

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 bleach 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. If a 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. For more on biofilms click [Biofilms](#).

It’s easy for a biofilm to develop on equipment if it is not cleaned promptly and completely after every use. For example, washing feeding buckets every morning and then just rinsing after PM feeding allows protein, fat and lactose particles to stick to the surfaces. Then bacteria literally cement themselves to equipment surfaces using these residues. Once the bacteria are cemented onto the equipment they produce organic compounds to protect themselves.

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 washup procedure that is followed after every use.

A 4-Step Cleaning Procedure is Essential

Remember, this 4-step cleaning procedure includes at least:

- Using a lukewarm prewash rinse,
- Brushing using hot water for the wash with both soap and bleach,
- Using an acid rinse, and
- Allowing the equipment to dry thoroughly between uses.

For a cleaning protocol and checklist click [Protocol](#) or [Checklist](#).

When we substitute bleach soaks for regular washing, equipment biofilms support large Staph and Strep species 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. Soak with bleach and hot water occasionally to back up an effective washing program.

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The proper soaking dilution of household bleach is about 2.7 cups (21 fluid ounces) in 5 gallons of water (2,000 PPM). Click [HERE](#) for using 6 percent household bleach or click [HERE 9%](#) for using the more concentrated (9%) household bleach.

For higher concentrations click [HERE Computed](#) and then choose the entry “Bleach Dilution Rates – Computed.” This should access an Excel spreadsheet. On my computer the spreadsheet shows up as an icon at the bottom of my screen. I have to click on the icon in order to open the spreadsheet.

To edit you will have to enter your concentration in cell C3 – as opened it should read .15 or 15% sodium hypochlorite. After you make your entry, press enter, the spreadsheet should recalculate all the values.