

Cow Condition

It is a well known fact that cow condition has important implications for production and reproduction in dairy cows. The goal to have cows calving in condition score 5 or better is aimed at:

- Ensuring the cow has adequate energy reserves to cope with adverse weather conditions during the winter and early lactation.
- Helping the cow bridge the gap between dry matter/energy intakes and genetically driven milk outputs in early lactation.
- Buffering changes in feed quality associated with high protein, low sugar, spring pasture.
- Efficiency of feed conversion (i.e. milk solids produced per kg of DM consumed) tends to be better in cows in better condition.
- Cows in good body condition begin cycling quicker post calving meaning a better chance of getting in calf. Reproductive hormones are made from fats, so a cow with no body fat is unlikely to make many hormones – resulting in an anoestrus cow.

And now the welfare code sets a minimum standard for body condition in dairy cows.

In other words cow condition is important!

What is condition? Body condition is essentially a measure of the muscle and fat between the bones and skin, essentially over the pelvis, spine, ribs and shoulders of the cow. Rumen fill and coat condition should not be confused when condition scoring cows. In New Zealand we tend to use a scale of 1 to 10 for measuring condition. The target for calving is C.S. between 5 and 6.5. Over this they are too fat.

How much weight is there in a Condition score?

For a NZ Jersey one CS is about 25 kg of liveweight

For a NZ Friesian one CS is about 35 kg

For a Holstein Friesian one CS is about 40 kg.

Condition and Energy.

Generally, condition gain is referring to gaining some fat cover, but in very thin cows this may also include muscle tissue as well. The goal should be to dry the cows off in more or less their target calving condition, as this is more efficient and more economic use of feed.

Text books tell us that to make one kilogram of fat requires 34-38 MJME. This is energy required over and above maintenance requirements. Unfortunately the conversion of feed to energy is not very efficient, with more energy required than estimated due to losses from heat and metabolic processes. Feed conversion efficiency is better in cows already in reasonable condition (the effect seems to be at about CS 4 or more), and in cows lactating as they are functioning at a more efficient metabolic level. In general then, 1kg of fat will actually require **40-50 MJME**. Compare this to the energy released to the cow if she mobilises that fat for milk

production, around 24-28 MJME. Twice as much energy is required to regain what is lost!

Is all body condition equal?

When a cow is in milk she is “fit”, and metabolically primed to gain condition in a nice even way, with a proper mix of fat and protein. Condition gained while dry is more likely to be just fat, and not necessarily in the best places.

What to consider when feeding for condition gain.

Its simple. If you feed a cow more energy than she needs for milk production, maintenance and pregnancy, she will store the extra energy as body condition. It is easy to promote condition gain in dry cows using starch, sugars and fat, so called “chocolate cake” feeds e.g. maize silage and grains. However, this results in “couch potatoes”, with fat that goes on easily and comes off just as quickly, setting the cow up for metabolic problems next season.

Condition gain on an all grass diet can aslo be tricky, and in some situations cows can actually lose weight. Fast growing pasture is like lettuce, and its hard to get fat eating lettuce! Condition gain at this time of year is complicated by the fact that fast growing Autumn pasture is often low in dry matter. Will your cows be able fit in an extra 30-35 kgs of wet material each day with reduced rumen capacity and a calf growing inside?

Lush good quality grass has a lot of degradable protein. If there is not enough starch or sugar in the diet concurrently for the rumen bugs, then a lot of that protein will be lost as ammonia, which the cow uses energy and body protein to get rid of! The net result may be no condition gain, and sometimes even condition loss. Finally, feeding extra grass at this time of year may cut into your total cover at dry off, creating feed supply issues through the winter.

Feeding strategies for condition gain.

The most important point is to make sure that the cow has sufficient dry matter intakes, whether lactating or dry to provide sufficient energy to meet requirements for condition gain.

Consider replacing a portion of the grass with some grass silage or, if you have a long enough round, more mature grass. This will change the dynamics of rumen function and improve feed conversion efficiency. A similar result should be seen with some other fibre source such as straw or hay. This option may not be best if large condition gains are required as condition gain may limited by the high NDF levels of these feeds reducing the total DMI of the cows.

Starchy feeds are the best option for encouraging condition gain as they are like “chocolate cake” to a cow. Maize silage and meals/grains are the most common starch sources in our systems. Increasing these types of feeds may also have the effect of increasing milk production instead of condition gain, as high genetic merit

cows will make milk when feed conversion efficiency and rumen function improves. If this is the case then you may need to limit the amount of protein in the diet by reducing pasture intakes. Also be aware that there is a limit to how much maize should be fed in one feed to cows. For freisians it is 4-6 kgDM/cow and In jersey's 3-4 kgDM/cow depending on how well set up they are. If you are feeding at higher rates it is likely that rumen function will be compromised and feed conversion efficiency decreased. The result is more feed required to achieve the same weight gains. There is also the risk of acidosis and other associated problems. If you want to increase the amount being fed, simply increase the number of feeds per day.

Another option for condition gains is palm kernel. It contains a high oil content and can be introduced quickly without the risk of acidosis. If you have cows in low body condition and no maize or feed supply is limited, then you should consider using PKE.

Failure to achieve condition score gains in late lactation generally comes down to not enough feed being fed, not choosing the best feeds, and not introducing feeds properly.