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C. H. Noller

N. J. Moeller

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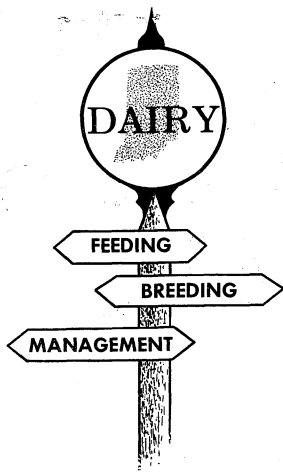
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## Tips on Feeding Newborn Calves

C. H. Noller and N. J. Moeller, Department of Animal Sciences

Raising your own herd replacements is the best and safest way to build a herd of good dairy cows. Purchased animals are potential carriers of disease and of unknown producing ability. But, a good herd sire and a healthy calf at birth solve only part of the problem. Some farmers have little difficulty raising calves while others lose a very high percentage.

Calf losses are often related to feeding and management practices. Most troubles are encountered from birth to about 30 days of age.

There is no guaranteed formula for successful calf rearing; but certain practices are necessary or beneficial. This publication discusses some of the practices and calls attention to potential causes of trouble.

### FIRST WEEK OF LIFE

#### Attention After Calf Is Born

When the calf is born see that he is breathing properly. You might need to remove mucus or phlegm from around his mouth and nose. Sometimes you may have to induce respiration.

After the calf is breathing normally disinfect the navel to help prevent disease. First squeeze out any material sticking to the end of the cord and then paint the navel with tincture of iodine and powder with alum.

Remove all soiled bedding and after-birth and help rub the calf dry if the cow fails to do so. Wash the cow's udder and teats with a chlorine solution. Help the calf nurse the first time.

#### Colostrum

Calve's blood contains no antibodies until after they receive colostrum. Colostrum is rich in globulin and antibodies that protect calves against disease organisms. Without colostrum many calves die within the first week from bacterial infection.

To protect calves and give them a good start, they must receive colostrum for at least 1 and preferably 2 or 3 days. It is not absolutely necessary that calves nurse the cow -- colostrum may be hand fed. Colostrum should be fed at body temperature, 95 to 100° F.

#### When to Wean

Some dairymen prefer to wean calves at birth and feed colostrum by bottle or pail. Others wait for 2 days and some wait until the milk is saleable or longer. The sooner calves are taken from the cow, the easier it is to train them to drink from a pail; good management practices must be followed or digestive disturbances may occur.

### Whole Milk

The change to whole milk may be made anytime after the calf has received colostrum. The change is usually made at 4 days when the milk is considered satisfactory for human consumption. Do not over-feed.

### Excess Colostrum

Colostrum is a more concentrated source of proteins, vitamins and other nutrients than whole milk. If fed at the same rate as whole milk colostrum can cause scours. It may be safely used for older calves if diluted to 2 parts colostrum and 1 part warm water.

### ONE WEEK TO WEANING

#### Amount of Milk or Liquid per Day

Overfeeding is probably the most serious cause of scouring and loss of calves. Experience shows that young calves should be somewhat hungry rather than overfed and scouring. Too much feed and liquid can upset the calf.

The usual recommendation for milk and liquid feeding is not more than 1 pound daily for each 10 pounds of body weight. On this basis, the maximum amount of liquid for an 80 pound calf would be 8 pounds as milk and/or water. We have observed that during cold weather, scouring difficulties decrease if less liquid is used; about 1 pound of liquid for each 12 1/2 pounds body weight--or 6 1/2 pounds for an 80 pound calf. In the summer, more water may be needed.

#### Fat Content of Milk

Use low-fat milk whenever possible. High-fat milk may cause digestive disturbances.

Skimmilk may be used satisfactorily after 10 days of age. Better results are obtained when the change is made gradually over a period of about 1 week. Calves fed skimmilk should be fed about 5,000 units of vitamin A and 1,000 units of vitamin D daily.

#### Number of Feedings per Day

Feeding three times daily is better than two; but the usual practice is to feed half the requirement in the morning and half in the evening. Regularity in feeding time should be practiced.

#### Clean Utensils

The necessity for keeping utensils clean cannot be overemphasized. Dirty utensils spread disease. The same standards of cleanliness should be followed for calf utensils as for milk utensils.

