

# Calving Ease

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## Calibrating – the Key to Consistency

- **Connecting with reality – calibrate to align our goals or standards with what is really happening.**
- **Include refractometers, thermometers and automatic calf feeders.**

### Is it for real?

Many of us operate on the assumption that our world stays constant. We set up a protocol or machine to meet our standards. Then we “know” that without fail all will proceed according to our plans. NOT! The reality is that deviation is the most common outcome.

An interesting experiment involved Penn State students in a dairy management class mixing milk replacer. “Of the 41 batches of milk replacer mixed, only 17 achieved a final total solids percentage within the goal range of 10 to 15%. Only two calves would have received a final solution with total solids percentage of 13%.” Click [HERE](#) to see the full text.

This is the reason we evaluate protocol compliance and calibrate equipment. We set standards. Then, through monitoring and fine tuning we keep outcomes reasonably close to our standards.

### Refractometers

Both Brix and clinical refractometers are subject to gradually sliding out of adjustment. On one hand, I know that some of us have faithfully checked our refractometer with distilled water week after week only to find it is in perfect adjustment. This experience does not reinforce the practice of regularly calibrating our instruments.

On the other hand, just using the refractometer does expose it to stresses. These can compromise accuracy. Two tips for making calibration work better are: (1) thoroughly clean the optic surface before adding the distilled water – even a slight film can distort light passing through the surface; (2) use room temperature distilled water.

### Thermometers

Many of us use the rapid-read dial thermometers for mixing milk replacer and checking feeding temperatures of colostrum. Every time we purchase a new one it **always** needs to be calibrated – I have found new ones to be as much as 10° incorrect. They get knocked around a lot, too. So, once a month is

none too often to recalibrate. Click [HERE](#) for a “YouTube” guide for calibrating tips. The ice-water method is easy, quick and reliable. Remember to change batteries in the digital ones – low battery current often is the source of inaccurate readings for these convenient thermometers.

### **Automatic calf feeders**

Automated and computer controlled so nothing can go wrong? Not true. That is why regular calibration is a must with these calf feeding machines.

One alternative is to purchase computerized automatic calf feeders with built-in calibration equipment. My best estimate is that adding this factory-installed feature adds about three to five percent to the overall cost of the machine. As long as everything is kept clean the automatic calibrating feature appears to be quite reliable for assuring that the volume of water and weight of milk powder are within the limits set by the farm.

In the absence of automated calibrating equipment experienced users recommend manual calibrating both the milk replacer mixing and medicine dispensing equipment as often as weekly or at least once a month. Calibration, however, is not a replacement for daily maintenance of the machines. For example, swiping the throat through which the powder is dispensed into the mixing bowl should be a regular task. Especially in warm humid weather the buildup of caked powder in this throat can significantly change uniform powder delivery rates.

Users have suggested that milk powder composition can easily vary from one delivery to another. One dairy adds a calibration step every time they change batches of milk powder – “We cannot depend on the same density of powder from one lot of replacer to another so we check each time we start a new pallet.”

### **Even perfectly calibrated equipment will not save you from contaminated feed!**

Every once in a while it makes sense to collect “as-fed” samples of what is coming out of the nipples in sterile samples bottles (like the ones the milk truck driver uses). Send them to a lab for bacteria culturing. We are looking for less than 100cfu/ml coliform counts and less than 1,000cfu/ml total plate counts in “as-fed” milk replacer or milk.

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** 585-591-2660 (Attica Vet Assoc. office) or **FAX** (585-591-2898) or **e-mail** [calvingease@rochester.rr.com](mailto:calvingease@rochester.rr.com).  
A limited number of back issues may be accessed on the Internet at either [www.atticacows.com](http://www.atticacows.com) or [www.calfnotes.com](http://www.calfnotes.com) and clicking on the link, Calving Ease.

See [www.atticacows.com](http://www.atticacows.com) and [www.calfacts.com](http://www.calfacts.com) for calf-related resources.

**Remember to Google “Calves with Sam” blog for notes on improving profitability gain in your calf enterprise.**