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Silage

(Quality & Yield)

I have subtitled this article **QUALITY & YIELD** very deliberately. The traditional thinking is quality **OR** yield, with yield most often being the criteria, commonly not realising just how much quality we do sacrifice and profit we lose.

My definition of quality is as I wrote last month, the capacity of silage to be converted to milk or live weight gain. There can be no other criteria to define quality for this is the sole use of silage. Expressed numerically, the quality of pasture silage can be reduced simply to NDF (Neutral Detergent Fibre as recorded in a feed test.)

High quality silage has a goal NDF of 45%. To achieve this it needs to be cut within days of being perfect grazing pasture. Energy and crude protein, and most importantly digestibility, are directly related to NDF. As NDF increases with plant maturity, energy and crude protein decrease, but more importantly, lignin (indigestible fibre) increases reducing digestibility very rapidly. Inoculating silage plays a major role in achieving this quality of silage (see Sept article) and in silage intake due to superior palatability.

Let me give you a comparison. Two identical rations of adlib silage and 5 kgs grain mix of 80% wheat and 20% canola meal. Ration 1) contains silage at an NDF of 45%. At NDF 45% this silage would have an ME (Metabolisable Energy) of about 11.5, a crude protein of 18%. It would enable a milk production of 25.34 litres of milk in a 580 kg live weight Holstein assuming she had been fully fed throughout early lactation and achieved her peak milk potential. I have clients achieving this in summer. Based on a milk price of 35c/litre (February) this ration would produce a milk-over-feed-cost (MOFC) of $4.21/cow/day.

Ration 2) contains silage at an NDF of 60%, ME (energy) of 8.5 and crude protein of 14% or less. This ration would enable a milk production of 12.53 litres in the same cow. Again, based on 35c/litre, this ration would produce a MOFC of $0.64/cow/day.
That's a difference of $3.57/cow/day, and this is your profit! Times this figure over say 250 cows and we are talking nearly $900/day difference in profit on the herd simply due to our silage quality. Don't laugh; ration 2) is very common. Dry matter intake is the major influence here being 4 kgs higher with low NDF silage, apart from the energy/protein and digestibility issues.

The sceptics are up in arms; “if we cut silage at that stage we wouldn’t have enough to last till February”. You’ve forgotten my title – **Quality & Yield** not **OR Yield!**

In my July article I spoke of a need to do all possible to provoke pasture growth rates due to the late start to the season. This should be our criterion whether the season is late or early. The key to this is small amounts of complete fertilizer often as opposed to large applications a couple of times a year. I am also very convinced we worry far too much about rainfall and not enough about fertilizers. The genetics of our cows for milk production are far beyond most feeding strategies. I am of the opinion the same scenario exists in the case of our pasture’s genetics; its capacity to grow large volumes of high quality pasture is limited by our feeding of pasture plants. On my son’s farms our goal is to follow cows in rotation applying a complete fertilizer/urea mix. Small amounts very frequently, and we are convinced of the response. No one argues this regime for urea alone so why not provide all nutrients to pasture plants on this basis.

Back to Quality & Yield. Pasture growth momentum is the first step. From here the theory is to not shut up any paddocks in the traditional sense, but rather continue a 14 to 18 day rotation, when pasture looks similar in amount in the next 2 to 3 paddocks, cut paddocks 4 and 5. This year there are a number of my clients cutting in mid September under this regime. As the season progresses the rate of dropping paddocks out of rotation and cutting increases as growth rates accelerate. Paddocks will still be green after cutting, if they look white you have cut too late and regrowth will be far slower. Increased regrowth is vital to total yield/Ha/year. Apply 120kgs of urea per Ha as soon as bales are off and that paddock will be back in the grazing rotation in about 18 days based on the above for fertility.

It then becomes quite possible to cut the whole farm for very high quality silage **and** graze cows on equally high quality pasture with a corresponding high milk production now and over summer.

Certainly this system takes some management, but the results are astounding. We are only just tapping the real potential of our farms. I have mentioned numerous times in previous articles, the average dry matter pasture harvested for Western Victoria is about 4 tonnes/Ha. More and more farmers are achieving 8+ tonnes of dry matter/Ha. Not only are they harvesting more, but also as yield increases the cost per tonne decreases due to the capital cost of the land being the major cost of the grass produced. More grass at a lower cost per tonne.

We need to view our farming business as two separate enterprises; firstly, our land as a cropping enterprise, optimising yield/Ha. And secondly our cows as machines for value adding grass by converting it to milk through balanced nutrition. By separating these two, at least mentally, we can see greater opportunity in each enterprise for major profit growth by knowing which one is holding us back.