Tips to reduce sorting at the feed bunk

COWS IN A BARN can be a bit like kids on an extended school break, there's not much for them to do but lay in their stalls, and pick through the food you give them because they are bored.

Cows sorting at the feed bunk can cause all sorts of problems. Warm weather is on its way and the warmer temperatures plus fans blowing across the feed bunk can dry out the feed and make it easier for the cows to pick out all the goodies from the ration and leave the longer forage particles behind. This can have a serious impact on cow health, milk production and components.

There are ways to tell if cows are sorting their feed. The first thing to look for is deep holes in the feed where the cows have been eating and pushing the lighter forage particles away while looking for the heavier grain particles. The feed can be pushed out quite a ways into the alley with serious sorting. Manure consistency will also be very uneven across the herd with some cows being very loose and other being rather stiff. Some cows sort because they are bored, but sometimes there are underlying factors, both feed and management, which can cause cows to sort even more.

If forages were harvested too dry, or a lack of forage supply has increased reliance on feeds like dry hay or straw, the TMR may be too dry and increase sorting across the herd. If a ration is too dry a lot of farmers are tempted to add water to the TMR to help make the feeds stick together better. Water is something that's already on farm and, if a hose is available, quite easy to add to the TMR. There is research to back up this common

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on-farm practice, and it has shown that adding water can reduce sorting in a TMR that is excessively dry, >80% dry matter (DM). However, a TMR that dry would not be typical in Ontario with the amount of wet forages that are usually fed. Similar research was done with a >60% DM TMR and it also showed reduced sorting when water was added. However, if ensiled forages are excessively dry there are probably bigger problems than just the dry matter. These forages may not be properly fermented, or may be poorer quality which could cause reduced feed intake and poor milk yield.

More recent research has shown that adding water may not be the best solution to this sorting problem. Multiple studies done through the University of Guelph have shown that if the TMR dry matter is between 40 - 60%, which is more typical of TMRs fed to most Ontario herds, then adding water can actually increase sorting behaviour in cows. These studies also noted a decrease in dry matter intake (DMI) with added water. If the ration is already wet enough adding water to the TMR increases the weight or bulkiness of the ration and rumen fill may then limit how much the cows can consume. This could have a negative effect on milk yield.

One study, done during the summer months, indicated that with warm weather the addition of water to the TMR increased the temperature of the TMR itself after feeding. This increase in temperature may indicate increased feed spoilage which would also impact DMI, with cows sorting against spoiled particles, or even avoiding the bunk altogether. Adding water, which is a neutral pH, to forage that is acidic from fermentation can make the mixture unstable and invite all sorts of problems. Increased spoilage of fermented feeds would also lead the cows to sort against these feeds and select for shorter, higher starch particles. The increased intake of these starchy particles can affect rumen health, increasing the risk of acidosis, and can also impact milk components, like butterfat.

There are other ways to increase the moisture of the ration, and decrease sorting, without adding water to the TMR. Decreasing the amount of drier forages in the ration and replacing them with wetter forages is a good first step. For very dry TMRs, feeding wet co-products, like wet brewer's grains, wet distiller's grains or wet beet pulp, can lower the dry matter of the TMR without adding extra water. These feeds will also contribute nutrients rather than just bulking up the ration. Decreasing the dry matter of the TMR by changing the feed is a much safer route when trying to control sorting. The recent measures to prevent the spread of COVID-19 have reduced the availability of some of these wet co-products, but they are good solutions if you can get them.

Molasses-based liquid feed supplements are still available and adding these supplements to TMRs is the recommendation of many dairy specialists. These products provide some moisture but it's more the sticky quality of the molasses that binds forages and grains together in the TMR, making it harder for cows to sort.

Molasses-based products are also a source of tasty sugars and have been shown to increase DMI in cows. Many of these products are also on the acidic side of the pH scale, and adding them to the acidic forages can result in a much more stable TMR than adding water.

Reducing the size of longer forage particles can also reduce sorting. This makes the particle size of the TMR more uniform and gives the cows less opportunity to sort. Mixing the TMR longer or adding or replacing worn knives can help breakdown longer particles. Using a Penn State Particle Separator box system to shake out the TMR is a good way to figure out if forage particles are the right size (Table 1).

Recent research has shown that cattle can learn to sort at a young age, and, once learned, this behaviour persists throughout their lifetime. Ensuring uniform particle size in mixes that are fed to heifers, can help reduce sorting in heifers, and eventually the cow herd.

If a quick solution is required, due to impacted production or components, and changing or adding feeds is not an option due to supply shortages, increasing the frequency of feeding has been shown to reduce sorting in cows. If the current feeding schedule is once per day try increasing it to twice a day. Research has also shown that by reducing the amount of feed at the bunk, cows are less likely to sort, as there is less feed for the cows to play with.

It is impossible to stop all the cows in the herd from sorting. Flinging the TMR around can be a source of entertainment for cows. If sorting is a problem in your herd try adjusting your forages or adding a new feed to your ration. The addition of water to a TMR to reduce sorting should be saved for extremely dry mixes. The old story is that there are three rations for the cow: the one the nutritionist formulates, the one that gets mixed on-farm, and the one that the cows consume. The challenge is to get all three as close as possible for maximum benefit to everyone involved.

Table 1: Penn Start Particle Separator – 3 Pan Guidelines

TMR	% by Weight*
Upper Sieve	6 – 10%
Middle Sieve	30 – 50%
Bottom Sieve	40 – 60%

*portion remaining on each screen as a percentage of the total sample