

Drinagh Silage Analysis

Term	Description	Typical Range
Dry Matter (%)	The quantity of material left in a feed after all the water has been removed by drying. The value is corrected to allow for losses of volatile but nutritionally valuable nutrients during drying, e.g. volatile fatty acids. Low dry matter silages tend to be extensively fermented and will be high in acids and low in rumen structure, reducing intakes. High dry matter silages are more susceptible to spoilage (bacterial and fungal).	25 - 45
D Value (%)	A measure of the digestible organic matter content in the dry matter. This value is inversely related to the crop's stage of maturity at cutting.	67 – 73
Crude Protein (%)	This value provides little information on the quality of the protein in the silage. If high, additional protein tends to be rapidly degradable and may be poorly utilised, especially if there is inadequate rumen available energy in the diet.	11 - 15
WSC(%)	The sugar content of the silage remaining after fermentation. This value will be affected by the extent of fermentation i.e. extensive or restricted and tends to be directly proportional to the dry matter content of the silage.	2 - 4
NDF (%)	The Neutral Detergent Fibre value indicates the total fibre content of the plant and includes the hemi-cellulose, cellulose and lignin residues. High NDF levels are associated with mature crops at cutting.	45 - 55
ADF (%)	The Acid Detergent Fibre value is like NDF but only measures the amount of cellulose and lignin in the silage. The ratio of ADF to NDF is indicative of the proportion of digestible fibre in the forage.	30 – 40
Oil (%)	Oil is an important energy component of the silage however too higher oil content can interfere with the activity of the rumen microbes.	3 – 5
pH	A measure of the acidity or alkalinity of the silage; pH < 7 = Acidic, pH 7 = Neutral, pH > 7 = Alkaline. Where the pH of grass is above this range, typically because of poor or secondary fermentation, undesirable VFA's may have been formed and production may be reduced. Conversely feeding more acidic silages may impair rumen performance, resulting in acidosis, lower intakes and reduced production.	3.8 – 4.2
Lactic Acid (g/kg)	The main acid produced during the natural fermentation of sugars in silage. Poor preservation results in higher levels of undesirable acetic and butyric acids from secondary fermentation. Lower levels are associated with restricted fermentation e.g. wilted and chemically restricted.	50 - 100
VFA's (g/kg)	The percentage of Volatile Fatty Acids (predominantly, acetic, propionic and butyric) produced during silage fermentation. Lower values are desirable as they indicate a stable silage.	20 - 40

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Ammonia (%)	High values are indicative of butyric fermentation and may be associated with high blood and milk urea levels; high blood urea has been both directly and indirectly linked to infertility. Care should be taken in interpreting this term as it is a percent of total N and not a percent of the dry matter.	3 - 6
'sN' 'aN' 'bN' 'cN'	Rumen degradable fractions; these values measure the instantly soluble (sN), rapidly degradable (aN) and potentially degradable (bN) protein fractions of the silage. The rate of fermentation of the potentially degradable fraction (bN) is described by 'cN'.	N/A
'aDM' 'bDM' 'cDM'	Rumen degradable fractions; these values measure the instantly soluble (sDM), rapidly fermentable (aDM) and potentially fermentable (bDM) dry matter of the silage. The rate of fermentation of the potentially fermentable fraction (bDM) is described by 'cDM'.	N/A
ME (MJ/Kg)	Metabolisable Energy – a measure of the energy content of the feed available to the cow after losses in, faeces, urine and methane. It is predicted from the 'D value'.	10.5 – 11.5
DMD- Dry Matter Digestibility	This is a measure of the energy an animal can get from the silage. Poor late cut silage will have a DMD as low as 55% and a low energy value while excellent leafy silage will be >75% and have a high energy value. E.g. a 3-unit drop in DMD will need an extra kg of meal to maintain DLWG's in beef cattle. DMD will also affect intake, as silage with a high DMD will be digested quicker thus allowing more intake. High DMD values generally give high energy and protein levels.	65-75