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HOW CAN LAST YEAR'S SILAGE ANALYSIS IMPROVE THIS YEAR'S SILAGE?

Promar International National Dairy Consultant Derek Gardner explains how taking a detailed look at your silage analyses can give a valuable insight into how to improve silage making.

Last year was far from a vintage silage making season with most dairy farmers having to work hard to produce rations this winter which allowed cows to milk to their potential. Yet as in every year, some farmers managed to make some good silage. And it is usually the same farmers. Hardly a coincidence!

Good silage makers routinely make good silage, year in year out and all farmers should be focussed on making the best silage possible. But where do you start?

How about with last year's silage analysis? Instead of just using your silage analysis to tinker with winter diets, why not use it ask a much more fundamental question - "why did my silage turn out like this in the first place?"

Turning the analysis into a forward planning document rather than just a statement of what happened can help identify where silage making can be improved as it contains a lot of pointers as to where problems may have occurred.

The goal must be to produce a highly digestible, well fermented and palatable feed capable of supporting high feed intakes. So what can an analysis tell us about silage making and where improvements can be made?

The first thing it can tell you is something about the grass you cut. Age of grass is indicated on the analysis by D value and NDF fibre level, and these are the most critical factors determining in silage quality and are responsible for more variation in cows' silage intake than anything else.

Old stemmy grass with a high proportion of dead material is never going to make for good performance. The target is to produce a crop with 68-70D. If D value is lower than target and fibre higher, then it is likely that the crop is being cut too late so review cutting dates. It will almost always pay to bring cutting dates forward to ensure you are cutting a high quality crop even if a bit of total yield is sacrificed in the process.

If you use a contractor, make sure you pay them on time, or even in advance, to get yourself up the queue. If you have your own equipment, service machinery now - well before it's needed - so you are ready to go.

Quality of silage fermentation is also responsible for much of the variation in silage intake. So what was the level of NH3-N in yours last winter? Ideally it should be as low as possible, less than 3%. Ammonia nitrogen comes from grass protein breaking down, because silage fermentation is slow.

A silage pit is actually a compost heap until the air is stopped from getting in and the aim must be to start the conversion from compost to valuable feed as quickly as possible. A lactic fermentation starts 20 minutes after oxygen is excluded. So buy quality plastic sheets well in advance, sheet the clamp walls and get the top sheet on as quickly as possible.

Never roll the clamp first thing in the morning as all you do is push out carbon dioxide, draw in fresh oxygen and so stop the fermentation.

Quality of silage fermentation also depends on the lactic bacilli getting the upper hand in what is a bacterial war between lactic and all of the other spoilage bacteria, yeast, and moulds. What level of acetic acid does your analysis show? It should be much lower than lactic acid levels. Acetic acid puts cows off eating the silage. Any butyric acid in silage is also unacceptable to a cow. Mud and muck inoculate the silage with all the wrong types of bacteria, loading the bacterial war against the lactobacilli, so make sure you aren't picking up soil with the crop and clean the pit and all access to the pit.

The ideal silage dry matter is 27% - what was yours? Too wet and you use up much more of the grass sugars achieving a stable acid fermentation. Too dry and lactic fermentation takes longer to start up leading to a poorer quality feed. Dry silage also increases aerobic losses when the pit is opened.

Finally sugars levels are a good guide. How much was left in your silage? There should be 2 - 4% left after fuelling the silage fermentation to provide essential food for the rumen. If lower, and the acetic and butyric acids are high, then perhaps fermentation was slow, with too much sugar used up in that less efficient fermentation - or that sugar was too low in the first place.

Taking the time to look at last year's analysis could give a real insight to how silage was made and give some real pointers to improving quality this year.