SILAGE ANALYSIS

Introduction

Silage is forage that has been preserved by acidic fermentation; the objective being to maintain the feed quality and quantity of conserved forage. Types of forage commonly conserved in this manner are pasture, maize, cereal (wheat, barley, oats, triticale) and lucerne. The feed value of the silage made will impact on animal production and if poorly preserved can be unpalatable and even detrimental to animal health.

Good quality silage is made from good quality forage providing some rules are followed. Harvest time is one of the critical factors - as plants mature, protein and digestibility decline while fibre (ADF and NDF) increases. Low protein silage will reduce production and growth levels in the animal if the silage makes up a large part of the diet. Feeding silages with high fibre generally reduces the amount an animal can eat in the overall diet (since high fibre levels slow down the rate of passage of the diet through the rumen). Plant stage, conditions at harvest, wilting period and length of chop as well as packing and covering of the stack all impact on how well the fermentation proceeds.

Hill Labs provides a comprehensive range of feedstuff testing specifically designed to help farmers assess the feed quality of their silage.

Hill Labs uses Near Infra-Red Spectroscopy (*NIRS)* measurement for feed quality tests (excluding Dry Matter% and the fermentation indicator tests where the conventional methods are used).

Prediction statistics are generated for each *NIRS* test and prescribed qualifying criteria will drive notation on the lab report for any result with high uncertainty. Reference method (wet chemistry) tests can be requested if required.

Silage Profile [Silage]

Includes the following tests:

- Dry Matter
- Crude Protein
- Crude Fat
- Soluble Sugars
- Starch
- Ash
- Acid Detergent Fibre
- Neutral Detergent Fibre
- Lignin
- Digestibility (DOMD)
- Metabolisable Energy (ME)
- pH
- Ammonium-N/Total N
- Lactic Acid

Results are presented as a histogram where the crop type is specified and if typical “medium” values are known. The Hill Labs Technical Note - Silage Analysis provides more comprehensive interpretation for each test in this profile.

For more information, freephone 0508 HILL LAB 44 555 22 mail@hill-labs.co.nz hill-labs.co.nz

Silage Profile + Volatile Fatty Acid tests [SilVFA]

The inclusion of Volatile Fatty Acids (VFA) tests complements our existing feedstuff analyses. As a result of the complex reactions taking place during ensiling, and various factors affecting the eventual quality of the silage, VFA tests shed light on factors not measured appropriately by existing tests. The pH is an indication of the acidity of the silage, but does not give an indication of the organic acid composition that also affects the value of the silage.

The additional VFA tests included in this profile are:

- acetic acid
- butyric acid
- propionic acid
- formic acid

Extended Silage Profile (ExtSil)

Mineral composition may also be of interest, particularly where the supplementary feed makes up a large portion of the animal's diet. Analytes include all those in the Silage profile together with Nitrogen, Phosphorus, Sulphur, Potassium, Magnesium, Calcium, Sodium, Chloride (including DCAD), Iron, Manganese, Zinc, Copper, Boron, Titanium, Molybdenum, Cobalt and Selenium.

VFA tests can also be requested with this group of tests by requesting ExtSilVFA.

Test options

Profile Name	Lab Code	List price (excl GST)
Silage	Silage	$100
Silage + VFA	SilVFA	$130
Extended Silage	ExtSil	$175
Ext. Silage + VFA	ExtSilVFA	$205
Dry Matter, Crude Protein+ ME	DMME	$65
Additional tests:		
Dry Matter Only	DM	$37
Nitrate-N	NO3	$19
Chloride	Cl	$18

Sampling

A feed sample kit including sealable bags, sampling instructions and request form are available from the laboratory. Sample kits can be ordered online from our website.
It is important to differentiate between freshly harvested forage and ensiled material on the request form. A sample is generally considered a "Silage" after two weeks in the stack or bales.
A full sample bag is needed, particularly where mineral composition is also selected. For accurate dry matter results a sealed bag is necessary.
Samples should be sent to the laboratory as soon as collected or should be stored overnight in a refrigerator if this is not possible.
Tick the appropriate boxes on the request form to ensure you receive the desired analyses.

Contact Details

For further information about any of the above tests please contact an Agriculture Client Service Manager.