Is Your Grain Milling Process Optimized?

May 11, 2022

Nowadays, with increasing input costs for feeding your herd, serving well-milled grain that is readily digestible for your cows is of utmost importance. But this objective is far from being easy to achieve. In order to better understand the situation, two Lactanet advisors took the initiative to evaluate grain grinds on some 40 dairy farms in Quebec.

Surprising Results

In total, over 50 grain samples were sifted by the two advisors. They were surprised to find that only 30% of the grains were ground fine enough for optimal digestion. Even if all the grains were ground with a hammer mill, the fineness of grinding varied from 199 microns (very fine) to 1038 microns (coarse)! The finer the grain is ground, the more digestible it is, so there is no reason not to grind it as fine as possible.

You can call our advisory service[1] if you have questions about the process; we have several solutions for you!

The only limitation is that the feeding system must allow for unrestricted handling. Again, there are solutions for that.

In general, it is agreed that we should aim for 420 microns and less for dry corn and 520 microns maximum for other grains.

But how to explain such a difference between the observed results?

The Mill: A Source of Important Variations!

1. Grain Entry Speed

The faster the grain enters the mill, the coarser the grind will be (without changing the coarseness of the screen). If your grain is too coarse, perhaps you should close the gate a little to slow down the speed of the grain entering the mill.

2. The Screen Size

Which screen should I buy? This is a question we are often asked. In

general, we start by sieving the grains to see if the expected result is achieved. If not, we can look at reducing the screen size. In general, you will have the best chance of success by using a screen of 5/32″ or less[2]. On the other hand, our tests have shown that with the same 5/32” screen, the results varied from 351 to 936 microns in 8 different farms! This shows clearly there is more to pay attention to!

3. Wear and Tear of the Hammers or the Screen

In 40% of the samples, the hammers were too worn. When the tips of the hammers become too rounded, the grind is coarser. It’s time to replace them. Let’s say the screen you bought was 1/8”, but you end up with 5/32” holes; Maybe it’s time to replace it with a new one. An investment of about $150 will quickly pay for itself.

4. Spillage Through the Door

In about 50% of the samples, spillage between the door of the mill and the screen was observed. Contrary to what one might think, we will not necessarily see rounded grains, but the grinding of our grain will be coarser in this case. It is therefore an important element to evaluate.

What have we learned from our experience?

1. Always test the coarseness of your grain.
2. If the result is not optimal, open your mill.
3. Make any necessary adjustments and test again.
4. Monitor milk production, butterfat, manure texture, urea, and de novo milk fatty acid profile levels with PROFILab[1] to assess the effects of changes.
5. If butterfat seems to be decreasing, you may want to consider

reducing the amount of grain fed a bit. When you think about it, if your cows are absorbing grain better, you will need less grain to do the same job! In a time of high feeding costs, isn't that good news?

Don't hesitate to ask an advisor for assistance when evaluating your grain, you might be surprised by the result!

[1] Available in select provinces as of May 2022.

[2] It is possible to successfully make a finely ground grain with a 5/32" screen, but it should be noted that in many cases a screen of 1/8" and smaller is required.

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