

# INTERPRETING YOUR FEED TEST

Emma Egan, RM Consulting Group

## FEED ANALYSIS RESULTS

Dry Matter (%).....	15.6
Moisture (%).....	84.4
Crude Protein (% of dry matter).....	17.8
Acid Detergent Fibre (% of dry matter).....	14.1
Neutral Detergent Fibre (% of dry matter).....	42.2
Digestibility (DMD) (% of dry matter).....	78.0
Digestibility (DOMD) (% of dry matter).....	72.9
Est. Metabolisable Energy (MJ ME/kg DM).....	11.8
Ash (%).....	14.4
Fat (%).....	3.7

## DRY MATTER (%)

This is the dry portion of the feed after all moisture has been removed. It is expressed as a percentage of the total sample weight. All nutrients are expressed on a dry matter basis to allow for fair comparison.

## MOISTURE (%)

This is the percentage of the total weight of the feed that is moisture. For example, if the moisture is 84.4%, this means in 1 tonne of feed there will be 844kgs of water and 156kgs of dry matter.

## CRUDE PROTEIN (%)

Expressed as a percentage of total dry matter, it is the total protein in the feed including protein and non-protein nitrogen. Legumes such as lucerne, clover and legume grains (lupins, faba beans, peas) will have the highest CP value. Protein requirements are highest in young growing animals and lactating females.

## ACID DETERGENT FIBRE (%)

Expressed as a percentage of dry matter, Acid Detergent Fibre or ADF is the amount of indigestible fibre in the feed. As a general rule, the lower the ADF, the better.

## NEUTRAL DETERGENT FIBRE (%)

Expressed as a percentage of dry matter, Neutral Detergent Fibre or NDF is the amount of fibre in the feed. The lower fibre, the more the animal can consume. This said, if the NDF is too low (<30%) there is an increased risk of acidosis.

## DIGESTIBILITY (%)

This is the percentage of total dry matter that the animal can digest. For example, if the digestibility is 78%, an animal eating 10kgs of the feed per day will only be digesting and utilising 7.8kgs. Less than 55% digestibility is inadequate, even if ad-lib feed is provided. Dry Organic Matter Digestibility or DOMD is the percentage of organic matter that can be digested by the animal.

## METABOLISABLE ENERGY (MJ ME/KG DM)

Calculated from DOMD, metabolisable energy is the energy portion of the feed that the animal uses for maintenance, production and reproduction. It is expressed as megajoules of metabolisable energy per kilogram of dry matter.

## ASH (%)

Expressed as a percentage of dry matter, ash is the total inorganic portion of the feed.

## FAT (%)

Expressed as a percentage of dry matter, fat is a sum of the total waxes, organic acids, alcohols and pigments in the feed. Fat content over 5% can inhibit rumen function.

## MEASURE TO MANAGE

Knowing the quality values of your feedbase through feed testing can help you to select the most cost effective feed to meet your animal's requirements.



## INTERPRET YOUR FEED RESULTS

The table below may be used as a template to interpret your feed test results. The main components for interpretation have been included in the table below, with spaces for you to enter your own data and interpretation.

Test Component	Reading	Comment	Notes
Dry Matter (%)		This provides an indication of the amount of actual feed, on a dry matter basis, in relation to moisture. Generally, dry matter content is not of concern unless very low, with subsequently high moisture that can restrict feed intake.	
Moisture (%)		The higher the moisture content, the less of a feed, on a dry matter basis, an animal will be able to consume. Note that hay should not exceed 15% moisture, as this is conducive to mould growth.	
Crude Protein (%)		Protein requirements will vary depending on the class of stock. Young growing and lactating animals will have the highest requirements. See table 1 for requirements.	
Acid Detergent Fibre (%)		The lower the ADF the better. This means less undigestible carbohydrates (cellulose and lignin). As the plant reaches maturity, this figure will increase.	
Neutral Detergent Fibre (%)		NDF is a balancing act between reduced feed intake and the risk of acidosis. The optimum NDF range will vary across livestock species and classes. As with NDF, the older the plant, the higher this reading will be. See table 1 for requirements.	
Digestibility (DMD) %		The higher the digestibility, the more of the consumed feed that is available to be utilised by the animal. If digestibility drops below 55%, it is likely that your animals will struggle to maintain their condition. Note that digestibility will decline as a plant matures.	
Metabolisable Energy (MJ ME/kg DM)		Energy requirements will vary depending on the class of stock and their production. See table 1 for requirements.	
Fat (%)		Fat in excess of 6-8% of the diet's total dry matter can cause digestive disturbances, diarrhea and reduce feed intake.	

## STOCK ENERGY AND PROTEIN REQUIREMENTS

The tables below may be used as guides to determine livestock requirements for energy and protein.

**TABLE 1. Energy and protein requirements of different classes of stock**

<b>Class of Stock</b>	<b>Dry Matter Intake (DMI) % of liveweight</b>	<b>Crude Protein (CP) % of DM</b>	<b>Neutral Detergent Fibre (NDF) % of DM</b>	<b>Metabolisable energy (ME) requirement (MJ/kg DM)</b>
<b>Cattle</b>				
Cow - Late Pregnancy	2.5	12	48	9
Cow - Lactation	2.8	15	43	10.5
Weaner Calf - Autumn Drop	3	14	40	10.2
Weaner Calf - Spring Drop	3.5	16	34	10.8
<b>Sheep</b>				
Ewe - Late Pregnancy	2.8	9	43	9.5
Ewe - Late Pregnancy (Twins)	2.8	11	43	10.5
Weaner Lamb - Merino	5	16	27	11
Weaner Lamb - Crossbred	4	16	30	10.8

Source: A guide to daily nutrient requirements (adapted from NRC, 2007), Productive Nutrition

### FURTHER INFORMATION....

Detailed information of stock requirements is available from a number of sources including,

- **Drought Feeding and Management of Beef Cattle**, DEDJTR 2015
- **Drought Feeding and Management of Sheep**, DEDJTR 2015
- **Beef Cattle Nutrition, An introduction to the essentials**, MLA 2015
- **Supplementary Feeding and Feed Budgeting of Sheep**, DAFWA, 2016