



HEIFER RAISING—BIRTH TO WEANING

27) OVERVIEW OF SOUND MANAGEMENT PRACTICES

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Good calf-raising practices include proper feeding, bedding, sanitation, ventilation, prevention of health problem and close daily observation. This publication presents a list of practices that contribute to raising healthy calves from the day of birth until weaning.

WITHIN THE FIRST HOUR OF BIRTH

Make sure the calf breathes

Breathing problems are usually associated with difficult calving (dystocia.) If a calf does not breathe immediately after birth, the nose and mouth must first be cleared of mucus. The calf may be laid with its head lower than the rest of the body or may even be lifted upside down for a few seconds to drain out mucus. However, this position should not be maintained because the weight of the viscera against the diaphragm hinders breathing. Once the airways are cleared, artificial respiration can be applied

by alternatively compressing and relaxing the chest walls.

Respiration may also be stimulated by tickling the calf's nostrils with a piece of straw or by pouring cold water on the calf's head.

Disinfect the navel

As soon as the calf is breathing normally, attention should focus on the navel. Sometimes, the navel bleeds. Usually, application of a clean piece of cotton is sufficient to stop the hemorrhage. In most cases, only a few centimeters of umbilical cord remain attached to the calf. Any blood inside the cord should be squeezed out before dipping or painting the cord with a strong iodine solution (7%) or other antiseptic (Figure 1).

At about two days of age, the calf's navel should be examined for evidence of infection. The umbilical region should be soft and pliable by then. Calves with an



Figure 1: Three important practices early after birth—colostrum feeding, identification of the newborn and umbilical disinfection.

infection of the navel show signs of depression. The umbilical region may be painful to the touch and swollen. Infection of the navel may rapidly progress to septicemia (presence of bacteria in the bloodstream), which frequently results in death. This potentially fatal problem can easily be avoided if the cow calves in a clean environment and the navel is disinfected soon after birth.

Dry the calf (optional)

A wet calf in a windy environment is likely to get cold and sick rapidly. However, when the calf is kept dry and protected from draft (wind), the environmental temperature can go well below 0°C without affecting the calf's health. Clean straw or a burlap sack may be used to rub the calf dry at the time of birth.

Identify the calf

Each farm has its own method of identification. In some countries, animal identification follows certain rules for official purposes. Newborns should be identified in a permanent fashion and birth data should be recorded in an individual permanent record. Methods of identification include:

- Neck strap or chain with a number;
- Metal or plastic ear tag;
- Ink tattoo;
- Freeze brand.

Identification can also be facilitated in the animal's permanent record with a photograph or a sketch of the animal's markings if the breed shows more than one color.

Feed colostrum

The importance of colostrum feeding must be emphasized. A recent study in the U.S. showed that, despite the thorough education provided to dairy producers, more than 22% of calf mortality could be

attributed to a lack of immune resistance. There are four management aspects to colostrum feeding (see gray box).

1- Is the colostrum of good quality?

If the colostrum is of questionable quality, a previously frozen high quality colostrum may be thawed and offered to the newborn.

2- How much colostrum should be fed?

The quantity of colostrum needed by most calves ranges from 1.25 to 2.5 kg per meal. The amount consumed per feeding should not exceed the capacity of the calf's stomach (5% of body weight, or for example 2 kg of colostrum for a calf of 40 kg). Colostrum should be fed for the first three or four meals the day of birth (within the first 24 hours).

3- When should colostrum be fed?

The first meal should be fed as soon as the calf is breathing normally after delivery and not later than one hour after birth. The second meal should be fed within six to nine hours of birth. When the first feeding is delayed, more frequent feedings within 24 hours will be needed to supply the necessary antibodies. No other feed should be given before the colostrum.

4- How should colostrum be fed?

Colostrum should be warmed to body temperature (39°C) in a water bath and fed with a pail or a bottle equipped with a clean nipple. Equipment (bottle, stir stick, measuring cup, etc.) must be thoroughly cleaned after each use.

Do not leave the calf with the cow

Calves should be removed from the cow's calving area promptly after birth. Many studies indicate that calf survival increases greatly when the calf is placed in a clean, dry environment and fed colostrum immediately after birth. In comparison, calves left with their dam usually ingest less (if any) colostrum too late.

