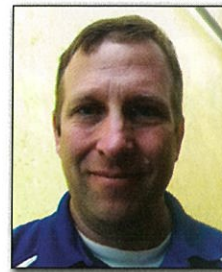


THE JELLYBEAN TEST

By Steve Massie and David Lloyd, Nutrition & Farm Management Consultants
Renaissance Nutrition, Inc. June 2012

As nutritional consultants, we know that formulating the nutrition program on a dairy receives a lot of attention, as well it should. Dairy nutrition has become much more complex through the years and requires expertise, experience and constant training to provide nutritional programs that perform well and are profitable for today's dairy operation. Nutritionists must account for effective fiber, fiber digestibility, carbohydrate type and digestibility, amino acid and fatty acid profiles, commodity prices and efficiencies all while keeping an eye on income-over-feed-costs (IOFC). Qualified nutritionists understand all of these topics and enjoy discussing them; however, they can also cause disagreements among nutritionists on which levels (to feed) are best. Everyone realizes that the results gained from good ration formulations are very critical to the dairies' profitability and success. However, there is a very common problem on many dairies that is often overlooked and can make the best nutritional programs fail, regardless on how well the ration is put together. This problem is total mixed ration



David Lloyd



Steve Massie

(TMR) mixing errors.

Improperly mixed rations can cause daily milk fluctuations, lowered butterfat, inconsistent manure, poor foot health, and if continued over a long enough time period, potentially contributes to increased immune stress and reproduction issues. All of these can hurt overall farm profitability. So it pays to make sure your TMR mixer is doing what it is supposed to do — which is to mix feed properly and put it in front of the cows consistently. If the mix consistency is too far off, it can force a nutritionist to feed a more conservative diet than is needed, which will lower production. The nutritionist may add costly additives to help alleviate perceived issues, when simply being more consistent and accurate in the feed mixer could help these issues disappear and result in expected cow performance.

We should regularly evaluate handfuls of feed from several different places down the feed bunk and lay them side-by-side to see if they appear the same. By examining these handfuls and moving them around slightly, you can get a pretty good idea how well the long fiber is mixed and if there is about the same amount of fines in each pile. While this method is far from scientific, it does give you insight into whether or not you need to look further into a potential mixing error. Be sure to take the samples the same way, by scooping up under the TMR. This way, you will be sure to get all of the fines, and try to sample about the same amount with each handful, so the results don't fool you.

A bit more scientific method is to take each of those handfuls and run them through the Penn State Particle



MEET THE NEW 5M

The new 2012 5M Series premium utility tractors set the standard for comfort, convenience, and performance.

- Optional Deluxe Cab includes Blue-tooth connectivity, loader window, auxiliary audio input, corner-mounted exhaust, and more.
- Features nearly 4,500 pounds of standard hitch lift capacity, with up to 5,700 pounds (2586 kg) available.
- Synchronized range shifting lets you shift on the go between C and D ranges.

Visit Polen Implement today to get the scoop on the new 5m.



POLEN

IMPLEMENT

Keep Rollin' with Polen!

42255 Oberlin Elyria Rd
Elyria, Ohio 44035
440-322-8821

www.polenimplement.com

Separator shaker box. This will tell you exactly how many fines are in each location and how well the longer particles are being distributed. Too much extremely long fiber or an excess of fines seem to be the cause of most mixing issues. Confirming their uniformity will increase your confidence that a good mix is being delivered to the cows.

We can be even more precise and can send TMR samples to the forage lab for analysis. Pulling samples from several places in the feed bunk will tell us both how close the mix is to its formulated values and how physically consistent the mix is. This is an expensive test, but it shows you not only how well the feed was mixed, but also how well you took the sample. With today's TMR, you can change the crude protein of the TMR by 2% points by either scooping up the TMR (catching more fines) or grabbing a handful from the top (letting the fines filter out). If you remember to take this sampling variability out of the testing process, chemical analysis can give you a good idea how well things are mixed. We recommend at least three samples be taken per feed bunk: beginning, middle and towards the end. Many farms run a chemical analysis on a monthly or quarterly basis or after a major feed or forage change occurs to check the TMR mixes. However, a single test does not tell the whole story, and many producers and nutritionists are not willing to go to the extra expense of testing multiple samples to assure good, consistent mixes.

