There Are Multiple Uses for the AgriNIR Analyzer

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The AgriNIR Analyzer is a portable unit that can be used to monitor forage dry matter (DM) changes rapidly. These results can then be used to adjust the quantity of silage added to the mixer wagon to maintain the same pounds of DM in the ration from the forage. This reduces the daily variation in TMR dry matte and should improve the consistency of both dry matter intake and milk production.

However, there are a number of other applications that this unit can be used for. These additional uses increase the value of the unit to the producer and should shorten the period of time needed to payback the cost of the unit. Examples of these applications are:

1. Checking forage DM to determine when to harvest –

   In recent years, there has been a shift in the target DM at harvest for ensiling forages. The trend is to harvest them at a slightly higher dry matter. This reduces the runoff from the silo and generally improves he efficiency and quality of the silage fermentation process. Wet silages (<30% DM) have a higher risk of a prolonged early fermentation phase that can result in high levels of acetic acid in corn silage. In some herds, high levels of acetic acid in silages are associated with poor dry matter intakes and low or variable milk production. In alfalfa silages, the risk of a high butyric acid or clostridial fermentation increase as forage DM drops below 30%. These silages are related to variable intakes and a higher risk of fresh cow metabolic problems. A lot of these potential problems can be avoided by just being careful to not harvest and ensile forages in bunker silos that are < 32-33% DM. Samples from windrows or different fields can be monitored for DM content to determine when they should be chopped. This simple step can go a long way in improving the fermentation quality of the silage and the animal performance obtained when using the silage in animal rations.

2. Determining the variability in dry matter and nutrient composition of silage samples at different locations on the silo face –

   A challenge when using silages in dairy rations is variability of DM and nutrient composition on the silo face. This is not a big problem is a defacer is used and the entire face is being removed and mixed before feeding each day. However, when only a portion of the total silo face I used in a ration, there can be variation in the DM and nutrient composition of the silage from different parts of the silo used in the ration. These differences may be more variable along the top and sidewalls in the silo. By mapping these variations, you may be able to determine which areas of the silo face should be routinely used for the high producing cows. The areas of the face that are more variable could be used in rations for later lactation cows or heifers. This should decrease the variability in silage quality experienced by the high producing cows and improve the consistency of DMI and milk production.

3. Monitoring the consistency of TMR mixing and delivery –

   How consistent is the TMR mixed and delivered to the feed bunk? Does the proportion of ingredients or nutrient content vary from one end of the bunk to the other? This can be easily evaluated by taking 4-6 samples along the length of the feed bunk immediately after the feed is delivered from the mixer. One way is to put some plastic containers at various points in the bunk after it has been swept out and before the fresh feed is delivered. After the mixer wagon goes through the barn, you can then pull the containers out, sample and analyze the contents for things like, DM, CP, NDF, chloride, etc. In some situations, you will find large variations in these parameters along the length of the bunk. The first feed out of the mixer wagon may be very different than the last feed delivered. If you do find differences, you may need to work with your nutritionist and alter mixing time, load size or the order in which feeds are added into the mixer. Variations in DM or nutrient composition along the feed bunk, decrease the consistency of the ration consumed by the cows and can be associated with variable or lowered milk production.

4. Checking for changes in nutrient composition in the silo –

   As you move through the silo, it is common to run into different cuttings of hay crop silage or fields with different corn silage hybrids. A quick check will provide information on these potential changes. By relaying this information to your nutritionist, it will help them in keeping the ration more consistent for the cows.