

DAIRY PIPELINE

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“Calves are the future of the dairy herd.

Paying attention to these very simple but important factors in a timely fashion will help ensure these animals will be profitable lactating cows.”

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CALF MILK: CLUMPY, COLD, AND FULL OF BACTERIA —THIS MAY BE HAPPENING ON YOUR FARM!

In today's dairy industry most farms or calf ranches feed preweaned calves pasteurized waste milk or milk replacer. While both can provide essential nutrition to the young calf, cost effectiveness depends on calf numbers, supply of milk or replacer and the cost.

From the raw milk product to ingestion by the calf there are many factors that can affect quality and consistency of milk. There are some basic important components involved in preparing calves' milk that often go unnoticed. For the sake of this article I will focus on the three areas which are most important.

Sanitation of equipment. The pasteurizer, mixing tank, hoses, buckets, bottles, and nipples—all of these areas potentially harbor high levels of bacteria. When milk comes in contact with a piece of equipment with high bacteria counts, the bacteria load in the milk increases rapidly—particularly at room temperature or higher. After each feeding all equipment must be rinsed first with lukewarm water (100–110 °F), washed with hot, soapy water (160–170 °F), rinsed with tap water, and then sanitized. The key is to use proper amounts of detergent and water temperatures. Naturally, a dairy operation has bacteria in the environment but the goal is to keep bacteria numbers as low as possible. Weekly milk samples should be taken to monitor bacteria levels in milk. Pasteurized waste milk should have a bacteria count of <20,000 cfu/ml just before feeding the calf and mixed milk replacer should have <2–3,000 cfu/ml. Randomly swabbing one-square-inch areas of equipment surfaces will help in monitoring sanitation as it can reveal what is properly sanitized and what is not. No more than 2,500 cfu/sq. in. should be found on the surfaces. Excessive levels of bacteria in the liquid diet can have significant negative health effects on baby calves.

Dry matter (DM) and **temperature** of milk. Ensuring correct powder to water ratios when mixing milk replacer or keeping steady levels of DM in waste milk is critical. Whole raw milk is approximately 12% DM. This should be the

minimum solids level fed to calves. Some operations feed milk replacer or a mixture of milk and powder containing up to 15% DM (consult a nutritionist before increasing solid levels). However in cases where excessive flush water enters the waste milk, total solids have been observed to be less than 9%. This low solids level will not allow acceptable calf growth. Keeping a constant milk temperature at each feeding is also important. An ideal temperature is 105 °F ±5 ° for liquids when consumed by the calf. Consistency is very important when feeding calves as they are adversely affected by varying temperatures and solids levels. A Virginia Tech study conducted in July of 2008 showed a 9.0–14.9% DM variation and a wide range of 95–110 °F temperature in milk replacer liquid fed to calves. Feeding cold milk can result in improperly mixed milk replacer and can contribute to cold stress in the winter months. Also, calves will not drink milk as readily if it is too cold or hot. Variation in DM and temperature is not unusual on many farms but is commonly overlooked. Calf feed mixing areas should have a thermometer (or two) to record temperatures. Digital or optical refractometers can be used to monitor dry matter level of waste milk or milk replacer mixtures.

To minimize variation a monitoring system should be implemented as well as standard protocols. Protocols should be clear and simple. Using large vibrant posters with pictures and as few words as possible works well. Employees need to understand the importance of sanitation, DM, and temperature. It can take as little as 10 minutes to explain and emphasize these points. If nothing else about preparing calves milk remember: sanitation, DM, and temperature. Calves are the future of the dairy herd. Paying attention to these very simple but important factors in a timely fashion will help ensure these animals will be profitable lactating cows.

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Upcoming Activities

Mastitis Workshops –

Hosted by Alltech, VCE & Southern States Coop. Focus on mastitis prevention, effective treatment, nutrition and immune function, and udder dissection. Contact Beverly Cox at becox@vt.edu or 540-483-5161.

