to calve should be turned dry approximately six to eight weeks before calving time. Turning a cow dry is done so that the cow may be able to build up her reserve of minerals such as calcium, phosphorus, and potassium; and nutrients such as fat and proteins, which have been drained from her body by the previous lactation and the growth of the fetus that she is carrying.

The drying up time varies from cow to cow. Milking can be stopped immediately on some cows — if they are milking only a small amount and their udder is in a healthy condition, they may dry satisfactorily without further milking. The cow's udders should be checked closely several times a day during the drying up period for signs of any disease or mastitis. If the udder becomes tight from the accumulation of milk, the cow should be milked out completely dry to prevent damage to the udder attachments.

On the other hand, some highly producing cows are very difficult to dry up. It may be advisable to milk such cows straight through from one freshening to another, rather than risk the damage that may result from cutting down their feed too drastically or from skipping the milkings that would be necessary to turn them dry.

Ordinarily, when a cow is to be dried, the grain ration should be reduced and the cow milked just once a day for a few days, and then every other day, until milking becomes necessary only to relieve the pressure on the udder and prevent mastitis.

### ***Feeding the Dry Cow***

When the cow is dry, she should be fed well so that she will be in good condition at the time of freshening, but she should not be allowed to become overly fat. Cows that are too fat may have a more difficult time at calving, with a weaker calf. A cow that is fed too heavily, especially a heifer, will often have excessive inflammation in the udder that could have been avoided had she not been so fat or fed on such a heavy ration.

Ordinarily the regular fitting rations, either commercial or home mixed, will satisfactorily condition a cow for calving and her next lactation period. But often it is advisable to completely eliminate the corn from the rations of a cow or heifer that shows excess swelling in the udder. She should have plenty high quality legume hay to take care of the increased demands on her body from the calf.

Soaked beet pulp, if available, should be included in the cow's feed just before calving. If possible, beet

pulp should be fed all during the dry period. If this is a little inconvenient or expensive, it may be withheld until three or four days before calving, when its addition to the ration will help keep the cow's digestive tract open and normal. Constipation is especially to be avoided at this time. Many feeders believe that the feeding of silage should be discontinued for a few days previous to calving and a few days after calving — when it may be again added to the ration.

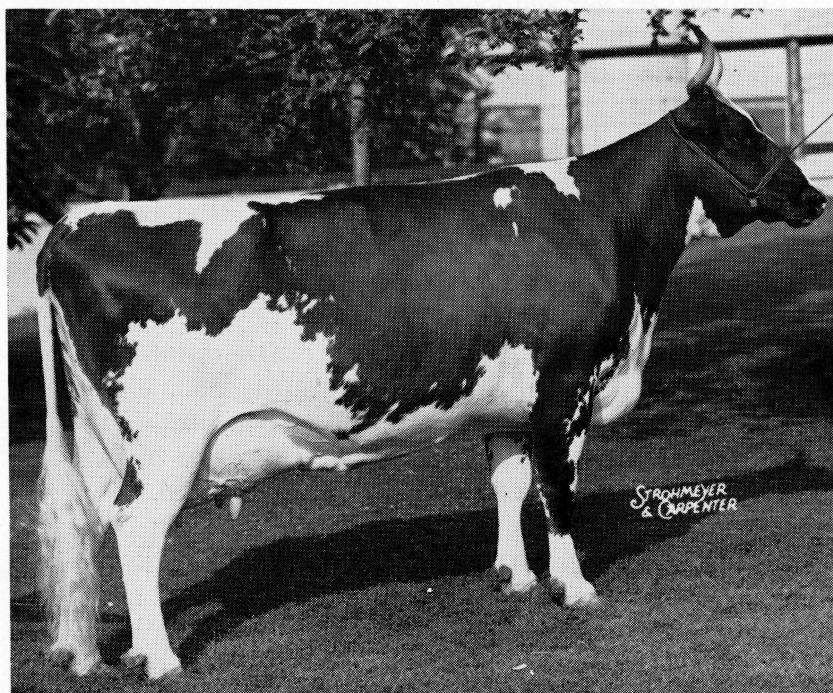
The pregnant cow should have plenty of exercise each day all through her gestation period, especially during the last few weeks. During her dry or fitting period she should not be kept confined to a box stall or stanchion, but turned out daily, weather permitting, to exercise. Cold weather is not sufficient reason for keeping her in the barn unless there are icy lots where the cow might slip, or a very cold rain.

