FEEDING NEW CORN SILAGE

Dairymen and dairy nutritionists know that whenever they change corn silages, production changes often occur. Even when nutritionists have the benefit of having good samples analyzed at good laboratories before balancing the ration; often we must feed the ration, watch the cows and look at the manure and measure milk production before we really know how any corn silage feeds. When opening new silos the problems are compounded by having to sample from a pile that is not opened yet, the silage in the wedge can be highly variable and often contains significant amounts of spoiled silage. To overcome this, typically dairymen will open the silos while still feeding from another silage pile. This provides the nutritionist with a better opportunity to sample and evaluate the new silage. At the same time, by opening the new silo early, the initial material can be fed to heifers, dry cows and or at least low cows to prevent feeding this less desirable silage to close ups, fresh cows and high cows. Feeding various feed additives during this period of transition from one silage to another and when toxins are more likely present are advised. Products such as yeast cultures, live yeasts, direct fed microbials, buffers etc. all have been shown to be of aid when changing feeds and or when feeding these more challenged silages. Feeding these products and making the switch over from one silage to another gradually, over a 7-14 day period minimizes the problem of switching over silages and is typically sufficient to allow the change to occur with no significant problems developing.

When producers are changing to a new silage crop, especially one that has fermented less than 4 months, dairymen still report significant losses in production and an increase in digestive upsets. There are several possible explanations for this and by identifying them it may be possible to help eliminate at least some of the new corn silage slumps that herds experience. It should be noted that any corn silage fed within 4 months of ensiling presents an increased risk of causing problems. Experienced dairymen and nutritionists recognize that there are really new general categories of new corn silage. There is corn silage that is less than one week old; silage that is between 1 and 6 weeks old and silage that is between 6 weeks old and 4 months old.

The most general descriptions of important characteristics of silage which affect its' feeding value and challenges are shown below.

	Total Sugars	***Starch Availability***	***Fiber Digestibility***	***Soluble Crude Protein***	***Microbial Count***	***pH***
Age 1-7d	HIGH	POOR	POOR	LOW	INCREASING	4.00
Age 7-42 d	MEDIUM	POOR	POOR	LOW	HIGH	3.75
Age 42-120 d	MEDIUM	IMPROVING	IMPROVING	IMPROVING	DECREASING	3.65
Age 120 days	MEDIUM	BEST	BEST	HIGH	LOW	3.70

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The sugars present in fresh corn fodder are converted to fermentation acids by lactic acid consuming bacteria. Feeding fresh corn fodder or very fresh corn silage, less than 7 days old, can result in an increased risk of acidosis. This is partially the result of the higher sugar content and the more rapid acid production in the rumen from sugar. At the same time, the starch in new corn silage is not readily available and poorly fermented in the rumen. As a result, the starch from new silage passes undigested into the small intestine and results in more digestive upsets and possible problems. This lack of available starch and poorer fiber digestibility means there is notably less energy available from new corn silage. The nitrogen which is what determines the crude protein level, in new corn silage, is not as soluble and as a result rumen bacteria may be effectively starved for a nitrogen source which they require for optimum growth. Combining all of these challenges, with the fact that the rumen microbes are confronting a huge dose of live silage fermenting bacteria, results in the desired rumen bacteria being highly stressed. Fiber digesting bacteria are most sensitive and take the longest time to correct after such challenges.

What can producers and nutritionists do when they are forced to feed corn silage that has not fermented the desired 120 days or more?

	Total Sugars	***Starch Availability***	***Fiber Digestibility***	***Soluble Crude Protein***	***Microbial Count***
Age 1-7 d	Reduce added sugar	Increase starch or grain fed	Feed more digestible high fiber by-product feeds	Consider feeding NPN or urea	Feed a live yeast or yeast culture product and enzymes and buffers
Age 7-42 d	No change or reduce added suagr	Increase starch or grain fed	Feed more digestible high fiber by-product feeds	Consider feeding NPN or urea and or more degradable protein	Feed a live yeast or yeast culture product and enzymes and buffers
Age 42-120 d	No change	Monitor availability	Monitor digestibility	Monitor benefit	Monitor additive need
Age 120 days	No change	Monitor availability	No change	No change	Monitor additive need

By recognizing the changes that occur in corn silage over time, as the silage ferments and then sits, producers and nutritionists can minimize the problems when forced to feed corn silage that has not fermented the preferred 120 days or more. By being able to always feed silage that has fermented a minimum of 6-8 weeks many if not all of the problems can be alleviated through the use of feed additives and minor changes in the rations. If at all possible producers should avoid feeding only unfermented feed and then feeding actively fermenting silages. There are essentially no practical means of dealing with the combined challenges the nutritional content and microbial imbalances that this causes.

CONSULT YOUR NUTRITIONIST AND DECIDE ON A PROGRAM FOR FEEDING AND EVALUATING NEW CORN SILAGE AND MAKING RATION ADJUSTMENTS NOW.

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