***March 8:** 12:00 p.m., Southern States, 1055 Industry Road, Wytheville, VA 24382.

***March 9:** 12:00 p.m., Robert Rutrough's dairy, 285 Rutrough Rd, Rocky Mount VA 24151.

March 30: Dairy Management Institute— 9:30am to 2:30pm, The Franklin Center, speaker: Larry Tranel from ISU. Contact Beverly Cox at becox@vt.edu or (540) 483-5161.

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.

“Strategic deworming of growing heifer calves will result in an extra 30-100 pounds of weight gain during the grazing season.”

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.



Charlie Stallings,
Dairy Extension Coordinator &
Extension Dairy Scientist,
Nutrition & Forage Quality

DEWORMERS

Questions about dewormers are some of the most frequent that producers have. I will try to address the most common questions producers ask as well as my list of the most important questions. The answers are a combination of current research and my interpretation of that research. In some cases the answers are my educated opinion based on our current understanding of worms and dewormers.

◆ *Are generic dewormers any good?* Generic ivermectin dewormers have been available for a number of years and have significantly reduced the price of ivermectin dewormers. The lowering of the cost is good for obvious reasons but is a concern because low cost has led to the potential for overuse. Research on generic dewormers has been mixed: some research has shown the generic dewormers do not reduce fecal egg counts as well, while other research has shown no difference. Weight gain differences are the most important measure for producers. Our limited research comparing generic dewormers has not shown any differences in weight gain when compared to name brand products. There are several manufacturers of the different generic dewormers and the difference in research results may come from the fact that generic dewormers from different manufacturers may not all be equal. When using name brand products if there is a concern with the efficacy of a product the company will almost always support investigation into the potential problem.

◆ *Is there resistance to the macrocyclic lactones type dewormers (ivermectin, Dectomax®, Eprinex®, and Cydectin®)?* For many years no resistance was seen to these dewormers for *Ostertagia ostertagi* (brown stomach worm). Additionally, they have never been 100% effective against *Cooperia* and *Nematodirus*. *O. ostertagi* has always been considered the most costly worm in cattle. As this worm is better controlled it is possible that measurable losses from *Cooperia* and *Nematodirus* may be seen, though this is a subject of debate and research in the parasitology community. For now in Virginia, *O. ostertagi* should still be considered the worm of importance. We have not been able to document economically important resistance to this worm—though the potential for resistance certainly exists and is the primary reason to use correct dosing and avoid overuse.

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◆ *Do pour-on dewormers work?* There is talk that pour-on dewormers are not effective. While it is true that pour-on dewormers are more variable in their blood levels than the injectable or oral dewormers, all of our research has shown the pour-on worms to be efficacious. In the only head to head trial we have done there was no difference in weight gain between the pour-on and injectable dewormer groups. The variability in blood levels certainly increases the long-term possibility of resistance development but currently that concern is at the global level and not at the individual farm level. Due to concerns over pour-on dewormers I have changed my recommendations on their usage. My current recommendation is to use the injectable formulation of a particular dewormer unless there is an additional benefit to using the pour-on formulation. The additional benefits of pour-ons over injectable dewormers are in the late fall for better lice control and during the summer as an adjunct to other fly control methods to help with resistant horn flies. Ivermectin, Dectomax®, and Cydectin® all come with both injectable and pour-on formulations.

While these are the most common questions I am asked about dewormers they do not represent the most important questions regarding dewormers. I am concerned that in the debate listed above we sometimes lose sight of the key principles of deworming. The two questions producers should always consider when deworming are:

◆ *When should I deworm my calves and how do I maximize my use of dewormers?* These are still the two questions that matter at the individual producer level. Strategic deworming of growing heifer calves will result in an extra 30-100 pounds of weight gain during the grazing season. To see all the possibilities on implementing a strategic deworming program see the publication on Parasites in cattle on the [Virginia Cooperative Extension](http://www.vtdairy.dasc.vt.edu) website. Additional dewormings will be needed on individual farms based on stocking density, weather and other management considerations. Consult your veterinarian to ensure you have a sound economic deworming program.

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