

ARE YOUR RATIONS THE CORRECT DRY MATTER?

British Dairying, June 2006

I receive many phone calls and E Mails from dairy farmers asking me to check their rations. It is usually due to some problem with the herd performance and they would like a second opinion. "I have the printout in front of me and everything balances" is a common remark. And sure enough the energy, protein, starch & sugars and fibre are at an acceptable level. Even the bypass protein and oil levels can hit the target. But the thing is - the cow needs to eat enough of the ration, and if she doesn't then everything is in short supply.

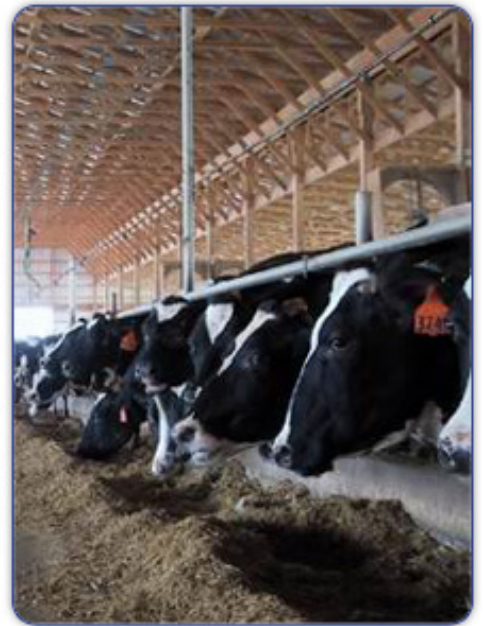
This is where the dry matter of the diet is absolutely critical. And yet I rarely see it referred to by feed advisors.

Do yourself a favour (and more importantly your cows) and have a look at your latest printed plan for your early lactation cows. What is the dry matter of your diet? If it is less than 45%, it is probably too wet. Conversely, if it is higher than 55% it is probably too dry. A bit like eating cornflakes with no milk! Both scenarios reduce intakes.

It is far more common for diets to be too wet. The cow must eat more fresh weight of a wetter diet and it is likely to be more acid if the forages are wetter.

Below are some sample rations for a 40-litre cow with the dry matter calculated.

To calculate the dry matter of the diet, simply divide the total Kgs of dry matter by the total Kgs of fresh weight.



Diet 1

Feed	Kgs Fresh weight	Dry matter %	Kgs of dry matter
Maize silage	23	28	6.44
Grass silage	23	25	5.75
Brewers grains	8	24	1.92
Concentrates	12	87.5	10.5
Total	66	37	24.61

Diet 2

Feed	Kgs Fresh weight	Dry matter %	Kgs of dry matter
Maize silage	20	35	7
Grass silage	9	30	2.7
Whole crop	5	44	2.2
Brewers grains	8	24	1.92
Concentrates	12	87.5	10.5
Total	54	45	24.32

Both diets provide the same energy, protein etc. We also have the same level of concentrates. But the drier forages means that the cow will only have to eat 54kgs fresh weight instead of 66kgs.

I cannot emphasise this point enough. Low dry matter diets reduce intakes. Reduced intakes in early lactation have an adverse effect on health and fertility. So if your cows are not bulling, and/or your conception rates are poor when serving at 42 days post calving - then it is likely that energy deficiency through poor dry matter intakes are a major cause. So if you have a wet diet and a salesman calls and tells you his Supersonic supplement with powdered rhino horn will sort everything - it won't. O.K., I made the bit up about the rhino horn but I am sure you get the picture.

I will concede that certain yeast types improve intakes in particular situations. They vary enormously, to the point that some products are 40 times stronger than others at the same cost.

A word of warning, don't take the computer figures at face value. If the forages are on the wet side, it can be made to look better on paper by adding straw and extra concentrates. However, in practice it still feels sad and heavy. You have to go and dig into the feed trough to feel how acceptable it is. Also, if 8 out of the 12kgs of concentrates from Diet 2 are fed in the parlour, then the dry matter of the outside mix drops to 37% from 45%. In this case I would drop the brewers grains and feed an extra 2kgs of concentrates. The mix dry matter then rises to 43%.

So how does grazed grass affect the dry matter of the diet? The short answer is it's a disaster! Ten samples taken in May 2006 averaged 15.3% dry matter with the highest at 18.9% and the lowest at 9.6%. Now if you made silage at this dry matter, would you be happy with it?

Let's take the driest sample to prepare a ration for a 40-litre cow, with 8kgs of concentrates in the parlour and 4kgs outside. Diet 3 shows the results below:

Diet 3.

Feed	Kgs Fresh weight	Dry matter %
Grazed grass	70	18.9
Concentrates	12	87.5
Total	82	29

We can only reach a miserable 29% dry matter even with the driest grass sample and need the cow to eat 82kgs fresh weight.

Just think about your 40 litre cows on only 8kgs of concentrates at grass. They need to eat 90kgs of grass. And if the grass is wetter, they need to eat even more.

It's worse if the cows actually do produce 40 litres on this diet. The high protein from grass drives the milk yield and results in weight loss with subsequent fertility issues.

This brings me round to what feeds are suitable for achieving decent dry matter diets.

Lots of grazed grass is out for a start.

I normally like maize silage as it encourages intakes, but I am not happy with some of these "stay green" varieties. On the plus side the whole plant is more digestible and clamps well with a saving on additive. However, I prefer drier maize than 28% and would rather pay £1/tonne for an additive and have higher intakes. Is it a coincidence we have had lower butterfats with wetter maize?

Grass silage over 26% please. No more than 30-35% tops. A fast wilt if possible.

My views on some other feeds are in table 1. I am not saying some should never be used; just limit them if the ration is too wet.

Table 1 - Suitable feeds

Feed	Comments
Fermented Whole Crop	At around 44% dry matter, this really helps the diet. Any negatives about lower energy values are more than compensated by increased intakes.
Brewers grains	Too wet, and at grass too high in protein
Pressed Pulp	Too wet
Trafford Gold	Decent alternative if you cannot store concentrates
Fruit & Vegetable waste	Too wet, although I believe fodder beet and potatoes can improve intakes if fed at moderate levels if the diet is not very wet.

Carrots	One of the worst
Dry forages – hay, straw etc.	Very good but needs to be chopped and mixed in
Rumilaze (Lucerne bales)	Very good
NIS Pellets (Nutritionally Improved Straw)	Very good
Concentrates	Very good

To add further weight to my argument, look at the results of the Dairy Herd Health and Productivity Service (DHHPS). Quite often, cows calved 10-20 days will be energy deficient. Cows calved 80 days on the same diet will be energy stable, so it has to be intakes in early lactation that is the problem. Ensuring the diet is the correct dry matter will go a long way to rectifying this. Unfortunately, from my experience, it is not a common parameter that many feed advisors use.

I will happily check your ration dry matter free of charge. Kindly contact me on 07966 987691 or Robert@cowfeed.freeserve.co.uk