When the calf and the cow do remain together after birth, even for only a few



Figure 2: Individual housing (floor pens or hutches) helps keep the calf healthy

hours, it is essential to supervise the suckling. The cow's udder must be cleaned before allowing the calf to suckle. When bonding occurs between the calf and the cow, absorption of antibodies ingested with the colostrum increases. However, at some point, this bond must be broken, creating a stressful situation for the cow.

In a few cases, cows will reject and possibly hurt their calves immediately after birth. Another factor to consider when leaving the calf and cow together is the calf's health; risk of infectious disease transmission increases when the calf and the cow are not separated.

House the calf in an individual pen

Calves do not have any resistance to disease at birth. The risk of acquiring and transmitting disease is reduced when newborns are placed in individual pens that are dry, protected from draft and that prevent direct contact between animals. In addition, as the calf grows older, an individual pen allows the caretaker to monitor the intake of grain starter, which is an important criteria in deciding when the calf is ready for weaning.

THE FIRST WEEKS AFTER BIRTH

Build good hygiene habits

The spread of many diseases may be considerably reduced by the use of good hygiene. Feeding utensils (nipple bottles) should be cleaned after each use. When the same nipple bottle is used to feed suckling

calves, feed the younger animal first and the older later. Pens should be cleaned and disinfected as soon as calves are moved to another location. Pens should remain vacant for at least three to four weeks prior to the next occupancy.

Observe for early signs of disease

Remember a healthy calf is a hungry calf; loss of appetite is one of the first signs of a health problem. Take the calf's temperature and isolate calves showing signs of illness immediately (loss of appetite, weakness, sunken eyes, etc.).

Remove extra teats (optional)

Extra teats may become infected and may interfere with the machine milking later in life. However, these problems are relatively rare and the utility of removing extra teats is questionable in most cases. Extra teats can be removed when they can be positively identified (from two to six weeks of age) while the calf is still small and easy to handle. Sharp, curved scissors or a scalpel can be used to snip the teat off at the line where it joins the udder. There is seldom any bleeding. Nevertheless, strict sanitary conditions should be observed (disinfection of the area prior to and after the operation, and disinfection of the surgical equipment).

In some cases, extra teats are not easily identifiable, and there is the risk of cutting the "real teat." Only an experienced dairyman or a veterinarian should attempt to remove teats from older heifers or cows.

Dehorn the calf

Dehorning is recommended in most situations. Horned cows can cause injuries to other cows or people. In some parts of the world, however, a rope around the horn is used to restrain and handle the cow. Dehorning can be done when horn buds are emerging and can be positively identified (10 days to six weeks old). As calves get older, dehorning becomes more stressful. Dehorning should be done prior to weaning to avoid additional stress during that period.

Dehorning can be done with an electric dehorner or caustic potash. Before dehorning for the first time, the dairyman or technician should seek advice regarding proper procedures. Inadequate technique increases the calf's stress and the risk of injury to both the calf and the technician.

Design a vaccination program with a veterinarian

Vaccines are available for numerous diseases. For example, the incidence of diarrhea due to corona virus, rotovirus and *E. coli* may be reduced by immunization. Other calf health problems may also be reduced significantly when calves are immunized against prevalent pathogenic organisms in a region. Vaccine availability for specific diseases varies from one country to another. Your veterinarian will be the best source of information about vaccines that may be required or advised to fight specific diseases in a region.

AT WEANING TIME

Weaning of individual calves is often done on the basis of:

- Age;
- Live weight;
- Daily intake of concentrate.

However, decisions about calf weaning should be based on the amount of dry feed calves ingest per day, not on their age or weight. Calf starter should be made available five to 10 days after birth. A calf consuming 0.7 kg of dry feed or more on three consecutive days is ready for weaning. When calves are fed low levels of milk to encourage early consumption of dry food, weaning can be done abruptly. In contrast, if milk is given in large amounts, weaning may require two to three weeks of slow transition to avoid a setback in growth.

Calves not eating sufficient amounts of a grain starter at weaning lose weight for a few days after weaning. This weight loss occurs regardless of the age at weaning. Thus one should resist the temptation to delay weaning in hope of a "better transition"—the focus should be on trying to encourage early consumption of grain starter.

Under strict management and feeding practices, most calves are ready for weaning by five weeks of age. However, the current recommendation is to wean at about eight weeks of age.

Calves should remain in individual pens or hutches for about 10 days after weaning, until the urge to nurse is lost.