



# INTERPRETING THE FEED ANALYSIS REPORT

Your feed analysis report will include results for some or all of the following tests. We recommend contacting your local adviser for further explanation and interpretation of the results.

## DRY MATTER % (DM)

- 'Dry Matter' is everything remaining after all the water in the sample has been removed
- It is expressed as a percentage of the original sample.  $DM\% = \text{dry matter} \div \text{sample weight} \times 100$
- DM contains the energy, protein, vitamins and minerals required by animals for maintenance and production.
- DM is the basis for a true comparison between feeds and feed components.

## DRY MATTER DIGESTIBILITY % (DMD)

- DMD is the proportion of the dry matter in a feed that can be digested by an animal.
- It is expressed as a percentage of DM.

## DRY ORGANIC MATTER DIGESTIBILITY % (DOMD)

- DOMD is the proportion of the organic matter in the dry matter that can be digested by an animal.
- It is expressed as a percentage of DM.

## CRUDE PROTEIN % (CP)

- Crude protein = nitrogen (N)  $\times$  6.25
- CP includes protein and non-protein nitrogen.
- It is expressed as a percentage of DM.

## FIBRE

- Fibre is the structural part of plants and feeds.
- It consists mainly of compounds called hemicellulose, cellulose and lignin.
- It is expressed as a percentage of DM, either as acid detergent fibre (ADF) or neutral detergent fibre (NDF).

**ACID DETERGENT FIBRE (ADF)** is a measurement of cellulose and lignin.

**NEUTRAL DETERGENT FIBRE (NDF)** is a measurement of hemicellulose, cellulose and lignin.

## METABOLISABLE ENERGY (ME)

- ME is the amount of energy in a feed that is available to an animal to utilise for maintenance, production and reproduction.
- It is expressed as megajoules of metabolisable energy per kilogram of dry matter (MJ ME/kg DM).
- It is calculated from the digestibility of the organic matter as a percentage of DM.

## ASH CONTENT

- Ash content is the total inorganic matter (minerals) present in a feedstuff.
- It is expressed as a percentage of DM.

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## FAT (ETHER EXTRACT OR EE)

- EE measures the lipid (fat) content of the feed: it also includes waxes, organic acids, alcohols and pigments.
- Fat content greater than 5% of the total diet can inhibit rumen function.
- Fat is expressed as a percentage of DM.

## ORGANIC MATTER (OM)

- Organic matter is everything present in a feedstuff except ash.  
Ash % + OM % = 100 % DM.

## SILAGE pH

- Silage pH is a measure of silage acidity and therefore the extent of fermentation.
- Silage pH is influenced by DM content, the sugar content of the forage ensiled, and the type of fermentation.

SILAGE DM CONTENT (%)	RISK OF POOR FERMENTATION IF pH EXCEEDS:	
	GRASSES	LEGUMES AND GRASSES WITH LOW SUGAR CONTENT
15	4.10	4.20
20	4.20	4.30
25	4.35	4.50
30	4.50	4.70
35	4.65	4.80

- For DM > 35%, pH is not considered a useful guide to fermentation quality: silage ammonia-nitrogen is a better indicator.

## SILAGE AMMONIA-NITROGEN

- Silage ammonia-nitrogen is calculated as nitrogen present as ammonia as a percentage of total nitrogen.
- Silage ammonia-nitrogen is the best indicator of fermentation quality.
- If fermentation quality is poor, silage intake and animal response will be poor.

SILAGE AMMONIA-NITROGEN (%)	SILAGE FERMENTATION QUALITY
less than 5	excellent
5 to 10	good
10 to 15	moderate
greater than 15	poor

## CARBOHYDRATES (STARCHES AND SUGARS)

- Carbohydrates are the primary source of energy for rumen bacteria and the animal.
- Total Non-Structural Carbohydrates (NSC) content is a measure of all the available sugars and starches.
- Water Soluble Carbohydrates (WSC) are the labile sugars available to the animal and rumen bacteria.
- It is expressed as the amount of sucrose (%) extracted by this technique.
- Total Starch is determined by the difference of the NSC and the WSC component.
- It is expressed as the amount of invert sugar (as glucose units) found by this enzymic extraction method.