A few days prior to calving time, place the cow in a clean, well-bedded box stall, so that she will be accustomed to the change and not fret about strange surroundings. The stall should be free from drafts, especially in the winter.

### **Care at Calving**

As the cow approaches calving time watch her carefully for indications that calving is soon to occur. Shortly before calving she will begin to bag up, and there will be a decided loosening and sinking of the ligaments that extend from the tailhead to the pinbones. These ligaments, one on either side, normally are very taut and feel nearly as hard as a bone. However, a few hours before calving, they will loosen and sink down

## FOUR-YEAR-OLD HEIFER



**Springlea Gay Lass**

Senior and Grand Champion, Illinois, Wisconsin, Indiana, 1946; Best Udder, Illinois, 1946; Senior and Grand Champion, Texas, Wisconsin, Dairy Cattle Congress, 1947; 1st Aged Cow, Dairy Cattle Congress, 1948; Reserve Champion, National Ayrshire Show, 1948; 9323 Milk 379 Fat 305 days 2X 2 years; 14802 Milk 573 Fat 365 days 3X 4 years; 17651 Milk 699 Fat 365 days 3X 6 years.

Notice the great length of this cow. She has a long body and a long level rump. Her udder is long from front to rear and the rear attachment is high and wide and the fore attachment is smooth and is well forward. Observe the straight hind legs, deep full chest and the strong clean head.



so that a depression can be seen, and when palpated will be very soft and loose.

When the cow is calving an attendant should be present to assist the cow, if necessary, or to call the veterinarian if any complications arise. Also, as soon as the calf is born, the attendant should remove the membranes or mucus from around the nostrils so that the calf will not suffocate, and slap the calf vigorously on its sides or hold it up by its hind legs to expel any fluid from its nostrils or trachea. This frequently has to be done to start the calf breathing.

After the calf is breathing normally, disinfect its navel with tincture of iodine by pouring iodine over the navel until it is well saturated. Then blanket the cow unless it is a hot summer day. Leave the blanket on until a few hours after the cow has cleaned. This helps the cow conserve body heat, and she will clean easier with fewer complications following calving.

Generally if a cow has not cleaned within six hours after the time she has calved, you may expect trouble. If she still retains her placenta the day following calving, a veterinarian should be called.

As soon as the cow has calved, she should be given a warm, sloppy bran mash, to which a teaspoonful of salt has been added. This mash can be made in a half-bushel bucket, using about two pounds of bran and filling the remainder of the bucket with warm water. While the cow is eating this mash, drag the calf into a position where it can nurse. It is not able to stand at this time, so it will have to be supported by elevating its shoulders somewhat in order for it to reach the teat.

If the cow is an easy milker, the calf should be permitted to nurse for a minute or two. The calf should not have too much milk at this time, but it is a good idea to get a little warm milk in its stomach, both for the nourishment and the antibodies and vitamin A found in the colostrum milk.

The surplus colostrum milk that the cow produces the first few days after calving and before the milk is saved for human consumption, can be mixed in with the milk that is fed other and older calves. It will do them no harm, and it is high in nourishment and certainly should not be wasted.

It is often advisable to milk cows before they calve. This may be done in first-calf heifers if their udder is making up too large with an excess amount of swelling. This pre-milking may tend to cut down on the amount of swelling and may prevent the udder attachments from breaking away from the body. Also, the heifer will be trained to the milking process at a time when her udder is not as tender as it is after calving.

Cows that freshen with swelling in the udder should have the udder massaged three or four times a day. This massaging should be done from the bottom of the udder upward, and a salve or a balm may be used to lubricate the skin while rubbing.

An older cow whose udder is getting excessively large before calving, or one that has had recent history of mastitis, may be pre-milked in order to avoid injury to the udder. This pre-milking may start anywhere from two weeks to a day before calving time, and often the cow will be giving quite a large amount of milk per

day by the time she has calved. These cows and heifers, of course, should be milked out completely at each milking. The calves that are born to these pre-milked cows apparently need no special attention.

