Fixing Passive Transfer Failure

- Don't guess: use hard numbers. Use a minimum of blood samples from 12 calves; more samples give a better estimate of passive transfer rates.

- Once the failure rate is established get hard numbers for three critical control points: (1) calf age at first feeding, (2) quality and (3) quantity of colostrum fed.

- Write protocols, train staff to follow protocols, monitor protocol compliance. An example of protocol writing is HERE. More on standard operating procedures is found HERE.

- Test, test, test. Keep sampling blood until the passive transfer failure rate drops to the farm's goal.

Something needs to be fixed. Start at these critical control points:

(1) How soon after birth is the first feeding of colostrum?
(2) What quality of colostrum is being fed at first feeding?
(3) What quantity of colostrum is being fed for first feeding?

1. Set up a protocol for measuring colostrum quality. Train staff to use either a Colostrometer or Brix refractometer on all colostrum ASAP after collection. Mark the quality on storage containers – and use the highest quality available for first feedings. Click HERE for using a Colostrometer to measure colostrum quality. Click HERE for using a Brix refractometer when measuring colostrum quality.

   If after testing we find that not enough high quality colostrum is available to feed 3.5 litres within the first 4 hours to all calves, check out the interval between calving and first milking for fresh cows – shorter times should result in higher quality colostrum. Remember that the Ig content of colostrum drops by 17% by 6 hours, 27% by 10 hours and 33% by 14 hours post calving. If no easy solution for improving quality presents itself consider using a colostrum supplement to boost the antibody content.

2. Set up a system to record times when calves are born and when the first feeding of colostrum took place. Large dairies set this goal at 90% to receive their first feeding of colostrum within the first hour and all calves within the first 4 hours. Plan to review this information every week. If these goals are not met work out changes that will make compliance possible.

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3. Use the same record-keeping system for when colostrum is fed to record the volume of colostrum consumed. If stomach-tube feeders are going to be used be sure to include adequate training for staff.

   Our goal is 3.5 litres of colostrum (large breeds) within the first 4 hours of life. Sooner is always better. Regardless of whether the 3.5 litres volume is consumed in one or two feedings it is important to get accurate recording of actual volume consumed.

   If a large volume is fed in one feeding the method of feeding should not make a difference in the amount of antibodies that end up in the calf's blood. That is, either bottle-feeding or tube-feeding gives the same results.

   However, if a small volume (1.5 litres) is fed in each of two feeds, the bottle-feeding method should give the better rate of antibody transfer.

4. Test, test, test. Keep checking blood serum total protein levels. If the practices above are adopted successfully, it is not unrealistic to have 90+ % over 5.2g/dl and 80% at 5.5g/dl and above.

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