

Colostrum Testing

What do you get when you cross a former dairy farmer with someone who produces their own maple syrup? You get someone with information on colostrum testing and passive immune transfer with the equipment to do the testing. I always look to the dairy industry for leading edge research and information on livestock (especially ruminant) sciences.

We all know how important it is to have lambs nurse within the first few hours of life for passive transfer of immunity from their mothers. It is also the reason it is recommended that shepherds vaccinate their ewes during the last month of gestation.

There has been considerable research in the dairy industry on colostrum quality and passive immune transfer including on farm testing methods. You see similar research in the horse industry. One of the tools that has been tested is a refractometer (both digital and optical). This is an instrument that measures the refractive index of light passing through a solution. Maple syrup producers use it for measuring the sugar levels (Brix %) in sap and syrup.

Research has shown a correlation between the Brix reading of colostrum, colostrum quality and passive immune transfer to a calf. It is recommended that colostrum have a minimum Brix reading of 22% for adequate passive transfer. A similar recommendation is given for mare colostrum. However we have never seen anything for sheep colostrum.

We had a refractometer in the right range because of our maple syrup production so we measured the colostrum from all our ewes at the point of lambing. The brix readings ranged from 26% to over 34% with those from our purebred Tunis generally having the higher readings though the sample size was too small to say anything conclusive about breed differences.

We tracked the Brix reading for about 48 hours after lambing and the levels dropped over the first 24 hours to somewhere between 13-16% for ewe milk. In some cases the levels dropped very quickly after lambing which reinforces the need to get the colostrum in those lambs early.

Now when we freeze extra colostrum we record the Brix reading on the bag and if we find that a ewe has poor quality colostrum as measured by a low brix reading we will supplement her lambs with colostrum from our stores with a high reading.

Since that time I have been in contact with Signet (the organization responsible for genetic evaluation of sheep and cattle in the United Kingdom) about colostrum testing in sheep. Like I said there is no information on testing sheep colostrum so they were very interested in what we are doing.

For those of you who would like to test your own flock at lambing, an optical refractometer is inexpensive, easy to use and fairly rugged for "in barn" use. Testing is as simple as putting a drop of colostrum on the glass plate and reading the level through the lens.

I sure would be interested in hearing what others find.

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