Cows that have been pre-milked ordinarily can be milked out in a normal manner after calving. Cows that have not been pre-milked should not be completely milked out for the first few milkings. Enough milk should be taken out to relieve the pressure on the udder, and then an increasing amount taken out with each milking, so that the cow is being completely milked out dry in three days. This is to help prevent the cow from coming down with milk fever. Of course, if the cow has a diseased udder, it should be milked out completely at all times.

It is recommended that the cow have warm bran mash after calving. The first few feeds should be composed only of bran and oats mixed with soaked beet pulp. The bran and oats combined should not be more than a pound for the first regular feeding, then about a pound and a half for the next two or three feeds. Then the fitting ration can begin to be substituted for the bran and oats mixture. It is often advisable to feed it for the first two weeks.

First-calf heifers and smaller cows probably will be getting from  $3\frac{1}{2}$  to  $4\frac{1}{2}$  pounds of grain per day at the end of two weeks, while larger and older cows will receive correspondingly more grain. First-calf heifers should be fed very lightly for some time after calving, the amount fed being determined by their appetite and the swelling in their udder. Then if the cow is appar-

ently doing well and has a good appetite the regular milking ration can be started and substituted for the fitting ration — if the cow is at home in the milking string and not in the show circuit. If everything is normal, she can be brought to full feed in four to five weeks.

### **Care of the Calf**

It is advisable to feed vitamin pills to calves for the first three or four weeks, or until they are eating a substantial amount of grain. This probably will be at the end of the first month or six weeks. For the first month, calves should receive 15,000 International Units (or U.S.P. units) of vitamin A daily as well as 300 units of vitamin D per 100 pounds body weight daily.<sup>1</sup> After the first month a well-balanced ration will furnish the essential vitamins.

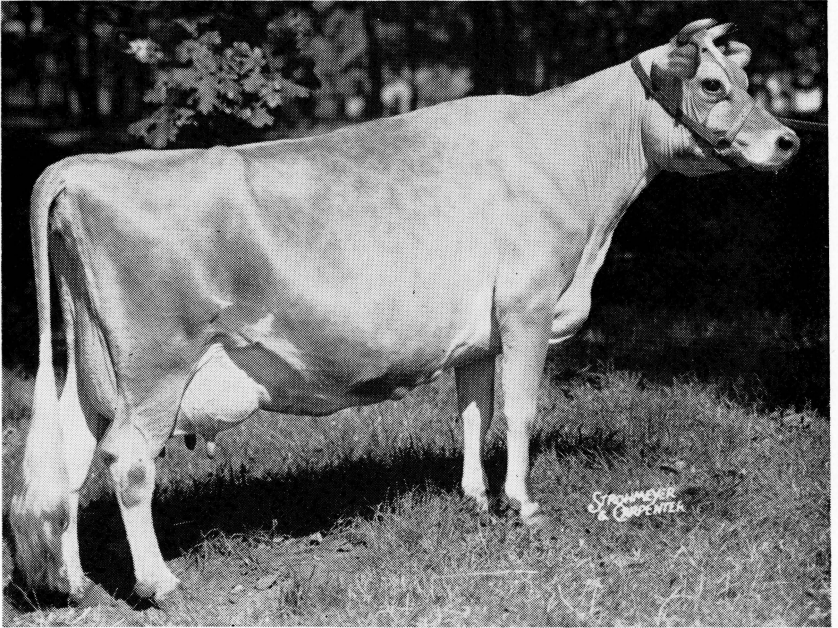
Calves should be left with their mothers and allowed to nurse at will for at least three days, and perhaps as much as a week. The condition of the calf's bowels should be noticed, and if they are becoming loose, the calf should be removed from its mother and hand feeding should begin.

If the calf does have diarrhea, it should be separated from the rest of the calves so as not to spread the disease. This calf should be put in a warm, dry, well-protected place, with a small blanket on it to conserve the body heat unless the weather is quite warm. The amount of milk fed to the calf should be reduced to about one-half the normal amount. Rebuilding to the normal amount

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<sup>1</sup> "Raising Dairy Calves," Bulletin, P. 106, Agricultural Experiment Station—Agricultural Extension Service, Iowa State College, Ames, Iowa

## AGED COW



**Curtiss Candy Sultana**

**Grand Champion, Wisconsin State Fair, 1951.**

This fine cow shows many of the things that are looked for in cows of any breed. Notice her head that shows such femininity and breed character. Her fine dairy-like neck blends well into her body and the withers are sharp. She is deep in the heart girth and has a very long, deep rib and body. Observe her flat level rump that is so desired. Notice how well attached her udder is both front and rear—how far forward it extends and that it is level on the floor.

of milk again should be started when the calf has recovered from the scours.

