

Bleach Is Not Enough

It is very tempting to just rinse out a nursing bottle rather than clean it thoroughly. We figure that all the “germs” can be killed with a good soak with bleach.

The bad news is that, in most cases, bleach actually cannot kill the “germs.” So, why doesn’t it kill bacteria on milk or colostrum feeding equipment?

Biofilms are the “Bad Guy”

If equipment is completely clean, chlorine bleach does give an excellent kill rate for bacteria. Notice the words, “completely clean” in the above statement.

Unfortunately when equipment is rinsed rather than scrubbed clean small amounts of milk proteins, fats and sugars are left behind. These residues are food for bacteria. As bacteria grow they literally cement themselves to equipment surfaces. Once the bacteria are cemented onto the equipment they produce organic compounds to protect themselves. We call these materials “biofilms.” [For more on biofilms, go to www.calffacts.com, select Metric and open the file, “Biofilms threaten calf health.”]

If scum or biofilm exists on the interior surface of a nursing bottle, for example, it acts as a buffer between the bleach active ingredient (sodium hypochlorite) and the bacteria. Thus, the bacteria killing action of bleach is drastically reduced.

Caution! These films often are so thin that we can’t see or feel them. However, be assured, they can be present unless we have a good four-step washing up procedure that is followed after every use.

A 4-Step Cleaning Procedure is Essential

Remember, this 4-step cleaning procedure includes:

- using a lukewarm prewash rinse,
- brushing in hot water with both soap and bleach,
- using an acid rinse, and
- allowing the equipment to dry thoroughly between uses.

[For more on cleaning procedures go to www.calffacts.com, select Metric and open the files “Washing milk containers: Checklist” and “Washing milk containers: Protocol.”]

When we substitute bleach soaks for regular washing, equipment biofilms support large Staph and Strep bacteria populations. At low levels, these bacteria are not necessarily harmful to young calves. However, we frequently find high bacterial concentrations in milk, milk replacer

or colostrum that come in contact with bottles, tube feeders and pails that are cleaned by soaking them in bleach.

The recommended procedure? Wash equipment after every use including bleach in the wash water.

It is acceptable to use a soak with bleach and hot water occasionally to back up an effective washing program. The proper soaking dilution of chlorine bleach is 2,000 parts per million (ppm). That is about 630ml in 19L of water [based on 6% sodium hypochlorite bleach]. For additional information of bleach dilution rates go to www.atticacows.com, click on Resources and select Calf Facts and open the file “Bleach dilution rates.”