Time for Technology

Colostrum Management Made Easy

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Most of the innovations I write about in this column involve new high tech ways of automating dairy chores, or collecting data to manage the dairy herd with greater precision. In that context, the equipment featured in this issue just barely qualifies as innovative, because everything it does has been done before. But on most farms it does not always get done well, so I can see great potential for this practical, systematic way of handling colostrum.

Of course everyone knows that feeding 4 litres of good quality colostrum within 1 hour of birth is the most critical factor in getting baby calves off to a healthy start. While most farms achieve this most of the time, that calf delivered by the heifer that leaked milk all day before finally calving at 12:30 a.m. Sunday morning, may not be so lucky. If you do make a point of milking that heifer, testing her colostrum, and when you find it is poor quality, thawing out some from storage to feed the calf, the calf is lucky indeed. But by now it will be 2:30 a.m., so unless someone else is doing the morning milking, you are not so lucky.

The ColoQuick colostrum management system does not do a single thing that you cannot do with other equipment, but it does it so systematically and so well that it deserves a place among innovations worthy of your consideration. With the ColoQuick system, the newborn calf is fed colostrum from storage rather than from the cow, so there is no need to milk the cow immediately. Colostrum is stored in the freezer in specially designed single use 4 liter plastic bags stored inside a waffle shaped reusable cartridge. The main component of the system is a water bath with a rotating holder for one or two cartridges. Because of the waffle shape, the bath can warm the bag of colostrum to 40 degrees C in under 15 minutes without damaging the delicate immunoglobulin protein. The calf can be fed with a tube or nipple directly from the bag and cartridge, which comes with a shoulder strap. With no cow to milk, and rapid thawing, feeding the calf at an inconvenient time is much less of a nuisance with this system.

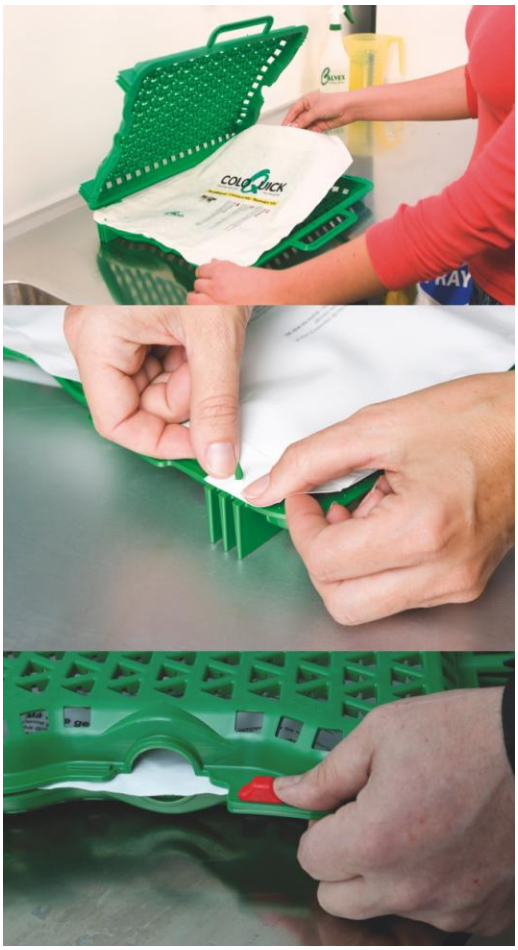
To maintain the supply of frozen colostrum, milk the fresh cow at her regular milking time and test the colostrum with the colostrometer included with the ColoQuick system. If it is good quality, new bags, encased in the reusable cartridges can be filled using a stainless steel filling station. A screw cap seals the bag after filling. The same bath that

that is used to thaw colostrum can be used to pasteurize it at 60 degrees C for 60 minutes. Even heat distribution while the waffle shaped container rotates in the water bath, minimizes the damage to the immunoglobulins. Pasteurization of colostrum is an excellent way to reduce the risk of transmission of some diseases including Johne's. But research studies show that heating to these temperatures does damage the delicate proteins and in many cases, it reduces serum immunoglobulins in the calf. But in trials where the initial immunoglobulin levels in raw milk were high and calves were fed 4 liters at the first feeding, serum levels were equal to those of calves fed unpasteurized colostrum. Most experts are hesitant to recommend pasteurization of colostrum because without excellent control of methodology, results can be very poor. The ColoQuick system addresses these concerns by measuring colostrum quality, using individual sealed pouches and precisely controlling the temperature. After pasteurization, each cartridge can be marked with the measured quality and collection date. It should be mentioned here that the regulatory standards for pasteurizing milk are actual hotter than 60 degrees, so the term is used somewhat loosely when applied to heating colostrum to this temperature, but there are a number of studies that have helped define 60 degrees and 60 minutes as the recommended heat treatment for colostrum. As a last step, the 4 liter waffles can be stored in a special freezer fitted with racks designed to support the cartridges.

While I realize that none of these steps and components involve rocket science, I have seen enough farmers messing with bags and jars and ice cube trays to freeze colostrum, to appreciate the benefits of a well designed system. Thawing the cubes or blocks can be just as messy and time consuming, and ensuring feeding utensils are clean enough for a new born, is a further challenge. And when all is said and done, how good is the protein quality and the bacterial quality of the end product fed to the calf? At every step of the colostrum management process, the ColoQuick system implements efficient and effective ways to preserve colostrum quality with a minimal amount of effort. Of course with no systems in use in Ontario, the only real experiences I can relate are those of a few producers in other places that I contacted by phone. But in general those users were happy with the system and felt it had improved the health and growth rate of their calves.

The North American distributors for ColoQuick can be found on the web at www.goldencalfcompany.com . They do not have dealers but sell directly to US and Canadian customers from their base in Wisconsin. The water baths come in 2, 4 and 8 cartridge sizes, but a two cartridge bath should be big enough for most Canadian dairy farms. The US list price for a 2 cartridge system is $8000, plus shipping, taxes etc.. If depreciation and maintenance total 20% per year, a 100 cow dairy calving 140 head per year, would spend $11.50 per calf plus the price of the disposable colostrum bag which is about $3. For a two hundred cow herd ownership cost drops to $6.25 per calf.

Perhaps a reasonable price to pay for a simple and convenient way to ensure that every calf gets its dose of high quality colostrum, on time with a minimum amount of effort, even if it is 12:30 Sunday morning.



An illustration of how the disposable colostrum bag is inserted in the reusable cartridge.

The calf is nipple or tube fed directly from the bag and cartridge

the water bath and waffle shaped cartridge allow for quick and uniform heating of the colostrum