Regardless of whether the scours is a result of bacterial infection or from a digestive upset, medication should begin at once. The treatment will vary, depending upon whether or not it is from an upset stomach or bacterial causes. Young calves with the scours soon lose their strength and may be stunted or may not recover from the attack. It is best to have a veterinarian furnish the medicine, since he will know what to prescribe.

If the cow develops symptoms of milk fever, the calf should be moved to another stall immediately, so that if the cow falls down she will not injure the calf.

### **Nurse Cows**

Some people have successfully raised calves with nurse cows. In doing this, select a cow which has freshened recently, and which will take additional calves. Two, three, or even four calves may be put on this cow if she has a healthy udder and an ample amount of milk. The calves are put on the nurse cow when three or four days of age, or when they are removed from their own mother. They may be turned to her just at feeding time or left with her continually, whichever is the more satisfactory method. This way the calves take a little milk at a time, and their stomachs are not over-loaded. At an early age they will begin to eat hay and grain with their "mother," and then can be fed separately out of their own box.

Watch the nurse cow closely, for if she is a heavy



milker, the drain on her body by the continual secretion of milk may cause her to lose a good deal of flesh. Also, it will be difficult to observe her heat periods. It is best not to use a cow for nursing for more than three months if the calves are left with her all the time.

### ***Feeding by Pails***

When feeding calves by hand it is advisable to use nipple pails. The first few feedings of milk should be limited to  $1\frac{1}{2}$  to 2 pounds of milk per feeding, depending upon the size and breed of calf. The amount of milk given the calf may be gradually increased to a maximum of not more than 10 pounds of whole milk per day. The milk should be fed at body temperature, and the temperature of the milk should not vary from one feeding to another.

The calf pails should be cleaned thoroughly after each feeding by washing and rinsing in a chlorine solution, then turned upside down to dry. The nipples should be left in a chlorine solution between feedings.

Calves can be weaned from milk at  $2\frac{1}{2}$  to 3 months of age. At this age they should be eating grain and hay well enough to supply their body needs. Calves that are fed milk in too great a quantity, or over too great a length of time, may develop a coarseness about their throat and neck that is not desirable.

### ***Stalls for Calves***

Small calves, when taken from their mothers, should be put into either individual calf stalls about 4 by 5 feet in size or into small tie stalls. Tie stalls with a solid partition between each calf are about 26 to 30 inches

wide, and the calves are tied in these with a strap around their necks and a very light chain up to the front of the stall. This chain is attached to the wall approximately 2 feet from the floor. Several of these tie stalls may be put into a box stall in the form of a section that can be readily removed whenever necessary to move the calves to another stall or other quarters. In using this method, the calves can be let loose in the large box stalls for several hours each day to get their exercise, and tied up again in the evening at feeding time. They should be left tied all night until cleaning out time the next morning.

Keeping the calves in their separate stalls is advisable for several reasons: First, it is important that they be prevented from sucking each other after having their milk fed to them, as the sucking may ruin a quarter. By separate feeding from their individual feed buckets or boxes, you can tell how much each calf is eating. Also, the texture of the manure can be noted and any digestive upset or scours can be quickly detected and treatment begun. The calves also are somewhat segregated in case of an outbreak of scours.

In either the individual box stalls or the tie stalls a small feed box for the grain and a small manger for the hay should be provided so that the calves will begin eating both hay and grain at the earliest possible date.

While fresh air is very important, small calves should be raised in quarters that are free from drafts especially in the late fall, winter, or early spring. The ideal setup is to have a separate barn for the calves where the temperature and ventilation can be carefully controlled.

If they are in a box stall in the barn it may be necessary to put plywood or burlap sacks around the box stall to keep the draft from striking the calves and to keep the temperature from varying quickly one way or another.

Cleanliness cannot be overemphasized in working with calves. It is very important that all the manure and wet straw be removed daily and that the stalls be kept well bedded.

