

March 27, 2017

Dear Ian and Janet,

Thank you for welcoming us and opening up your dairy to our group last week for a partial TMR Audit. An audit is designed to evaluate the feeding program and look for any areas of potential improvement. We realize that time is limited and that you have a lot that must be accomplished each day. Our recommendations have tried to take that into consideration and strike a workable balance between “ideally” and “reality.”

Bunker management:

Alfalfa haylage was well-packed, with somewhat drier, well-fermented haylage in the upper half of the bunker and wetter haylage with more acetic acid in the lower half of the bunk. Corn silage seemed to be more uniform in DM and fermentation profiles across the bunker face. Kernels were not fully processed, but were soft and mushed easily when squeezed. Neither silage was heating. There was some mold present in the alfalfa haylage bunker about 8-10” below the top surface.

The wet brewers was stored in a nice enclosure. The most recent load had been dumped in front of a few feet of brewers remaining from the previous load. Please try to completely turn over inventory each load as the weather warms up.

Tires were in place on top of the plastic, but there was space between tires along the feedout face. Silages were removed from the bunker with a loader bucket in a fairly small region of the silo. Faces were uneven.

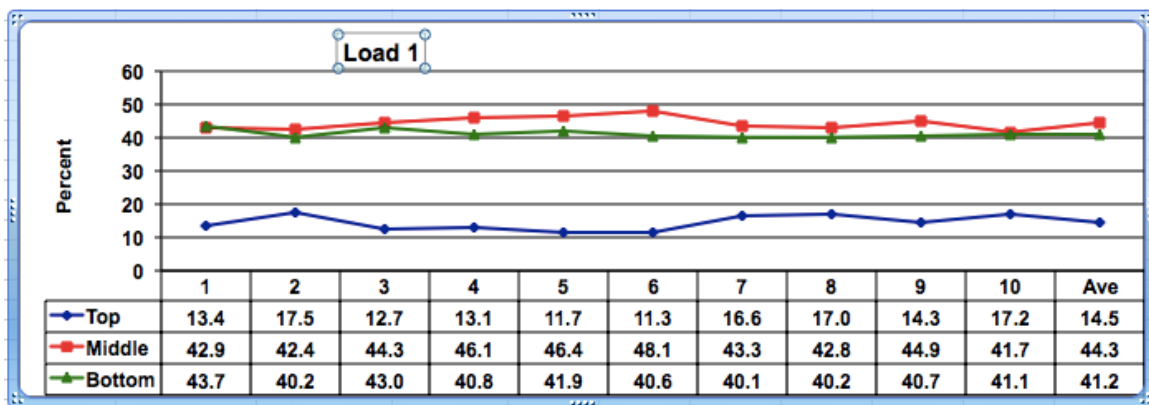
Recommendations: Get the necessary modifications done so that your defacer will reliably work with your equipment, or sell your current defacer and purchase one that will work for you. My favorite is made by Fritsch. Their defacers have been very reliable, and aggressively remove forage from the bunk so that it quickly gets done. After defacing, push the silage into a pile, and premix it by picking it up and dumping it a few times with the loader. This will help to ensure that the silage being fed is uniform, which helps to improve intake consistency and can allow you to feed for a lower level of refusals.

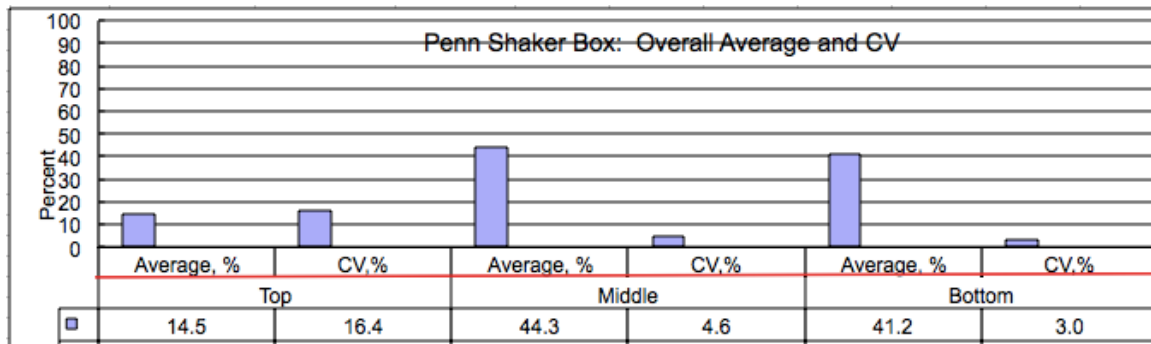
Try to have at least a single, and ideally a double, row of tires that are in contact with each other close to the open face. This will prevent air migration under the plastic and reduce top spoilage over time.

Load Preparation

Minerals had been loaded the evening before and were at the very front of the wagon. I believe this was because you had concern about an auger freezing up over night. I was a bit uncomfortable with this because we are counting on the mixer to lift up the most dense ingredient from the bottom, front of the mixer and disperse it up and throughout the mix. If your equipment allows, try to put it on top of the grains after they have been run into the mixer. Ideally both grains would be deposited close to the center of the mixer. The left rear tire of the mixer was on top of some sand and was elevated a few inches. This has the potential of altering a load cell reading. The mixer was then moved to the bunker area for the addition of straw, WBG, and silage. The mixer was run during ingredient loading. Restrictor plates were set in to assist with straw processing. When we observed the TMR mixing, the mixing motion was not as aggressive as I would like to see. This was likely a function of the restrictor plates being all the way in, and the kicker plates showing some wear. Although we may have altered your normal mixing routine, I believe the usual process is to move the mixer closer to the barn and let it mix for an additional 1-1.5 minutes after all ingredients have been loaded.

We collected 10 TMR samples from the bunk in the order the TMR was discharged from the mixer. These samples were then run through the Penn State Particle Separator and evaluated for consistency throughout the bunk. The goal is that the individual lines will be straight, indicating a very uniform ration. We also calculate a coefficient of variation (CV), which indicates how much variation there is around the mean percentages of particles found on the top and middle screens and pan. The goal is to have the CV be less than ~ 2.5% for the middle screen and pan. We have seen improvements in performance and health when CV's greater than ~ 4-5% were brought down to these levels.





There was a progressive increase in the amount of material on the middle screen from sample #2 to #6, which corresponded with a decrease in the amount of material on the top screen. The pan (mostly grain) was quite consistent throughout the bunk. The CVs for the middle screen and pan were 4.6 and 3.0, respectively. Truthfully, these were better than I thought they were going to be after observing the mixing action of the mixer. However, they can still be improved, and here are the steps to consider.

First, park the mixer on completely level ground when it is moved back to the barn for mixing.

Second, allow it to mix for 4 minutes after the last ingredient has been added.

Third, I don't know the background behind straw usage with the lactating cows, but given your haylage and corn silage chop lengths, maybe it isn't even needed. If it wasn't needed, then the kicker plates could be brought out when mixing the lactating cow loads and the mixer would mix better.

Fourth, replace the kicker plates when you can. They are still working, but could be doing a better job. They should be installed according to the manufacturer recommendations, making sure they are close enough to the wall of the mixer wagon.

I did not get to see the dry cow ration, but there was some concern about the straw particle length in this diet. Material beyond about 2" in length is much more likely to be sorted than feeds processed to a shorter length. Perhaps the load for the dry cows can be mixed for a longer time period (10 minutes?) to adequately process the straw.

Again, thank you very much for allowing us to come to your dairy. Let us know if you have any additional questions.

Sincerely,

Bill Stone and members of the Dairy Health Management Continuing Education Program