

CALVING EASE

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DECONTAMINATING FEEDING EQUIPMENT

There is an old saying that goes, “The road to Hell is paved with good intentions.” Maybe this applies to keeping our calf feeding equipment consistently clean enough so we would feel comfortable eating out of it. Everyone knows what life is like on a dairy farm. Equipment breaks down, water lines freeze or we run out of water, or we’re short handed. We could on and on! Too much to do and not enough time. Something has to give. Sometimes the “something” is washing the calf feeding equipment.

Not Enough Time, Too Many Bacteria

What are the consequences? First, an example from the human side of things. Years ago Sam’s wife nursed their sons. When she had to be away for any length of time she would express enough milk to fill a small nursing bottle. Before she put this into the bottle, however, the bottle and nipple were sanitized with boiling hot water. Then the freshly expressed milk was added and the whole thing went into the refrigerator. Imagine just putting the milk in the bottle without sanitizing it, especially if it had been left on the kitchen counter for a week or even a day? Horrors!

Well, the two-day old calf is even less prepared to deal with bacteria than Sam’s human babies. If we feed our calves with bottles, nipples, or pails that have been only “rinsed-off” the previous feeding we have the potential of feeding bacteria soup. We have to remember that for most of us the places where we store calf feeding equipment are ideal places for bacteria to grow. Moist, no sunlight with poor air exchange and crawling with bacteria. In these conditions bacteria can reproduce at the rate of at least once an hour and often twice in the same time.

Recipe for Bacteria Soup

For example even if we blast the equipment after the afternoon feeding with water straight from the hot water heater we are likely to end up with a bacteria count of at least 5,000 at 6:00 p.m.. In addition, we probably have a healthy layer of residual milk protein and fat all over the equipment. Now, double the count every hour until 7:00 a.m.. If there was enough food to support growth our bacteria count could increase to over 20,000,000. We add warm milk or milk replacer and, presto, instant bacteria soup!

Last Minute Solution: The General Principle

Now we are in a fix. On one hand, it’s past time to feed calves so we really don’t have time to stop and scrub everything. On the other hand, we don’t want to feed bacteria soup. Chlorine bleach to the rescue.

This solution won't reduce the bacteria load in the milk nearly as low as a thorough washing. But, it will improve the situation compared to a 5, 10 or 20 million bacteria count on the equipment.

What are the principles of chlorine sanitation? Heat. Time. Concentration. Three rules. As hot as you can get the water. As long a time as you have available. As strong a concentration as you can make it. Chlorine kills bacteria by consuming oxygen (oxidation). The process of oxidation is speeded up by heat. The greater the length of time, the greater the oxidation. The stronger the oxidizing agent, chlorine in this case, the faster the oxidation process.

Concentration? For ordinary on-farm sanitation purposes we frequently use one cup of regular household-strength (5.25% active ingredient) chlorine bleach for five gallons of water. That's slightly more than 500 parts per million (ppm). But that assumes we have already clean equipment. In this case our bacteria-rich equipment represents a much more severe challenge. In practical terms three eight-ounce milk replacer cups of fresh household-strength bleach in a five-gallon pail is probably enough if you can let the hot (165 F) solution sit in the pail for five minutes (about 2000 ppm).

Last Minute Solution: What to Do

Using as much bleach as you have available, expose all the feeding equipment as long as you can to the hottest bleach solution possible. Nipples and bottles can be immersed in a five-gallon pail of bleach solution. Ideally, do this first before working on the rest of the equipment so the exposure time for these is the greatest. We want our best bacteria kill on the equipment that is going to be used on the most vulnerable calves. If enough hot water is available, each pail can be filled with the strong bleach solution. Then, the pails filled with the hot, strong bleach solution each can have as much time as possible for oxidation and bacteria kill. That is the preferred alternative to just pouring the hot solution from pail-to-pail. If the pouring from pail-to-pail method must be used, always let the solution sit in each pail as long as possible before pouring into the next pail.

Calf Feeder's Tip

How many times have you said, "My calves have scours, again?" More times than either you or I want to remember. Where the problem is persistent one possible step in finding a solution is chlorine sanitation of feeding equipment just prior to feeding. At the recommended rate of 1000 parts per million for sanitizing, one and one-half cups of regular strength household bleach are added to five gallons of the hottest water available. For smaller amounts that is two and one-half ounces per gallon. Just dump nipples into the solution. Fill the bottles with it. Fill each pail to be used for mixing or feeding with the hot bleach solution. Pour it from pail-to-pail if you must. This pre-feeding sanitation step might be the critical addition to reducing scours in very young calves, especially in situations where it is not presently practical to use an acid-sanitizer rinse as part of the wash routine or if equipment remains damp between feedings.

If you know of someone that doesn't currently receive Calving Ease but would like to, tell them to **WRITE** to Calving Ease, 11047 River Road, Pavilion, NY 14525 or to **CALL** either 716-591-2660 (Attica Vet Assoc. office) or 716-343-8128 (Offhaus Farms office) or **FAX** (716-591-2898) or **e-mail** sleadley@servtech.com .