

# Off to a good start: Calf care in week 1

Drew A. Vermeire for *Progressive Dairyman*

## AT A GLANCE

Raising quality calves is no accident and requires a clear vision of goals and objectives as well as a clearly defined plan of how to meet those goals and objectives.

*"If you don't know where you are going, any road will get you there."*  
—Lewis Carroll

Before anything else can happen, the newborn calf requires immediate "best care" to get a great start in life. This article is intended to help dairymen provide the best care for newborn calves, both bulls and heifers, during week 1.

### Prenatal care is important

Newborn calf health and well-being starts with proper prenatal care.

- Cows should be moved from dry cow pens to transition pens for the last three weeks prior to freshening, which can increase milk production

and maintain good health in cows and their calves.

- Discuss giving pre-calving vaccinations and other injections with your veterinarian.
- Your nutritionist can help you with a transition ration that will help prepare cows for the lactation ration.

- Calmly move cows to the maternity pen when signs of calving appear such as loss of appetite, restlessness, swollen vulva and clear mucus discharge.

- Maternity pens should be clean and sanitized after every calving and be at least 12 feet by 12 feet with sloped flooring and provided with 12 inches fresh straw bedding or other clean bedding material.

### Dip navel with 7 percent iodine solution

The connection between navel health and bones was recognized since ancient times.

- Disinfect the calf's navel within 30 minutes of birth. The best way is to start with 7 percent iodine solution or another disinfectant specifically

designed for navel dipping (not teat dip or some other disinfectant). Fill about half of a disposable paper cup and fully dip the navel in the cup, pressing it up against the abdomen, moving the cup back and forth to fully immerse the navel and base of the navel.

- If the navel is dirty, dip twice.
- Check the navel of newborn calves on days 2, 4 and 6 after birth to determine whether the navel is infected. It should be the size of a pencil or smaller.
- Mark calves with navel the size of your thumb as suspicious and re-check daily. If the navel is the size of a walnut, it is infected and needs treatment.
- If the navel is infected, consult your veterinarian for the best treatment method.

### Colostrum harvesting, storage, feeding

In cattle, immunity is transferred from the cow into colostrum, which is then ingested by the newborn calf and absorbed from the intestine in the first hours after birth. "Failure of



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passive transfer" is the term given to describe calves that did not transfer adequate immunoglobulins into the blood, but a better term would be "failure on the part of the dairy to properly harvest, evaluate, store or feed colostrum to the newborn calf." Failure of passive transfer is a dairy management problem that requires attention to detail to be successful. To accomplish this, dairies should follow these four principles:

**1** Dairies should always feed colostrum to every calf within the first two hours after birth (10 percent of bodyweight) plus additional colostrum (5 percent of bodyweight) at their next feeding so the newborn calf consumes at least 15 percent of bodyweight in colostrum within 12 hours of life.

**2** Not every cow produces colostrum that should be fed to calves. Suitable cows are healthy,



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have been vaccinated based on herd veterinarian's recommendations, have a "negative" Johne's disease ELISA test, have been dry for at least 45 days and in the transition group for at least 14 days. The cow should not have mastitis or blood in colostrum and should not have leaked milk.

**3** Test fresh colostrum, and only feed newborn calves colostrum with greater than 50 grams per quart (Quick Test), greater than 5.5 grams per deciliter (refractometer) or "green" (colostrometer) for the first 24 hours.

**4** Colostrum with lower-concentration IgG and transition milk can be fed for several days before calves receive milk replacer, but only feed colostrum with high IgG concentration on day 1.

The value of colostrum cannot be overstated both from a health and growth standpoint. In addition to immunoglobulins, colostrum contains many bioactive compounds that program calves for lifelong improved immune response. Bull calves destined for a sale barn or calf ranch should be fed colostrum as well.

#### Clean, dry bedding, fresh air, feed and water

Calves need clean, dry shelters that have plenty of fresh air but without drafts. This means indoor housing needs a lot of air volume (350 cubic feet per calf) and air exchange (three to four changes per hour) to maintain fresh air. Calves in outdoor hutches generally have abundant air but may lack bedding in winter. Thin or wet bedding increases maintenance energy needs and reduces gain, so calves should have straw bedding deep enough that the calf's legs are hidden in the nest when temperatures fall to freezing.

Starting on day 1, provide calves with fresh water and quality calf starter feed (mixture of greater than 50 percent grains like corn, barley and oats, supplement pellets and molasses). Always separate water and starter feed to avoid calves dribbling water in the feed and vice versa.

#### Liquid feed: Milk replacer, waste milk, etc.

Calves need more milk solids per day than we have traditionally fed in the U.S. For normal growth, milk replacers should contain 26 to 28 percent protein and have a 2-to-1 ratio of protein to fat. Dairy beef calves should be fed 1.6 to 2 pounds milk replacer powder per day for normal growth of 1 to 1.5 pounds per day and minimum

cost of gain. Replacement heifers should be fed 2.2 to 2.8 pounds milk replacer powder per day to double birthweight in 56 days, which increases lifetime milk production.

Six quarts of colostrum provides more than 3 pounds of milk solids on day 1, so feeding adequate milk replacer is not going to hurt the calf. Waste milk should be pasteurized and mixed with a balancer (30 percent protein to 5 percent fat) to extend available supply of waste

milk, to balance protein-to-fat ratio and to provide the vitamins and minerals lacking in whole milk.

#### Cleaning and sanitation

Many health problems can be avoided by strict attention to cleaning milk mixing and feeding equipment after every feeding. Use the same cleaning products sold by local dairy supply companies. Always use a thermometer to monitor temperatures and wear rubber gloves.

Rinse with lukewarm water (80 to 110°F) to remove milk residues and foreign material. Clean using hot (165°F) water and chlorinated alkaline soap to dissolve protein and fat residues. Special brushes are needed to clean nipples, esophageal feeders and bottles. Finally, sanitize with acid final rinse in warm water (80 to 110°F) per manufacturer's instructions and allow to dry completely. Surfaces should be squeaky clean. ↪



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