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Feeding Salable Milk to Young Stock Tips, Tricks and Formulation Advice

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Background

The US dairy industry, along with our nation and world, are experiencing unprecedented and extreme challenges related to the current COVID-19 pandemic. While milk volumes are increasing across the nation due to 'spring flush,' demand for dairy products has dropped significantly in response to school closures, reduced retail food service capacity, and decreased retail sales.

With a surplus of available milk on the dairy, it is a great time to consider feeding this salable milk back to pre-weaned calves. If you've never fed waste or salable milk to calves, the process can be daunting. The tips and information below can help producers to successfully feed salable milk back to calves on the dairy while maintaining calf health and performance.

Cleanliness and Sanitation

Milk is the ideal environment for bacteria to grow and thrive. With this in mind, it is critical to cool the product rapidly or feed it immediately. If an operation is new to feeding salable milk it is unlikely that they own an on-farm pasteurizer. Unpasteurized milk can be a source of unwanted pathogens such as Mycobacterium avium (Johne's Disease), E. coli, Salmonella, Mycoplasma, etc. which can cause disease in young calves. It is always best practice to pasteurize milk prior to it being fed.

Allow the milk to be fed at optimum temperature (100-105 degrees F). If a farm does not have a pasteurizer, consider an alternative way of heating the product pulled from bulk storage before feeding. One such method could be using a bucket/tank heater to warm batches in a mixing tank. Another option is to feed at time of harvest. Feeding at harvest time can be a limiting factor due to labor constraints. It is important for calf health to keep feeding times consistent. Waiting on milking to be completed prior to feeding calves may not promote consistent feeding times.

Acidification is an option if cold storage is not available. In the United States, citric acid and propionic acid are approved for use by the FDA. The acid must be added after the milk is cooled (68-75 degrees F) to avoid curdling. Target a final pH of 4-5 for acidified milk. Over-acidification can result in curdling of the milk and under-acidification does not prevent bacterial growth. Keep in mind that acidification does not decrease the number of bacteria in the product-it only decreases the ability of the bacteria that are present to multiply. It is still important to have clean collection of the milk. Feeding acidified milk offers its own sets of challenges that are not the focus of this paper. Be aware of the hazardous properties that these acidifiers offer. Also, expect a decrease in palatability of the product.

Agri-Basics DAIRY MEETINGS Calf Management & Tips

WITH PRESENTERS Elizabeth Marvel Mark Guyer from Milk Specialties

Four Locations April 5 Schaefferstown Lebanon County

April 6 Atglen **Chester County**

April 7 Waynesboro Franklin County

April 8 Reedsville Mifflin County

Vendor Trade Show with valuable offers to those in attendance

Lunch • Presentation

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Welcome Nutritionist Dare Lightner

I grew up on a small farm in Blackstone, Virginia. We raised beef cattle, chickens, swine, and sheep. I also worked on my cousins' dairy farm until I started college. I got my B.S. from Virginia Tech in 2010 in Dairy Science and then went to Ohio State University where I got my M.S. in Animal Science focusing on ruminant nutrition.



After graduating from Ohio State, I worked for a feed company doing nutritional technical support and formulation. I spent several years working for Penn State Extension assisting with milk quality and mastitis troubleshooting and research on farms. I also worked for a company providing customized liquid feed solutions. I'm looking forward to using my experience and skills serving as an independent nutritionist with Agri-Basics.

Consistency

When it comes to feeding pre-weaned calves, consistency is key to success. In many facets of calf raising, it is often more advantageous to do something consistently wrong instead of doing the same thing inconsistently right. Calves benefit tremendously from consistency in both management and feeding practices. One of the main advantages of milk replacer is that it is an extremely consistent source of nutrients, and with decent management, can be fed in an extremely consistent manner. With milk feeding, consistency is much more challenging and requires continuous monitoring. An easy way to get started monitoring consistency of total solids in milk is with a Brix refractometer. Optical refractometers can be sourced for around \$30 or less. Brix Refractometers measure the optical density of milk, but this value gives a decent estimate of total milk solids. To estimate total milk solids from optical density of 9.8 would have an estimated total milk solids of 11.8%. Total solids content in salable milk should not vary drastically from day to day but will vary seasonally. Non-salable milk, on the other hand, varies tremendously in both quantity and composition, and is much more challenging to feed consistently.

Nutrient Balance

With low milk prices and demands for decreased production, the temptation to feed straight salable milk to calves is tremendous. While this may be the most cost-effective source of liquid nutrition for your calves today, it might not be the best nutritional strategy. A rapid change from complete milk replacer to whole milk could cause a host of health and nutritional issues for young calves. Whole Holstein milk typically contains 20-25% protein on a dry basis and 25-35% fat on a dry basis and 12.5 – 13% total solids, while complete milk replacer typically contains 20-28% protein and 18-22% fat on a dry basis. Whole milk contains more fat, and sometimes less protein, than complete milk replacer. Additionally, whole milk is deficient in several vitamins and minerals.

Milk Specialties manufactures several fortifiers and extenders for milk that can help restore the ratio of protein and fat in salable milk to that of complete milk replacer to ensure consistent nutrient supply to calves. These products also supply essential vitamins and minerals as well as fly control and coccidiosis control. Additionally, the calf experts at Milk Specialties can help with custom formulation of milk balancers and extenders to meet target nutrient profiles and additive inclusions.

Take Home

The current dairy economy has left producers with large volumes of salable milk left on the farm. Salable milk is a great source of nutrients for calves but does have limitations that merit consideration. This document should provide a solid base of information related to feeding salable milk to calves. Reach out to the technical experts at Milk Specialties for more information or to inquire about custom formulation today.



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EDITED FOR SPACE The full article can be obtained from the authors through Milk Specialties