Feed Logic Definitions

Dry Matter (DM) – Dry matter refers to the amount of material (feed) left after all the water in the sample has been removed by oven drying. It is expressed as a percentage of the original sample. It is the dry matter content that contains all of the energy, protein, fibre and minerals and because the moisture contents of feeds differ, all analyses are expressed on a dry matter basis.

Moisture - Moisture measures the amount of water in the feed and is determined by weighing the feed sample as it is received in the lab and then oven drying to remove the moisture and re-weighing. Moisture varies according to the feed – typically 10% for grains and upwards of 50% for silage, fresh pasture and some hays.

Metabolisable Energy (ME) – ME is the amount of energy present in the feed that is available to an animal for maintenance and growth. It is calculated from the digestibility of organic dry matter (DOMD) and expressed as megajoules per kilogram of dry matter (MJ/kg DM). The ME figure given in your Feed Logic report is very important as you can use it to determine if your stock are receiving adequate energy for growth based on their nutritional requirements. If feeding to stock, use the "as fed" figures to calculate requirements.

Digestibility of organic dry mater (DOMD) – DOMD is the portion of the organic dry matter that can be digested by the animal and is expressed as a percentage of dry matter. This parameter objectively measures the quality of the feed and takes into account the inorganic matter (ash – (sand and dirt)). It is calculated by an industry agreed equation that relates DOMD to digestible dry matter (DMD).

Digestible Dry Matter (DMD) – DMD is the percentage of the dry matter actually digested by animals excluding the inorganic matter. High quality feeds have a DMD of >65%, while low quality feeds have a DMD <55%. Where information from feeding trials is unavailable, the DMD can be calculated from ADF figures.

Crude Protein (CP) – Crude protein measures the amount of true protein (amino acids) as well as non-protein nitrogen and is expressed as a percentage of dry matter. Since proteins contain around 16% nitrogen on average, the nitrogen value is multiplied by a factor of 6.25 to calculate the crude protein content of the feed. It is worth noting that because CP indicates both true and non-protein nitrogen, it does not provide information regarding the quality or availability of the protein in a particular feed – it is a crude value.

Neutral Detergent Fibre (NDF) – NDF is a measure of the total cell wall material or plant structure in the feed. It is comprised of the acid detergent fibre (ADF) fraction (cellulose and lignin) plus hemicellulose and this value reflects the amount of forage an animal can consume. As NDF percentage increases, dry matter intake will generally decrease. It is expressed as a percentage of dry matter.

Acid Detergent Fibre (ADF) - ADF estimates the proportion of the feed that is indigestible to stock. It is composed of cellulose and lignin. As ADF increases, digestibility and ME of the feed usually decreases. ADF is also used to calculate DMD when there is limited *in vivo* animal feeding trial data available.

Water Soluble Carbohydrates (WSC) – WSC is a measure of the total sugars (glucose, fructose, sucrose) present in the feed. These sugars are the primary source of energy for rumen bacteria as well as the animal. WSC is expressed as a percentage of dry matter.

Ash – Ash is the proportion of the feed that contains the inorganic fraction (minerals) that is not utilised by the animal and is expressed as a percentage of dry matter.

Organic Matter (OM) – Organic matter is everything present in the feed except the ash component and is expressed as a percentage of dry matter.

Fat – Fat is a measure of the lipid content of the feed and includes waxes, pigments, oils and other fat soluble substances and is expressed as a percentage of dry matter. A livestock diet comprised of a high fat content can cause issues with correct rumen function.