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Don't let shrink kill you with high feed prices

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On most dairies, feed represents the largest single cost center. Thus, feed shrink or any feed that is delivered or raised on the farm that is not consumed by the cattle is a major negative economic factor.

Feed shrink is caused by many factors, including delivery weight errors, wind, birds, rodents, tires and tracked feed, cattle tossing feed, silage bunker losses, feed refusals, bunk heating and spoilage, moisture losses, mixing errors, scale accuracy, and water damage. Such losses may represent 5 percent to 30 percent of the feed purchased by the farm.

Delivery weight errors. The use of on-farm scales for every bulk product delivered to the farm, as well as milked shipped, has greatly increased. As dairies increase in size the cost of the scale becomes a minor investment in the total operation, but one that has a great potential for profit. For example, if a 2,000-cow dairy feeds 4 pounds of soybean meal per cow each day, a semi-truck load would be needed each week. If loads were short only 100 pounds each week it would amount to 2.5 tons on the year, or at today's prices about \$1,000.

The situation is even worse during muddy field conditions. If you are using a clean truck tare weight for a truck that has become caked with mud, you may be paying for 500 pounds of mud each time it crosses the scale. Also consider if the driver was on or off the truck, and the amount of fuel present when the tare weight is taken. If you do not have scales on your farm, consider using those at local business to ensure that you are getting all that you are paying for.

Wind. How much of your feed becomes

dust in the wind? Dry ingredients with small particle size and low density are most affected by wind losses. Some on-farm records indicate that losses of soybean meal in a commodity shed are 8 to 9 percent. If you are paying \$380/ton for soybean meal, the real cost is about \$414/ton, or at a daily feeding rate of 4 pounds your daily feed cost just increased by 6.8 cents per cow.

In areas where wind is a factor, consider wind direction when planning facilities, or the use of windbreaks around commodity sheds. If you are using a dry, low density product, consider pelleting or mixing some fat or other ingredients with it to increase density and reduce the effect of wind.

Birds. How many birds did you feed today? Starling can consume up to 50 percent of their body weight in grain each day. In addition, fecal contamination may pose a disease threat to pregnant animals and calves. If there are 20,000 birds present and 80 percent are using the feed bunks, this represent 1,000 pounds of feed each day or 7,000 pounds per week.

It is important to keep in mind that feeding birds consume only concentrate. If concentrate cost is 15 cents per pound, the cost of feeding birds is \$150 per day or \$1,050 per week. If the dairy is feeding 2,000 lactating cows this represents 7.5¢/cow each day, or increases feed cost per hundred-weight of milk by 10 cents if the herd is producing 75 pounds of milk each day.

Another factor to consider is the impact of birds upon nutrients in the ration. In the example above, 1/2-pound of concentrate per cow is removed from the ration. This could represent 1.5 to 2 pounds of daily milk per cow. If there are further reductions in feed intake due to fecal contamination, the potential milk loss may even be greater than the loss of feed.

Bird control is usually needed 2 to 4

months per year. Controlled environment barns and tunnel or cross-ventilated barns reduce bird losses in the feed bunk to near zero, but potential losses may still occur in commodity storage areas. In drylots and naturally ventilated free stall barns, birds are going to be an issue. Exclusions methods in free stall barns may help, but drive alleys usually have openings on both ends that provide an entrance into the facility.

Many different methods of bird control can be used, including habitat management, harassment, and population management. Habitat management includes reducing access to feed and water. Birds will generally not roost in the same area as they feed. Feeding generally occurs over the middle of the day. Reducing the amount of feed available in bunks during the middle of the day can be helpful. Altering feed delivery so more feed is available during evening and night hours may help reduce losses. Lowering the water level in drinking troughs to more than 6" from the top will also prevent birds from drinking while perching on the rim, and maintaining a water depth of more than 6" will prevent birds from standing and drinking.

Rodents. Who fed the mice today? Rodents are generally attracted to feeds with higher fat contents. Waste due to holes in bags, or increased spoilage due to holes in silage covers, may be a greater concern than actual consumption of feed. Rodent control around silage piles includes excellent weed control and, in some cases, use of fencing to keep them away from feed. Deer, turkeys, and raccoons can also eat significant amounts of feed and cause spoilage.

Tires and tracking. Take a look around your farm. Where do you see feedstuffs in places other than the bunk, mixer wagon, or feed loader bucket? What is the price of the ingredients you see scattered on the

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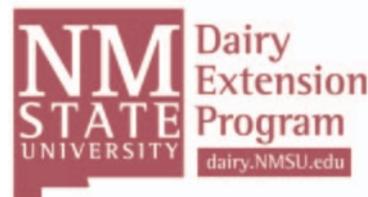
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road or mixed with the dirt? Using a loader to transport high priced commodities could be an issue if there is significant loss from the bucket during this movement. Consider how you might reduce travel distance, or make a premix of several commodities to reduce travel time and feed losses.

Tossed feed. Feed is an expensive cattle toy. Cattle tend to like to toss feed, and increased fly pressure generally increases this activity. Post-and-rail feed barriers allow for more of this activity. Some studies estimate feed loss is 2.5 percent less when headlocks are used as the feed barrier. This could amount to 3 pounds of feed per day or 1.5 pounds of dry matter per cow each day. Maybe your estimated feed intake is really only 53 pounds per day, rather than the 54.5 pounds estimated by feed delivered minus feed refused. This could represent over 20 cents per cow per day.

Silage bunker losses. Do you really want to know what this number is on your farm? Many producers limit total silo losses to near 5 percent, but others still have issues to correct and are losing up to 30 percent of the forage that is harvested. A goal would be to get under 10 percent and then try to reduce it to 5 percent.

