

# MEASURING FEED VALUE

Emma Egan, RM Consulting Group

## TAKING OUT THE GUESSWORK

Is the pasture in your paddock meeting your animal's requirements? and is that lucerne hay you just bought in any better than the grass hay you cut last year?, it all comes down to the management adage 'you can't manage what you can't measure'.

Feed testing provides you with an objective assessment of your feedbase's quality. This data can be used to determine if it is meeting your animal's requirements and providing the best value.

Feed values can vary significantly; no matter how green it looks and sweet it smells, even within the same season feeds can range dramatically in protein, energy and digestibility values.

An example is oaten hay, which can vary from 8.8MJ to 15.1MJ of metabolisable energy, a difference between the significant loss and gain of liveweight in your weaners.

## CRUNCH THE NUMBERS

When purchasing feeds, feed testing can provide a realistic basis for pricing, allowing you to compare feeds on objective quality measurements. Feeds can be compared on a cost per unit of dry matter, energy, or protein, what you choose to compare feeds on will depend on the limiting factor in your enterprise. For example, in a southern winter mob of weaners, this may be energy. It is also important that you consider the cost of freight, especially when carting high moisture feeds such as silage.

You can compare feeds as follows,

### Dry Matter

Cost/kg DM (cents) =  $\frac{\text{cost/tonne (\$)} \times 10}{\text{DM\%}}$

### Energy

Cost/kg (cents/MJ ME) =  $\frac{\text{cost/kg DM}}{\text{MJ/kg feed}}$

### Protein

Cost/kg (dollars/CP) =  $\frac{\text{cost/kg DM}}{\text{CP} \times 100}$

Let's compare the cost-effectiveness of two feeds,

### Grass Hay

Cost per tonne = \$300  
DM = 90%  
ME = 12MJ/kg DM  
CP = 14%

**Step 1.** Cost per kg of dry matter (DM)  
 $(\$300 \times 10) / 90 = 33.3\text{c/kg DM}$

**Step 2.** Cost of energy (MJ ME) per kg DM  
 $33.3\text{c/kg DM} / 12 = 2.77\text{c/MJ}$

**Step 3.** Cost of crude protein (CP) per kg of DM  
 $33.3\text{c/kg DM} / 14 = \$2.37/\text{kg CP}$

### Lucerne Hay

Cost per tonne \$450  
DM = 90%  
ME = 13MJ/kg DM  
CP = 16%

**Step 1.** Cost per kg of dry matter (DM)  
 $(\$450 \times 10) / 90 = 50\text{c/kg DM}$

**Step 2.** Cost of energy (MJ ME) per kg DM  
 $50\text{c/kg DM} / 13 = 3.85\text{c/MJ}$

**Step 3.** Cost of crude protein (CP) per kg of DM  
 $50\text{c/kg DM} / 16 = \$3.13/\text{kg CP}$

From this example above, we can see that the lucerne hay is more expensive on both an energy and crude protein basis in comparison to the grass hay. This said, care must be taken when choosing the cheapest source of protein and energy as your stock may not be able to physically eat enough to get what they need.

## EXPENSIVE LOLLIPOPS

We can calculate the cost of protein for blocks and legume grain as follows,

### Protein Lick Block

Cost per 40kg block = \$70

CP = 60%

Cost per kg =  $\$70 / 40\text{kg} = 1.75\text{c/kg}$

Protein cost =  $1.75\text{c/kg} / 60 \times 100 = \$2.92\text{kg CP}$

### Faba Beans

Cost per tonne = \$446

DM = 90%

CP = 26%

Cost per kg DM =  $\$446 \times 10 / 90 = 49.5\text{c/kg DM}$

Protein cost =  $49.5\text{c/kg} / 26 \times 100 = \$1.90\text{kg CP}$

This example shows that high protein faba beans are more cost effective than the traditional urea lick block. In addition to this protein they will also supply energy.

At the end of the day, what you feed will depend on your animal's requirements, equipment, infrastructure, labour resources and feed availability.

### TAKE A GOOD LOOK

When comparing feed options, cost per unit is an important factor, but overall nutrient composition, feed availability and feeding practicalities should all be considered before purchase.

## COMPARE YOUR OPTIONS

Use the table below to calculate the cost effectiveness of your feed options this season.

	<i>Lucerne</i>			
\$ per tonne (A)	\$450			
Dry Matter % (B)	90			
Energy (MJ ME) (C)	13			
Crude Protein (D)	16			
Cost c/kg DM ( $E = A \times 10 / B$ )	50c/kg DM			
Cost c/kg Energy ( $F = E / C$ )	3.85c/MJ			
Cost \$/kg Crude Protein ( $G = E / D$ )	\$3.13/kg CP			