Virginia Cooperative Extension
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DAIRY PIPELINE

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"Blankets serve as a buffer between the calf and adverse conditions in their environment including moisture, cold temperatures and wind."

Photo courtesy of Flickr.com

EQUIPMENT FUNCTION AFFECTS MILK QUALITY

Milking equipment function can have a profound negative impact on teat end health and overall milk quality. On the flip side, if we properly maintain equipment function we can positively impact the bottom line, udder and teat health, bulk tank somatic cell count and ultimately milk quality. It is important to remember that the goal of milking is to harvest as much milk as possible as efficiently as possible. However, this is a careful balancing act between efficiency and teat end health. Vacuum improperly set may have a negative effect on udder and teat health, but when properly balanced with pulsation, we can optimize milk harvest while minimizing the damage.

Vacuum level at the teat end may be considerably different from that at the pump. The difference is dependent on a variety of factors including restrictions from milk line sizes, milk tube sizes, milk flow sensors and volume of milk flow itself. Pump capacity and system airflow efficiency may also play a factor but the parameters mentioned above play the largest roles. Ultimately, it is the vacuum level at the cow and not system vacuum level that impact udder health. A vacuum level that is below optimal conditions will result in longer milk-out times, reduced harvest and poor parlor efficiency and the potential of damaged teat tissue. Conversely, vacuum level higher than optimal (which is more likely the case) has the ability to cause edema in the teat tissue and hyperkeratosis, poor milk out and in turn, an increase in the bulk tank somatic cell count and the potential for reduced udder health and milk quality. The optimal teat end vacuum level at peak milk flow will vary with inflation, but in general, will range from 10.5"-12.5" Hg. Your equipment dealer should provide the appropriate information for the particular liner in use on your operation.

Pulsators will easily become dirty and air inlets can become plugged. Also, the wear of various pulsator components may ultimately have a negative effect on performance. If not properly cleaned and maintained, this will impact the function of the pulsators. Improperly functioning pulsators can result in suboptimal massage and reduced teat and teat end health resulting in poor milk out and performance. The pulsator ratio should be approximately 60:40 to 65:35 and in some cases 70:30.

A full parlor evaluation should be done twice yearly and this includes testing all pulsators, teat end vacuum at peak milk flow, system vacuum in several locations and air flow capacity. Any components not performing properly should be fixed or replaced. The efficiency of various components of a milking system should also be evaluated. We have teamed up with the Area Dairy Agents and plan to offer Equipment Workshops in late winter–early spring of 2009. If you are interested in participating, please get in touch with myself or your Area Dairy Agent.

—Christina Petersson-Wolfe
Extension Dairy Scientist,
Milk Quality & Milking Management
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TO BLANKET OR NOT TO BLANKET?

Raising calves during colder weather presents a number of challenges that require increased attention to your calf care program. The primary reason that we discuss cold weather implications for calves, but not for older dairy animals, is that they are uniquely different. Because of their smaller body size, there is a greater surface area to body mass ratio making them more susceptible to heat loss through a number of processes. This loss of heat causes the calf to expend more of her energy maintaining core body temperature and reduces her rate of growth, or in extreme conditions causes her to lose weight.

Providing a dry, well ventilated and draft free environment should be the primary consideration during cold weather. In the event that

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Upcoming Activities

Area Dairy Conferences:
Dec 2 —Keysville
Dec 4—Rocky Mount
Jan 20—Harrisonburg
Jan 22—Culpeper
Contact local extension office for more details.

Jan 13 — PC Dart workshop — 9 - 3 in Rocky Mount. Contact Beverly Cox for details 540-483-5161.

Dairy Extension Winter Trip— 3 days/2 nights visiting SC and GA tentatively scheduled for the 3rd or 4th week of Jan 09 — details TBA.

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.

"Although there are exceptions, Virginia dry cows tend to be the forgotten family members of our dairy herds."

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

Bennet G. Cassell
Dairy Extension Coordinator
& Extension Dairy Scientist,
Genetics & Management

available facilities are not sufficient, calf blankets have been marketed as a management tool for raising calves in colder weather. Blankets serve as a buffer between the calf and adverse conditions in their environment including moisture, cold temperatures and wind. Research conducted at North Dakota State University found that in cold weather, blanketed calves gained 1.35 lbs daily compared to just 1.06 pounds for their un-blanketed herd mates during the first 21 days of life. Researchers noted that the advantages in rate of gain diminished over time. Dr. Schroeder, the primary researcher at NDSU, noted that the greatest benefit from blankets came during periods of severe winter weather. He also recommended that blankets be used when temperatures were below freezing. The advantages of blankets becomes marginal when daily temperatures rise enough to cause the animal to sweat, then to lose body heat evaporating that moisture during the cooler night period.

Dr. Schroeder's research found that the improvement in rate of gain diminished after 28 days of life. This coincides with the age when many calves are consuming enough starter to have good rumen function, which produces a considerable amount of heat. Additionally, the consumption of starter feed provided additional energy for maintenance and growth.

In summary, blankets can be a useful tool in managing calves during winter weather. Primary consideration should still be given to providing a dry and draft free environment and ensuring that calves receive enough nutrients through starter and milk replacers. Blankets are likely to be the most beneficial for young calves that are not yet eating ample starter during extended cold spells.

—John Welsh,
Extension Agent, , Rockingham County
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What are you going to give your dry cows for Christmas?

As cooler weather moves into Virginia, a greater percentage of dry cow rations will shift away from pasture to more purchased/stored feeds. Although there are exceptions, Virginia dry cows tend to be the forgotten family members of our dairy herds. They are not being milked or grown and consequently the value of dry cow management is often underestimated. But, just like Olympic athletes, dry cows should be pampered and prepared for their upcoming lactation. An old saying that I grew up hearing was, "We'll feed that to the dry cows". This statement often followed a poor decision related to mature hay or hay baled too wet. No, dry cows *don't* have the same high nutrient requirements that milk cows do, but this does not mean we should be feeding them trash. How does your dry cow ration compare to the NRC dry cow requirements found in the table?

So what should you give your dry cow for Christmas? See the wish list below.

- A balanced palatable ration offered in clean dry feed bunk that promotes optimal dry matter intake so that she will be ready to transition into the lactating herd trouble free.
- A clean dry place to lie to reduce the odds of new cases of mastitis.
- A solid clean place to stand while she eats so she does not develop any new foot problems.
- A set of trimmed, healthy, well-balanced hooves.
- A proper Body Condition Score between 3.25-3.5.
- Clean water trough.

-M. Chase Scott,
Extension Agent,
Southwest Virginia
(276) 223-6040;

Minimum Nutrient Recommended	Dry Cow		
	Far-off	Close-Up	High Producing Cow
Dry Matter intake, lbs/day	28	26	54
Crude Protein (%)	12	14—15	16—19
NEL (Mcal/lb DM)	0.57 – 0.62	0.63—0.72	0.75—0.78