Something we have been doing for over a decade with great success, which is quite simple and very visual — the jellybean test. Simply add five pounds of the brightest colored jellybeans you can find to the TMR. Mix the feed as usual and watch the feed as it is being unloaded. You will note how evenly distributed these neon-colored markers are, indicating how well the feed is mixed. If all the jellybeans show up in a clump, you have a mixing issue. Any hard, brightly-colored candies can work as long as they stand out in the final TMR and are not too quickly dissolved by water. I've tried a certain hard-shelled chocolate candy, but their colors are not as bright, and it always seems more of them end-up in the "mixee" than the mixer. One advantage to this test is that it is very visual for the employee(s) doing the mixing and will help show how important consistent mixing is to the dairy farm.

We recommend producers check their TMR mix regularly. There is just too much money involved if something changes. Furthermore, we also recommend checking TMR's with each forage change. Alfalfa and grasses mix very differently. Dry hay can give a lot more issues than well-made haylage. There are several common feed

ingredients that can change how the mixer works with their addition or subtraction. Way too commonly, we see farms that have added 20% more cows, but did not add mixer capacity or mix more frequently with a smaller batch. If you look in your owner's manual, most mixers recommend a specific amount to be used for optimal results, generally two-thirds to three-quarters of total capacity. We commonly see TMR mixers that are filled well in excess of the recommended capacity to the point that even sideboards have been added to keep the feed from overflowing. In one recent experience, the entire five pounds of jellybeans was in a two-foot space of the feed bunk, because the feed was oozing over the sides and had no chance to be mixed. When the issue was addressed, the cows increased five pounds of milk in ten days, because they were getting a consistent and accurate diet fed as it was formulated.

TMR consistency is critical in maintaining good milk production, healthy cows and profitability. We do not need to spend a lot of money or spend a lot of time to confirm that we are mixing our TMR's well. The "jellybean test" is a quick and inexpensive way to check our on-farm consistency, and the Penn State shaker box is a powerful tool to confirm our mixes. The order feeds go into the mix, the contents of that mix, the moisture in the TMR and the amount of time we spend mixing all impact on a TMR's consistency and a farm's bottom line. Inspection after any feed change will help minimize mixing errors and keep a uniform mix in front of our cows, so they can give us consistent results. If the results are the same day-to-day, we can better interpret them and help adjust things accordingly, so the herd can be more profitable year-to-year.

FARM & COMMERCIAL BUILDINGS



WWW.CURRYLUMBER.COM
**CURRY LUMBER &
 POLE BUILDING CO'S.**

SINCE 1853
150 Years of Excellence

WOOSTER, OHIO
 330-264-5223

331 WEST HENRY STREET
 WOOSTER, OH 44691

1-800-445-6724
 FAX 330-263-4599

HAROLD'S EQUIPMENT, INC.

animat

Leader in Interlocked
 Rubber Flooring!

*Special Pricing
 Through October 15!
 Call Now!*



For use in free stalls, alleys, milking parlors
 or anywhere your cows may walk.

- Absorbs shocks
- Provides superior traction — even when wet
- Allows cows to regain confidence and show typical heat period behavior
- Nonporous surface is easy to clean and disinfect

HAROLD'S EQUIPMENT, INC.

2120 Co. Rd. 168, Dundee, OH 44624

Harold Neuenschwander, Owner

Phone: 330-893-2348 • 1-800-905-0940 • Fax: 330-893-3459
 www.haroldsequipment.com • haroldn@haroldsequipment.com