How to Use a Misco TP Digital Refractometer to Measure Total Protein in Calves
(Test for Passive Transfer)

1. **COLLECT BLOOD SAMPLE**
   - Use a blood tube (see #2 below), 3cc syringe w/20g x 1” or vacutainer needle
   - Draw 2ml to 3ml blood from jugular vein in calves from 2 to 5 days old
     - Restrain calf. Press thumb or finger in the groove of the neck at the base of the neck to stop the flow of blood

2. **SEPARATE OUT SERUM**
   - Let blood sit at room temperature for 12 to 24 hours (use red top tube)
     **OR**
   - Spin blood in centrifuge for 10 minutes (use SST or red top tube)

3. **TEST**
   - Recalibrate refractometer daily (see calibration directions on insert)
   - Carefully remove stopper from blood tube
   - With pipette or 3 cc syringe w/20g x 1” needle, carefully draw up a small amount of serum (it may help to tip the tube) without disturbing the blood clot
   - Need to press GO button to turn on
   - Press menu button of the BRIX until you get the option: TPR g/dl [GO] to Set
   - Place a few drops of serum with a pipette in the center well covering the entire eye
   - Close the lid, press the GO button twice, and wait a few seconds before reading results
   - NOTE: Wipe the center well between readings with distilled water and a Kim-Wipe

4. **RESULTS**
   - > 7 = Calf may be dehydrated or testing procedure was flawed
   - 6 to 7 = Calf absorbed an unusually large volume of antibodies OR may be a false reading – calf might be dehydrated – check calf for scours
   - 5.5 to 6 = Well protected
   - 5.0 to 5.4 = Moderate protection
   - 4.5 to 4.9 = Inadequate
   - < 4.5 = No colostrum, High Risk

5. **GOALS**
   - 80% of total protein readings > 5.5 g/dL or 90% of total protein readings > 5.2 g/dL

6. **ACTION PLAN IF LOW ANTIBODIES**
   - Place calf in clean environment to decrease bacterial exposure
   - Mark calf/hutch as HIGH RISK so everyone is aware of increased concerns
   - Consult your ANIMART veterinarian to review your colostrum management program and develop a Low TP Supplementation Protocol

*How to instructions for Misco Model #PA202X.

©2017 ANIMART, LLC