

# Energy Estimates

Energy values for feeds are calculated from [Acid Detergent Fibre](#) (ADF) concentrations. Equations vary from lab to lab, so it is important to determine whether differences in reported energy values between labs is due to different ADF values or different equations or both. Typical equations used to calculate Net Energy for Lactation ( $NE_l$ ) are as follows:

- for forages which are greater than 75% legume:  
 $NE_l \text{ (Mcal/kg)} = 2.302 - 0.0262 \times \text{ADF } \%$
- for forages which are a mixture of grasses and forages, with neither making up greater than 75% of the total:  
 $NE_l \text{ (Mcal/kg)} = 2.398 - 0.028 \times \text{ADF } \%$
- for forages which are greater than 75% grass:  
 $NE_l \text{ (Mcal/kg)} = 2.392 - 0.0273 \times \text{ADF } \%$
- for small grain (eg barley) silages and greenfeeds:  
 $NE_l \text{ (Mcal/kg)} = 1.75 - 0.0076 \times \text{ADF } \%$
- for corn silage:  
 $NE_l \text{ (Mcal/kg)} = 2.302 - 0.0273 \times \text{ADF } \%$

The following equations can be used to convert between energy fractions defined by [energy partitioning](#):

$$\text{Total Digestible Nutrients (TDN) } \% = [(NE_l \text{ (Mcal/kg)} + 0.12) / 0.0245]$$

$$\text{DE (Mcal/kg)} = \text{TDN } \% \times 0.04409$$

$$\text{Metabolizable Energy (ME: Mcal/kg)} = \text{DE (Mcal/kg)} \times 0.82$$