

Colostrum Testing using a Brix Refractometer

- **Why test colostrum?**

We want to estimate the concentration of antibodies in the colostrum. This is important because colostrum with high antibody concentrations does the best job of achieving high immunity among newborn calves.

- **Using the results.**

The threshold value to remember is 23.

1. Values above 23 are good. A reading above 23 estimates the antibody content as at least 50g/liter. That is where the top of the green line appears on a Colostrometer. Use for first feeding.
2. Values below 23 are not so good. Use for second or later feedings. Or, if it must be used for first feeding, give the calf a colostrum supplement.

- **Tips for getting valid results.**

1. For optical units, keep the optic and cover surfaces clean. For digital units, keep the optic surface in the well clean. Rinse after every use and dry with a tissue or soft cloth. Distilled water is the ideal rinse water. We don't want a mineral or milk film on the optic surface.
2. Calibrate regularly. Place a couple of drops of distilled water on the optic surface. The "blue:white" line should be at zero on the scale or digital reading is 0.
3. With a manual refractometer the readings will be quite similar using samples between 45F (7C) and 95F (35C). Very cold colostrum may be too thick to sample accurately. Temperature-compensating digital refractometers seem to give very similar readings across this range of temperature.
4. Remember that these readings are not "exact" values. Rounding to the nearest 0.5 probably is closer to reality rather than pretending that we can accurately measure solids to the nearest 0.1 value.

Reference: I. Elsohaby and Others, "Rapid assessment of bovine colostrum quality: How reliable are transmission infrared spectroscopy and digital and optical refractometers?" Journal of Dairy Science 100:1427-1435 May 2017.

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