DYNAMIC AG CONSULTANCY
Livestock Nutrition, Health & Management

PO BOX 180 Hamilton 3300
email: s.cotton@dynamicag.com.au
Tel: (03) 5571 1760

Cored Vs grab sampled hay – Effect on quality

It's a timely reminder that taking grab samples from hay or silage is not an accurate reflection of the quality of your product. Recently, I conducted a small test (un-replicated) on windrowed hay that was grab sampled Vs the same hay after baling taken with a corer. The results speak for themselves.

Not only was there a significant reduction in quality, namely digestibility and energy with a grab sample but there was also more protein present in the grab sample. This is due to the fact that generally the clover leaf will shatter as it goes through the baler, resulting in cored baled hay having lower protein than the windrow did.

	Digestibility (DDM) (% DM)	Digestibility (DOMD) (% DM)	ME (MJ/kg DM)
Sample 1-pasture hay			
Core	60.3	57.9	8.8
Grab	55.8	54.1	8.0
Sample 2 phalaris/ryegs hay			
Core	60.4	58.0	8.8
Grab	57.0	55.1	8.2
Sample 3 ryegs/clv hay			
Core	57.9	55.9	8.3
Grab	52.8	51.6	7.5

The driving reason behind the differences observed in digestibility and energy is that a core sample allows collection of a number of different bales which were produced at different areas of the paddock, therefore taking into account all (or the majority) of the variation you expect to see. A grab sample is just a handful of dried pasture taken from one bale or from a windrow and is only representative of the area you took the grab from. The results from a grab sample do not translate to the entire paddock, and therefore people looking to purchase hay (or silage) should be asking if the feed test results they are looking at come from a grab or a core sample.

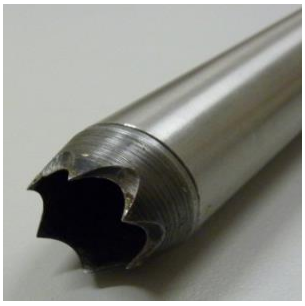
Core Sample

Grab sample

It is vital that hay and silage samples sent for analysis represents the average composition of all the hay in the shed, stack or paddock on your farm. Factors such as rain damage, variation in soil types across the paddock and weed content will all significantly bias a feed analysis if the correct sampling method is not followed.

The core sampling method is the preferred method for obtaining uniform and representative fodder samples for NIR analysis. Corers or probes can be purchased or home made from cylindrical steel tubing, 450mm long and 32mm wide with a sharp cutting edge on one end, and a handle or adapter for attaching to a continuous variable speed power drill on the other end (see photos below). The Australian Fodder Industry Association (AFIA) has published a reference manual of standard operating procedures for obtaining and analysing pasture, hay and grain by NIR analysis and it is recommended that:





For small square bales – Sample between 10 and 20 bales selected at random from the stack. Take one core from each of the bales selected in the centre of the bale on the longest edge of the bale or "butt" end. For large round and square bales – sample between 5 and 10 bales selected at random from the stack. Take one core from each side of the bale at different heights and repeat this on the remaining bales you have selected for coring.

Once completed you will have up to 10-20 'core samples' collected across the stack. Combine these cores into a plastic bag or bucket and mix thoroughly to make one large sample.

Immediately after coring and mixing, place the sample into a zip lock 'sandwich' bag and exclude all the air. Deliver or post the sample to the laboratory on the same day it was collected. Once received at the laboratory, the sample will be 'coned' and 'quartered' (reduced in size) for analysis.

It is difficult to obtain a representative hay sample from hay stacked in a shed, as it is human nature to walk around the outside of the shed and core the outside bales as they are the easiest to get to. Keep in mind that if this hay has been stacked for some time, then rain damage and other factors can alter the quality of these 'outside' bales, thus potentially underestimating the true quality of the hay. It is important to core bales in the middle of the stack and this can be done while loading hay to feed to the stock allowing you to obtain a more representative sample for analysis.

Not only is coring the recommended method for obtain fodder samples for analysis, but it also reduces processing time in the laboratory, potentially allowing you to receive your results sooner.

Talk to Dynamic AG about sampling methods and advice on fodder conservation (03) 5571 1760.