Virginia Cooperative Extension
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DAIRY PIPELINE

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"Poor air quality is a sign of poor drainage, soaked bedding or poor ventilation and is a major contributor to respiratory disease."

What does your calf housing smell like?

This might seem like an odd question, but it is an indication of potential problems which could have a considerable impact on success of your calf operation. Does the air smell fresh or is there a strong odor of ammonia or foul air? Don't forget to sniff the air two feet from the ground where the calf is resting. Poor air quality is a sign of poor drainage, soaked bedding or poor ventilation and is a major contributor to respiratory disease. Respiratory disease is especially troubling due to its lasting impact on survival and later performance.

Health records collected in Kansas and Spain found that calves treated more than once had significantly reduced herd life as lactating cows. This is likely due to the impact of a respiratory infection upon the amount of functional lung tissue. In contrast, diarrhea is a serious disease, but once the calf recovers there are few residual implications for the animal.

Improvement of the air quality is achieved by multiple approaches. First, all calf housing should have a well-drained foundation. Hutches should be placed on a gravel base and the gravel should be replaced with fresh material periodically. Indoor calf pens on dirt or gravel will benefit from the establishment of "French" drains which carry excessive moisture away from the calf and keep bedding much drier. These drains are covered with a layer of gravel. Installation of landscape cloth over the gravel and dirt base keeps this material clean and extends the function of the bedding. If concrete is the base then the floor must be sloped away from the calf and with accommodations for further drainage of urine and excess water out of the barn.

The second approach to improvement of air quality is good ventilation. Locating calf housing in an area with good natural air flow, upwind from the cow housing and manure storage is advised. Curtain side walls facilitate excellent natural ventilation. However, relying on natural ventilation is not adequate. When the wind is not blowing during the evening, hot weather, or when the facility is closed during cold weather, ammonia and higher concentrations of airborne bacteria and viruses accumulate. Establishment of positive pressure ventilation systems to introduce fresh air and circulate the inside air is strongly recommended. Seek professional advice in designing and installing forced air ventilation. The Dairyland Initiative website (http://thedairylandinitiative.vetmed.wisc.edu) is an excellent source of information for facility and ventilation design. In Virginia, dairy extension professionals have been trained to provide design recommendations.

The above recommendations represent a proactive approach to preventing respiratory disease. This involves additional expense in facility construction and maintenance which has been proven to reduce respiratory disease and promote rearing of healthier animals with a longer herd life.

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Making a smooth transition!

The pre-weaning period is an essential period of the calf's life. During this crucial time the calf has a host of adjustments to make, the most difficult of which is adjusting to life outside the uterus and the transition from a liquid diet to dry feeds. This stage provides the greatest stress to the young bovine. Minimizing stress associated with this time period is crucial to the long-term health and productivity of the animal.

Continued...

Upcoming Activities

See VTDairy for details.

June 5, 2015
Farm School & Tour, Mt. Crawford Creamery

Activities – Continued...

June 10, 2015
Dairy Day at the Harrisonburg Turks Baseball Game

June 12-13, 2015
Franklin County Open Youth Livestock Show

June 16, 2015
Larry Tranel of Iowa State—Low Cost Parlor Construction & Farm Finance —with Organic Valley (Franklin Co.)

June 25, 2015
Franklin Cunty DHIA Banquet and Awards Picnic

July 10, 2015
Franklin Co. 1-day Grazing School at Ferrum College

July 17, 2015
VA Dairy Expo & VA Cattlemans' Field Day, Kentland Farm, Blacksburg

July 30, 2015
VA Colored Breed Show, Rockingham Fairgrounds

July 31, 2015
VA Sale of Stars, Rockingham Fairgrounds

August 1, 2015
VA Holstein Summer Show, Rockingham Fairgrounds

August 17-22, 2015
Rockingham County Fair

September 25, 2015
State Fair Junior Dairymen's Contest

September 27-30, 2015
National 4-H Dairy Conference

November 2015 & January 2016
Holistic Management & Risk Assessment Workshops for Dairy Famers in the Southern Region (Workshops 1 & 2)

If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

We know that poor decisions made pre-weaning have dire consequence later in life. Five key areas can minimize calf stress during this time:

1. Consistency: Many different events occur during the pre-weaning period of a calf's life. Therefore, the following should be at the forefront of any calf-rearing operation:

- Dry Matter: Throw away the cup that comes in the milk replacer bag! Milk replacer and water should be weighed at every feeding to ensure consistency.
- Temperature: Milk or milk replacer should be fed at ~110 °F for optimal consistency. Use a thermometer! Follow mixing instructions on the bag for recommended temperature.
- Observations: All personnel working with calves must monitor them regularly. Get calves on a schedule and develop a "flagging" system to denote suspect calves. It is preferable to designate a single employee to always feed calves, but a flagging system and schedule are *especially* important if multiple personnel are used.
- Communication: Once a problem calf is "flagged," proper communication needs to occur via the command chain to ensure she is handled correctly.
- Sanitation: Clean all feeding supplies immediately after use. Make sure a clean area is available for drying. This is necessary to negate bacteria growth.

2. Weaning: It is common to decrease milk offered by half before weaning. This gradual decrease reduces calf stress and makes a smoother transition from nutrient-dense milk to solid dry feed. If calves are being fed milk or milk replacer at higher rates of 8 quarts or more per day (<2 lb. of milk solids) a gradual reduction in milk over 4-10 days may be less stressful. Automatic calf feeders can achieve this quite easily.

3. Starter: A high-quality starter containing 18-22% CP and 20-25% NDF is essential. Above all, the starter must be palatable and needs to remain the same throughout the pre-weaning period. Calves should be consuming at least 2 lb. of starter at weaning. Some producers offer long-stemmed forage prior to weaning. Inclusion of hay pre-weaning may reduce intake of starter. Starter is much higher in energy than hay, and a reduction in starter intake reduces growth during this critical period of life. Therefore, with the goal of maximizing gain in mind, hay should not be offered until several weeks after weaning.

> "The first several weeks of the calf's life are crucial for a lifetime of success."

4. Environment: The calf's environment should be optimal during this phase. Regardless of the housing system used, the calf should be moved to a permanent pre-weaning home immediately after birth. In addition, do not move her the day she is weaned or suddenly move an individually housed calf into a group for the weaning process. Weaning is a very stressful time for a calf, and keeping her environment constant is important.

5. Health Procedures: Vaccinations and dehorning occur during the pre-weaning period. Recommendations on timing of these specific events vary. Regardless of the timing employed, these events need to occur during low-stress periods. This will result in the smallest influence on intake and growth.

The first several weeks of the calf's life are crucial for a lifetime of success. Calf management should focus on optimizing consistency in the diet, environment and weaning to reduce stress and encourage health.

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For more information on Dairy Extension or to learn about current programs, visit us at VTDairy —Home of the Dairy Extension Program at: www.vtdairy.dasc.vt.edu.

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