7 SILAGE MEASUREMENTS TO TAKE NOW (and help improve silage)

The first steps to improving next year's silage crops are to measure some important characteristics of your current silage crop. It is that old, we have to measure it to manage it, story. Recording these measurements will not only help identify weak areas where improvements can be made, but it also will provide some hard numbers allowing year to year comparisons. By being able to compare historical numbers we can then see if changing practices makes an impact. What important characteristics can we measure and how can we use these measurements to help us improve important management practices that hopefully improve the overall silage quality?

1) Packing – no one management practice has been overstressed than packing. However, packing as measured by dry matter pounds per cubic foot may not be the best measurement for evaluating the packing per se. *Porosity* of the silage or the ease at which air infiltrates the silage mass is the critical factor. The wetter the silage is however the harder it is for air to infiltrate the silage and hence the impact of lower packing density or increased porosity is of less consequence. This means wetter silage does not require as high of a density in order to prevent air infiltration. Regardless, now is a time to begin monitoring the density of silages at various locations in piles and bunks to see how well packed the silages are and where problem areas are. ACTIONS – increased packing tractor number and weight, improve packing patterns and efficiency, decrease harvest rates, fill multiple sites at one time to allow more packing tractors, change the angle of the push up ramp,

2) Surface spoilage – the majority of dry matter loss and loss of silage quality occurs within the top 12-24 inches of the surface of most piles. In fact the majority of shrink can occur in the top few feet of most silos. These losses don't occur at fermentation or early in fermentation. By taking samples of the top several feet of silage NOW and comparing these analyses to one taken 3, 6 or 9 months later we can measure the loss of quality and estimate dry matter loss. ACTIONS – cover piles sooner, increase overlap at seams, inspect and repair damaged plastic more often, use double plastic, use new vapor lock plastics, treat tops with a preservative pre-covering,

3) Aerobic stability – silages which are moved or disturbed and let set for even hours before feeding can start to reheat and lose valuable nutrients and develop increased toxins. Typically these issues only occur during periods of warmer temperatures however, silages can be checked even now to see if they start to heat when exposed to air. ACTIONS – use a silage treatment designed to improve aerobic stability, select silages and feeding rates based upon stability and feed needs.

4) Length of cut and kernel processing – silage consistency is as important as silage quality. Corn silage and high moisture corn should be scored for adequacy of processing monthly. These scores along with manure evaluations can help determine if too much starch is escaping the rumen. Also, the degree of processing may be related to incidence of HBS. ACTIONS – provide strict guidance to harvesters as to desired length of cut and degree of kernel processing, re-process silage if required pre-feeding.

5) Fermentation analyses - these can be done to provide information that may be helpful in determining the causes of decreased dry matter intake, ketosis and performance in general. Having these values are also beneficial in eliminating suggestions that these characteristics may be the cause of a problem when they are in fact not. ACTIONS – evaluate all silage making practices and tools to improve front end fermentations.

6) Mycotoxin screening – although to accurately determine the exposure of animals to mycotoxins TMR's should be screened. Having silages screened can help identify the source of the problem. ACTIONS – try to determine where mycotoxins are coming from in terms of varieties, locations, growers etc.

7) Face management – in cold weather face management is less important with one possible exception. Although silages will spoil slower so feedout rates generally can be lower and the amount of disturbed feed down is of less consequence. However, when producers feed the face too slow occasionally all the silage missed will be frozen. Feeding a "frozen" ration can be the cause of digestive upsets thru temperature shock to the rumen bacteria. ACTIONS – provide guidance to feeders as to desired practices and goals in terms of face shape and how much feed is left down, driven over, wasted etc.

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