

**Palm Abbe™ User Guide**

**Care and Cleaning**

The Palm Abbe Refractometer is a precise instrument that requires cleaning between each use and before storage. The Refractometer is water resistant to help it last longer in a farm environment. It is not however waterproof and cannot be submerged for cleaning. Clean the Refractometer with a damp cloth and the eye with a cotton swab that is damp with alcohol.

**Testing colostrum in a New Mother’s Milk**

Add 2 or 3 drops of milk to the Refractometer’s “eye.” Close the lid and allow a few seconds for the temperature inside the lid to equalize. Press the “Go” button to obtain a reading. The Refractometer will return a brix (⁰Bx) reading.

* 22⁰Bx and above indicates High Quality Colostrum that is good for 1st and 2nd feedings.
* 18⁰Bx to 22⁰Bx indicates Medium Quality Colostrum, good for 2nd or 3rd feedings.
* Below 18⁰Bx indicates Low Quality Colostrum.

If the milk does not contain enough colostrum use a colostrum supplement containing 50gm IgG.

**Testing Calf Serum for Total Plasma Protien (TPP)**

A TPP test should be performed on calves from 1 to 3 days of age.

Obtain a blood sample from your calf. Separate the blood from the serum by means of a centrifuge or by allowing the blood to stand for 1 hour; tap the clotted blood down in the red top tube against the palm of your hand and allow the blood to stand for another 1 to 2 hours. The serum will float to the top of the tube.

Add 2 or 3 drops of serum to the Refractometer’s “eye.” Close the lid and allow a few seconds for the temperature inside the lid to equalize. Press the “Go” button to obtain a reading.

This test is looking for TPP or Total Plasma Protein. A good TPP of 8.3⁰Bx or higher will indicate that your calf has received the proper amount of colostrum.

If your calf is reading below 8.3⁰Bx it did not receive enough colostrum in its first few feedings or that feedings occurred too long after birth. If the TPP reading is low calf colostrum feeding procedures should be reviewed.

**Testing Waste Milk for Solids**

Add 2 or 3 drops of milk to the Refractometer’s “eye.” Close the lid and allow a few seconds for the temperature inside the lid to equalize. Press the “Go” button to obtain a reading.

Use the chart below to figure out how much powder to add to your batch of waste milk. You can also use our Excel® spreadsheet (link provided below) or iPhone/Android WebApp (link also provided below) to calculate milk replacer additive. Use our 22-20 or 20-20 milk replacer with these calculators.

**Sample Chart for a 100 Gallon Batch of Waste Milk**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Brix Value | Total Solids of Waste Milk% | Total Solids Desired | Total Solids from Milk, lbs/gal | MR Powder Needed, lbs/gal | Batch Size, Gal | MR Powder Needed, lbs |
| 6 | 8 | 12.5 | 0.675 | 0.405 | 10 | 4.05 |
| 6.5 | 8.5 | 12.5 | 0.72 | 0.36 | 10 | 3.6 |
| 7 | 9 | 12.5 | 0.765 | 0.315 | 10 | 3.15 |
| 7.5 | 9.5 | 12.5 | 0.81 | 0.27 | 10 | 2.7 |
| 8 | 10 | 12.5 | 0.855 | 0.225 | 10 | 2.25 |
| 8.5 | 10.5 | 12.5 | 0.9 | 0.18 | 10 | 1.8 |
| 9 | 11 | 12.5 | 0.945 | 0.135 | 10 | 1.35 |
| 9.5 | 11.5 | 12.5 | 0.99 | 0.09 | 10 | .9 |
| 10 | 12 | 12.5 | 1.035 | 0.045 | 10 | .45 |
| 10.5 | 12.5 | 12.5 | 1.08 | 0 | 10 | 0 |

**Download the spreadsheet for Microsoft® Excel® or OpenOffice™ at**

http://bit.ly/leedstone-msc

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| **Scan here for iPhone, iPad Android™ Phone and Android™ Tablet Web App.**http://bit.ly/mscalc | **Scan here for Android™ Phone and Android™ Tablet App.** |