#### Temperature of Milk and Water

Milk and water should be fed at a temperature of 95 to 100° F for the first month. The change from warm to cold liquid should be gradual. Cold liquids may be fed if the temperature is constant from one feeding to the next. Radical changes in temperature may cause scours.

#### Nipple vs Open Pail

Although nipple pails are sometimes recommended, the evidence suggests that open pails are satisfactory for feeding calves at any age. Calves learn to drink more quickly from a nipple pail, but they have a tendency to retain the sucking instinct longer.

It is easier to train young calves to drink from an open pail than older and larger calves. Open pails are easier to keep clean. The decision, then, as to which to use rests with the feeder.

### Concentrates

Calves will begin to eat concentrates at about 1 week of age, depending on the amount of milk fed. The crude protein content should be about 14 to 16 percent with good quality hay and more with poor quality forages. It is not necessary to grind grain for calves until they are 7 to 8 months old. However, grinding assures better mixing and prevents separation of the ingredients. Whole grains or crimped grains are preferred by some dairymen.

Ingredients must be palatable. Molasses is sometimes added at the rate of 5 percent to stimulate grain consumption.

### Forage

Forage is usually offered free choice when calves are 1 week old. Some calves will eat small amounts immediately while others may eat practically none until 40 days or more of age. To encourage consumption, hay may be incorporated into the grain mixture (Purdue Mimeo DH-86, "Early Weaning of Dairy Calves").

Calves are able to use good quality pasture, hay, and grass and corn silage. Quality is very important. A legume-grass mixture is preferred over a straight legume because an all-legume forage may cause loose feces. Second and third cutting legumes usually cause more difficulty than first cutting.

### Cud Inoculation

Cud inoculation means taking a cud from an adult cow and feeding it to a calf. The objective is to seed the rumen with microorganisms to hasten rumen development and forage utilization. The value of cud inoculation is very questionable; but, sometimes unthrifty calves respond to cud inoculation.

### Scours

Scours are a symptom of digestive disturbances caused by either infection or by management practices. Scours are often separated into two types--nutritional and infections. Nutritional scours usually follow overfeeding and sudden changes in feed. They are characterized by a soft, watery feces with a normal color and odor. The appetite of the calf is normal. Nutritional scours can usually be cured by reducing the amount of feed and liquid for two or three feedings.

Infectious scours are caused by pathogenic organisms and must be treated with medicines. Infectious scours are characterized by a watery, light colored feces with a very offensive odor. The calves have little or no appetite and the eyes become dull and sunken.

Good sanitary practices and proper feeding procedures can prevent simple scours. Although some cases of scours are not serious in themselves, they may lead to complications. Often calves die because of a sequence of events. For example, overfeeding causes nutritional scours that cause loss of water and nutrients and weaken the calf. The weakened calf is more susceptible to infection and infectious scours may set in and lead to pneumonia which eventually kills the calf.

### Vitamins A and D

These vitamins are normally present in milk fat and, therefore, are not present in skim milk. Scours are one symptom of vitamin A deficiency. Calves consuming whole milk and good quality forage should be receiving adequate vitamin A and D. Commercial milk replacers are usually fortified with A and D.

Feed a minimum of 5,000 units A and 1,000 units D per day to calves if the ration is likely to be deficient.

### Antibiotics

Antibiotics are most useful under unfavorable environmental conditions. Maximum response is obtained from newborn calves and decreases rapidly with age. Some antibiotics stimulate growth while others show little growth stimulating effect.

Antibiotics are often used to treat scours but bacteria tend to develop resistance to specific antibiotics after continued use. This resistance requires changing antibiotics to find one that has not lost its effectiveness against a particular organism. Indiscriminate use of antibiotics for treatment of scours is not recommended.

### HOUSING

Calf pens must be kept clean, dry and well bedded. Fairly low temperatures are

not serious but dampness and drafts may cause scours. For more information see Purdue Mimeo DH-16, "Housing Dairy Calves" and Purdue Mimeo DH-48, "Loose Housing for Calves."

### FEEDING PROGRAMS

Many different feeding programs can be used to rear calves. Which program you use will depend upon the end result expected. But, no feeding program can be successful if the practices and precautions previously mentioned are neglected. In spite of our technological progress, successful rearing of calves still remains an art. Success or failure is determined by paying attention to the small details.