



## Feeding for Genetic Potential

Peak milk is defined as a cow's potential highest litres/day. Biologically, it occurs around 80 to 100 days in milk. I stress biologically, as all too often highest litres per day occurs when feed is most available, traditionally in October. This is a feed related peak, and if not around 80 to 100 days in milk, only tells us we underfed at that time.

Too often we are complacent enough to simply discharge this as unimportant, or don't really recognise what we have lost. Peak milk at 100 days determines the whole of lactation performance. My favourite expression is 'lactation momentum', because that's exactly what peak milk constitutes – getting that 'fly-wheel' of production spinning as fast as possible at 100 days when the cow is most well disposed biologically, or hormonally, to eat to maximum capacity and convert feed to milk to her maximum capacity. From this point on it can only decrease.

If our cow were to calve in April/May, she should reach peak milk production July/August, usually when paddock feed is at its lowest during the growing season. Planning to fill this 'feed-hole' then becomes paramount. There are some farms that have grown some extra acreage of sorghum this summer and ensiled it to provide additional feed reserves after last year's experience. They will have that extra feed to fill the late winter 'feed-hole' and then achieve their peak milk.

If you were to draw a graph of 'genetic potential for lactation' with a peak at 100 days, dropping one litre per month from then to dry-off, then superimpose your actual production graph over it with October's 'peak' matching the projected 'potential' for October, you will see just how much milk production you have lost waiting for nature to supply your feed instead of you managing it.

To really grasp this 'peak milk potential' we need to understand the physiology of lactation. Just prior to calving the hormonal status of the cow changes very dramatically, as we all know. Amongst these changes is the one that drives milk production for the new born calf. This is what trips off milk production, but from then on, that hormonal drive must be met with sufficient energy and protein to fully quench this need. Any under-supply of these nutrients in turn dampens this natural hormonal drive. The drive to produce milk drives hunger to supply energy, and if not met, reduces litres, which in turn reduces the drive of hunger. A rapid downward spiral results with obvious loss of lactation potential – loss of lactation momentum.

That's the science of fresh cows, now we need to look at the farm realities of optimising feed intake to maximise our cow's genetic potential for milk production. There are three

major issues here: availability, palatability and rumen health. This is not a 'two out of three ain't bad' scenario. Mess-up one of these and you can forget the other two, they are all essential to succeed in milk production.

Feed availability is a planning issue, not an 'if we have a mild winter' management technique. We will be short of paddock feed in late winter; it's been happening for the last forty years that I've been involved in dairying – 'hoping' is not a risk management tool. For those with maize silage or, sorghum silage to a lesser degree, you could not find a better feed at this time of year to utilize to some degree high pasture nitrogen which causes health/reproduction/production problems in late winter. I will discuss sorghum under the subject of "feed budgeting" in my August article.

Palatability is an area that requires a lot more effort than most of us exercise. We all know cows 'rip' into certain feeds – why, because they taste good! Ryegrass at a lush three leaf stage, silage with strong lactic acid fermentation, quality grain delivered fresh into a clean bale. Hay generally, and especially southern Victorian home-made hay runs a distant second to these unless fibre is required, even then there are better alternatives (oaten hay) for this purpose, and also for palatability.

The other feed I've neglected to mention, and must come under palatability, is water – so frequently forgotten or assumed. There is a very direct correlation between water intake and feed intake. Reduce water and you will proportionately reduce feed intake. Over summer, delivery systems are the greatest and all too common restriction to water intake. Dirty troughs covered in 'plant life' are a common restriction the rest of the year. Fresh clean water encourages feed intake and value-adding it to milk.

Under the subject of availability also comes feed availability throughout the day, and to all cows in the herd. How we feed cows impacts as much as what we feed cows. Often I see in a herd, mature cows looking magnificent, and heifers looking horrible. It's simply a feed availability issue – usually not enough available to enable heifers to get their fill, and a common cause of early culling for low performance both in production and reproduction.

This leads into rumen health, for all too often rumen health and feed conversion efficiency are seriously compromised by feeding practices. Maintaining a good 'rumen mat' of fibre floating on the liquid rumen microflora to slow down passage of feed through the digestive tract, and encourage fibre digesting bacteria numbers, is rule number 1 – fibre first. Rule number 2: cows were created to graze – small feeds often. A steady stream of feed throughout the day minimises rumen pH fluctuations and encourages strong numbers of digesting bacteria. Sub-clinical acidosis is the greatest embezzler of farm profit. By choice, a cow will eat between 9 and 14 meals a day. A balance of energy, protein and fibre comes after this. These are all management practices. The cow's future, and ours, is largely in our own hands.