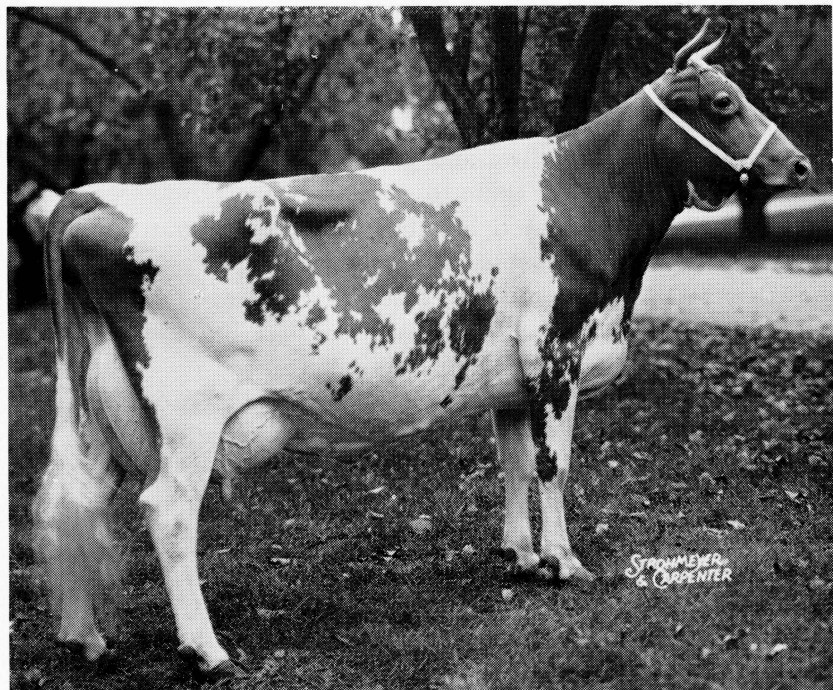
Calves of all ages should have exercise each day, and in the winter it may be necessary to turn the little calves loose into a large stall or pen inside the barn where they can play around for a while. This will help develop stronger, straighter legs and improve the general circulation and tone of the body.

In the summer the smaller calves up to three to four months can be turned outdoors for a while each morning for their exercise and sunshine. They should not be left out all day, but brought back into the barn where it will be cool and shady.

Older calves may be turned out for exercise during the winter too, the length of time depending upon the weather. If it is raining or very cold, they should be kept inside. During the summer, the older calves can be left out day and night and they should have a shed or pen where they can run in and out at will. The paddock that they run into should be large and furnish pasture and shade.

### ***Feeding Calves***

Calves of this age need shade and plenty of water and pasture that will furnish green feed with all its minerals and vitamins. However, these calves should



**Afton's Golden Marie**

Classified "Excellent;" Senior and Grand Champion, 1st Best Udder, National Guernsey Show, International, 1950; Undeclared Grand Champion wherever shown in 1948, including Northern Illinois Parish Show, Wisconsin, Minnesota, Indiana, Kentucky, National Guernsey Show, Royal Winter Fair; Winner, Best Udder, National Guernsey Show, 1948; Senior and Grand Champion, Missouri, Iowa, Nebraska, Oklahoma, Kansas, 1947; 9911 Milk 577 Fat, GG; 10938 Milk 596 Fat 305 days Jr. 4; 14417 Milk 785 Fat 6 years; 15661 Milk 819 Fat 7 Years.

This *aged cow* exemplifies points to be remembered in selecting show cows of any breed. Notice her alertness and style. Notice the breed character about her fine feminine head and neck. Her neck and shoulders blend together smoothly and she is smooth and well filled out behind the shoulders. Her chest is deep and wide and she carries a good deep rib. The topline is straight and the rump is long, level, and wide. Notice the udder with its high, wide attachment, levelness on the bottom, and the long forward attachment. The veining on the udder and abdominal floor is prominent. She has a strong straight set of legs.

have hay before them at all times. They are too young to rely on just pasture and grain, and the hay is absolutely necessary for them to develop properly.

Baby calves should be encouraged to eat grain and hay as early as possible. By the time they are weaned they will be eating well, so that when they are taken off milk they will not receive a severe set back but will keep right on growing and gaining.

The corn in the ration for the baby calves should be shelled or very coarsely cracked. Oats may be fed whole or crushed. Finely ground feeds are not desired.

