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Understanding D value and how to get the most out of your forage

Understanding the energy values of food-stuffs can help farmers ensure they are getting the most out of their forage. A sound knowledge of Dry Matter (DM), Metabolic Energy (ME) and Digestibility (D-value) is invaluable when planning for optimal production from livestock while keeping costs down. D-value, DM and ME all correlate with each other and finding the right balance between them is important when choosing a forage-crop to meet the demands of various forms of production.

Dry Matter (DM): The content of forage left after water content has been removed.

Dry matter contains fibres, proteins, ash, water soluble carbohydrates and lipids so the lower the dry matter, a higher amount of fresh weight forage will be required to achieve optimum nutrient intake by livestock.

Metabolic Energy (ME): The amount of energy an animal is provided with from the dry matter within the forage, measured in megajoules of energy per kilogram of forage dry matter (MJ/kg DM).

Feed that is low in energy cannot be grazed at a rate to satisfy the energy demands of moderate to fast growth, late pregnancy or lactation.

Digestibility (D-value): D value is the measure of digestibility of the proportion of the forage that can be digested by livestock and is made up of crude protein, carbohydrates and lipids (oils). It is represented as a percentage, so for example if a variety of ryegrass is given a value of 73 it means that 73% of it can potentially be digested by livestock. D-value is linked with ME because any feed has to be digestible in order for energy to be available.

Extensive research has shown that ruminant performance increases with forages containing higher amounts of ME and D-value. In the UK, the National Institute of Agricultural Botany (NIAB) have conducted their own research and found that a single point increase in D-value equates to 0.26 litres of milk per dairy cow per day, 40g/day extra beef liveweight gain and 20g/day of extra lamb liveweight gain.

Date Posted: 16th September 2019