



5 is the magic number

A few weeks ago a number of us (and a number of you) attended a very interesting talk by DairyNZ principal scientist John Roche.

The talk was titled **“Feeding cows before calving - does it need to be complicated?”** John talked about a lot of things (he usually does) but once you had ploughed your way through a million slides and graphs it pretty much all came down to a common theme:

5 is the magic number on dairy farms.

That is, adult cows must achieve body condition score (BCS) of 5.0 at calving with heifers and second calvers achieving BCS of 5.5. This should be non-negotiable.

In John’s words ‘if you have your cows at 5 and heifers & 2nd calvers at 5.5 at calving then a lot of your problems further down the track (as well as metabolic ones in spring) will go away’.

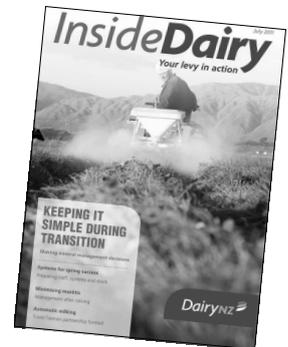
He got a little bit controversial when he told us that although cows require the equivalent of approximately 20% of their liveweight as metabolisable energy intake every day pre-calving to maintain BCS, there is increasing evidence that cows are healthier at calving if they are slightly feed restricted in the month pre-calving.

Now, before you go “hooray, John said I can starve my cows” let me expand. The word is ‘slightly’ and it only applies to cows that are **above 5.0** in the 3-4 weeks before calving. And be honest, how many herds around here average BCS 5 at calving? So, if your cows are only 4.5 in that last month they have probably already been restricted or were dried off too thin or too late to get back to 5 by calving. They need to be fully fed. His argument was that fatter cows (5.5 and above) tend to get more metabolic problems such as milk fever, ketosis, etc, than slightly thinner ones and by slightly restricting those cows prior to calving they become “metabolically fit”. He also stressed the importance of magnesium supplementation and laboured the fact that magnesium in the water around calving is simply not enough. You must also provide causmag via pasture dusting or added to supplementary feeds. He was also a huge fan of feeding limeflour to the colostrum mob.

My advice would be to read the article, which is available from www.dairynz.co.nz/publications in the May 2011 Technical series. There are further articles on body condition score of a more basic nature in the March 2011 Inside Dairy publication.

Once again the magic number seems to always come back to 5. Get your cows there and life will get a lot simpler.

While I’m mentioning InsideDairy magazine have a good read of the June and July editions. After reading them I’m wondering if I should even bother sending this newsletter because they’ve got just about everything you could possibly need in them relating to spring topics. Great stuff, take a look.



Maggie, a blonde city girl, marries a dairy farmer. One morning, on his way out to check on the cows, farmer John says to Maggie, ‘The insemination man is coming over to impregnate one of our cows today. I drove a nail into the 2 by 4 just above the cow’s stall in the barn. You show him where the cow is when he gets here, OK?’ So then the farmer leaves for the paddocks.

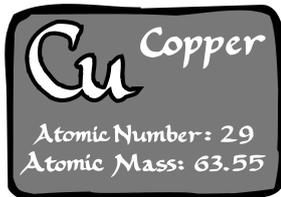
After a while, the artificial insemination man arrives and knocks on the front door. Maggie takes him down to the barn. They walk along the row of cows and when she sees the nail, she tells him, ‘this is the one...right here.’

Terribly impressed by what he seemed to think just might be another ditz blonde, the man asks, ‘Tell me lady, how did you know this is the cow to be bred?’

That’s simple... By the nail over its stall’, Maggie explains very confidently.

Then the man asks, ‘what’s the nail for?’

*She turns and walks away, and with complete confidence, says.....
‘I guess it’s to hang your trousers on.’*

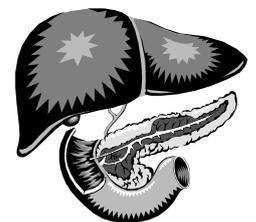


Chronic copper poisoning in dairy cows

Dairy cows' copper requirements change with their milk production and state of pregnancy. Requirements are highest in late pregnancy/early lactation and lowest in mid pregnancy. When their diet contains more copper than they need, cows store the excess in their livers and when their diet contains less than they need they draw down these stores to make up the deficit. Historically dairy cow diets *on the Taranaki ring plain* have been marginal or deficient in copper and, as a result, many dairy farmers supplement copper by feeding mineral mixes to their milking cows. This was a good idea with traditional Taranaki dairy cow diet of grass, grass, more grass, grass silage and hay but these days more cows are being fed supplementary feeds. Often this is Palm Kernel Expeller meal (PKE) and PKE is a good source of copper. (It is a good source of selenium and zinc too.) Some cows are being fed more copper than they need and storing the excess in their livers. Gradually over several years their liver copper stores have risen. This year we saw some very high liver copper levels in cull cows tested at the works. While it is good to have some copper reserves stored in the liver, too much is not good at all. When liver copper gets too high it becomes toxic, cows collapse and die and there is nothing we can do to save them. So far I have heard of two herds affected in other parts of Taranaki and I really don't want to see any here.

There is also some disturbing evidence about **copper and facial eczema**. It looks as though high levels of copper in the liver may increase the damage done by sporodesmin and make facial eczema worse. When I heard this I immediately thought of three herds I saw last autumn with inexplicably bad FE. Zinc treatment was spot on, spore counts were not especially high and yet they had lots of badly affected cows. All three herds feed PKE but unfortunately none of them tested their cull cow livers so I don't have any firm evidence. Some zinc mixes for facial eczema prevention contain copper to compensate for the copper which can be depleted by very high zinc feeding. The FE season is the time of year when the copper needs of spring calving herds are lowest anyway so it is better to feed zinc alone for FE protection and top up the copper (if necessary) after the FE season is over.

How do you know if liver copper levels in your cows are getting dangerously high? In a perfect world you would all have done liver tests on your cull cows and we would know but very few of you have. We can take liver biopsies from live cows and you should discuss this with Polly or Teresa if you want to go that way.



Unfortunately blood copper tests tell us nothing about liver copper stores. What I suspect most of you will do is to take a bit of a guess and with copper it's not that simple.

Reviewing your supplements over the past few years gives a fair idea of how much copper the cows have eaten but how much of it they have absorbed depends on how much 'copper antagonists' they have eaten with it. Iron, sulphur and molybdenum are copper antagonists, they bind to copper in the gut making it less absorbed. Taranaki soils tend to be high in Fe, S and Mo so how much copper your cows have absorbed depends to some extent on how much dirt they have eaten! Ngaere swamp type soils have such high levels of copper antagonists they cause copper deficiency on a traditional grass diet.

My guess is that if you are not on Ngaere swamp type soils and you fed 250kg PKE/cow last year and intend to feed PKE again this year, you probably don't need to supplement copper at all.

If you fed 500kg PKE/cow last season and intend to feed PKE again this year you should not feed any extra copper.

If you want to supplement other minerals you should use a copper free mineral mix.

Please don't think from all this that I am against feeding PKE. I'm not, I think it is great stuff. Every feed has its drawbacks, if I were writing about maize or barley or brassicas I'd be warning about their fishhooks too. There's no such thing as a perfect feed. The trick is to be aware of the disadvantages and farm cleverly around them.

*Worry is like a rocking horse —
it keeps you going but gets you nowhere*