Reducing silo losses is a matter of correctly managing harvest, filling, covering, and feedout. The single most critical factor may be harvest moisture. Wet or dry plant material increases losses. Use of inoculants or preservatives may help reduce losses, but they increase when the material is either too dry or too wet. Chopping quickly, achieving a correct density, and covering immediately after filling are key ways to reduce losses. Overfilling bunkers increases losses due to inadequate packing. Keeping the feed face vertical and sizing it to fit the herd are critical factors in reducing losses during feeding.

Feed refusals. Do leftovers become fertilizer? Most feed refusals are still acceptable for some groups of cattle. Use of refused feed for heifers, or limited use for dry cows, is a way to cut feed cost in these groups. In areas where beef operations are located nearby, a beef producer may be willing to purchase refusals.

Some producers try to feed for a slick bunk to reduce the amount of refusals. A normal practice would be to feed for 3 to 5 percent refusal. However, with high feed prices many farms are trying to reduce this even more. Dairies that feed only once per day have significant challenges to feeding to a slick bunk. Adjustments to feed delivery are only made once daily, and changes in intake make this very difficult to manage. Dairies that only feed during daylight hours also have a challenge in ensuring adequate feed is available during night hours. This is especially true for summertime feeding when 60 percent of feed may be consumed during the cooler night hours. Farms feeding 18 or more hours each day may be better able to manage bunks to reduce refusals. Emphasis should be placed on ensuring that cattle have access to adequate feed 22 hours each day.

Bunk heating & spoilage. Is your feed hot? Heated feed is the result of secondary

fermentation that robs the ration of its most digestible nutrients. As dairymen we want our cattle to transform the diet energy into milk, not heat in the bunk. Heated feeds also reduce feed intake.

It is important to determine the cause of feed heating. Poor silo face may be the root of the problem. Silage facers and correct silo face size are important factors in keeping silage fresh. Sometimes when low quality water (high in bacteria) is added to a TMR, heating may result. Feeding more often during the day will help reduce feed heating and resulting losses. In some cases, feed additives may also be helpful in reducing the rate of bacterial and yeast growth to reduce secondary heating.

Feed moisture loss. When wet feeds are delivered, ambient temperature, wind, sunlight, and relative humidity become our enemies. These all combine to cause evaporation and loss of feed moisture. The longer we store feeds, the greater the losses. Protection from wind and sunlight can help reduce losses, but to keep them low daily deliveries are best. In most cases this may not be possible. The goal should be to receive feedstuffs several times per week, or use silage bags for longer term storage. Some on-farm measurements of wet products stored on cement indicate that moisture loss is about 1 percent per day. If products are going to be fed over a week, some ration changes may be needed to account for dry matter changes during the feeding period.

Mixing errors. Are mixing errors really feed shrink? Although feed is fed to the cow, if it is not fed correctly it can increase feed cost and reduce the length of time a quantity of feed should last.

A quick check is to determine how long it should be between deliveries of feedstuffs. Simply dividing the amount of product delivered by the amount fed each day should give an estimate of when the next shipment should be needed. For example: If you feed 1,000 cows 4 pounds of soybean meal each day, a 25-ton load should last 12.5 days. But if near the end of 9 days you realize you will need a delivery the next day, this is about a 16 percent apparent loss or shrink. In looking at the feed records you discover that although the feeder was supposed to have added 500 pounds to each of 8 daily loads of feed, he actually had been adding

540 pounds to each load, or 320 more pounds each day. Thus, about half of the loss was due to a mixing error. Careful attention to correct addition of ingredients is very important in reducing feed waste.

In reducing mixing errors it is important to consider how much of a feedstuff is added to the TMR mixer. In general, feedstuffs that will be fed at less than 5 pounds per head per day should be mixed with other ingredients before their addition to the TMR mixer. Making on-farm premixes, or purchasing premixes with several ingredients, are preferred to making small additions. A bucket designed to hold 2,000 pounds of silage does not effectively deliver 100 pounds of premix to a TMR wagon.

It is also important to watch the order of ingredients added to the TMR mixer. Some employees may try balance the total load weight by the amount of the last ingredient added. If it is of high cost or of great importance to the diet, it may be either shorted or over-fed depending upon errors made when adding prior ingredients. Sometimes it is good to have a low cost ingredient as the last one added, or to tell employees it is more important to add the correct amount of all ingredients and avoid shorting or adding more of another ingredient to balance the total load weight.

Scale accuracy. Scales are either electronic, mechanical, or a combination. All require calibration and maintenance. Sudden stops or starts while on the scale platform can cause significant damage. Employee training is necessary to avoid scale damage. Scales should be certified at recommended intervals, and keep in mind that certification means the scale operates within a certain range of accuracy. Use the same scale for both the tare and gross weights.

A good management practice is to run the TMR mixer over the farm scales a couple of times each month to ensure it is still accurate.

Water damage. Moisture can easily damage minerals and vitamins. It may result in mold growth in other dry feeds. It also adds weight that reduces the amount of dry matter fed unless adjustments are made. Keep in mind that rain also cleans mold and bacteria from the air and deposits it onto your feeds. Piles of dry feed in bunkers are prime examples of potential feed loss on your farm. Protecting feeds from moisture is important. Bunkers with dirt floors and round bale sidewalls are a guaranteed way to increase feed cost.

Conclusions:

The factors discussed here represent a potential 10 to 15 percent decrease in feed cost for most dairies. It should be our goal to get forage losses below 10 percent and work toward 5 percent. Purchased concentrates should be below 5 percent. Commercial feed mills generally run less than 1 percent. Therefore, on the dairy we have a lot of opportunity in this area.

The full text of this article appears in the proceedings of the 2009 Western Dairy Management Conference held in Reno, Nevada; (<http://www.wdmc.org/proceed.htm>)

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