Because growing calves require more protein than adults, the calf should have a ration fairly high in protein content. Some commercial calf rations have about the right protein content. Or additional protein may be furnished in the form of calf pellets, calf starters, or linseed oil meal. For the first months of the calf's life, the protein content should be around 18 per cent. With calves that are over 6 or 7 months of age, the protein content may be lowered. Calves should be fed enough grain so that they will keep growing rapidly, but they should not become overly fat, because this may leave a thickness about the neck that will be difficult to remove, and fatty tissue in the udder of heifers may interfere with the proper development of the mammary tissue.

Feeding beet pulp to calves is to be recommended. Naturally the amount to be fed will depend upon the size of the calf. For little calves, a very small, single handful of soaked beet pulp at each feeding will be enough, and for larger calves, up to a double handful is

probably sufficient. However, dry beet pulp may be mixed into the grain ration. This seems to work very well and eliminates the need for soaking the beet pulp at each feeding. About 25 to 50 pounds of beet pulp added to the above mentioned calf ration will be in the right proportion.

A good calf ration is:

- 100 pounds oats (whole or crimped, or very coarsely ground)
- 100 pounds wheat bran
- 100 pounds corn, cracked
- 50 pounds linseed oil meal
- 4 pounds salt
- 4 pounds mineral, such as steamed bone meal

In addition to the above ration, feeding calf pellets or calf starters at the rate that is recommended, generally one pound a day, will give the calf the extra protein and minerals that are needed for the best growth.

These pellets, or calf starters, are a commercial feed prepared by some of the feed companies. They are high in protein — about 20 per cent — and fortified with vitamins and minerals. When the calf is quite young, they will make up a relatively high percentage of the total amount of feed that the calf will get. This will bring the total per cent of the protein up to the desired level.

For the first year of the calf's life, it should be fed grain and plenty of hay. A fresh supply of water should be available at all times. Ordinarily a calf will not drink too much water, but there will be an occasional calf that



will have to be watched and have its water supply limited.

When the calf is about six months of age or so, the extra teats should be removed. If the calf is to be calf-hood vaccinated for Bang's (*Brucella Abortus*), six months is about the right time for this.

The feet on growing calves should be trimmed before they grow too long, as long feet may tend to develop crooked legs on the fast-growing, soft bones of the calves. Also, horn training should be started when the calf is old enough for horn trainers. If the calf is to be dehorned, this should be done with caustic sticks when the calf is a few days old.

### **Care of Yearlings**

Heifers that are 12 to 15 months of age and over, or yearling heifers, can be allowed to more or less rough it. That is, in the winter time they may be put in large sheds with other heifers of the same size, and fed silage and a small amount of grain. They should have hay before them in the racks at all times. The amount of grain fed depends upon their condition. Again we would like them in a good growing condition, not too thin or too fat. Two to four pounds of grain per heifer per day will generally suffice.

These pens of heifers must be watched closely, for there may be one mean one that will prevent the others from eating, or one very timid one that will not get up to the manger to get her share. In either case, such a heifer should be put in another pen of heifers more like her own disposition. Or the heifer may be put in the barn in a box stall or stanchion. Try to have heifers of

the same size and disposition together so that they will all get the right amount to eat.

During the summer you can put these heifers out on pasture, and if the pasture is very good they will need no other feed. However, if the pasture is crowded or not growing amply, put hay racks in the pasture and keep them filled with hay.

This hay need not be of high quality, for when on pasture, animals seem to eat a rather coarse type of hay just as well. Naturally, these heifers out on pasture should be checked each day on their general health, and whether or not they are in heat. The salt and water supply should be watched to make sure that there is an ample amount on hand.

When the heifer is about 17 months of age, if well grown, she is old enough to breed. Generally, better conception will be had if bred at this age, than if allowed to get several months older. After the heifer is bred, it is advisable to examine her for pregnancy about 45-60 days after breeding, to make sure she is in calf.

Yearling heifers that are pregnant will need no extra feed or extra attention until they are about six weeks to a month before calving. At this time they should be brought up to the maternity barn or wherever the cows are put to calve. This will give time to start feeding a little more grain, if necessary, in order to keep the heifer in a nice condition and not let her get too thin from the demands of the calf on her body. Also, the heifer will be getting more used to the additional handling and be quieter and less nervous at the time of calving.

As she approaches calving, her udder can be observed and pre-milking may be begun.