



Do you harvest silage too late?

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If a paddock looks yellow after the forage has been ensiled, your profitability may be substantially reduced over the next year. Why? The paddock was cut too late and most likely the pasture will have been too long. It will be slower to recover, produce less regrowth and will be less dense for several months or allow weeds to fill the bare patches. To add salt to this wound, silage will be lower in nutritive value resulting in lower milk production or only suitable for late lactation or dry cows..

Many paddocks are cut for silage by farmers several weeks later than they should be. Many farmers chase bulk instead of quality and the above is the results. Yes, the yield per cut will be lower but either more area can be cut to help offset this and will maintain spring pasture quality or more importantly, less silage needs to be fed to produce a given production level due to its higher quality. Over all yield is not generally significantly different when taking into account regrowth

Let's look at some of the pros and cons behind this thinking.

If you want high quality pasture silage the pasture ideally, should be vegetative, at the stage of grazing and before canopy closure (Figure 1) and with very little seed head showing, if at all. This silage will test near 11 megajoules of metabolisable energy per kilogram of dry matter (MJ ME/kg DM or ME) and over 15 per cent crude protein (% CP).

If wilted and harvested quickly and sealed airtight very soon after harvest is completed, the final product will test just slightly below that of the parent pasture. When fed out, this silage will result in animal production just below that of the parent material. Many farmers have now experienced this themselves since successfully making early cut high quality silage. To make high quality pasture silage, the forage has to be mown early in the season, about 4 – 6 weeks before hay would normally be made.

Stack silage needs to be wilted to 30 – 35% dry matter (DM) and baled silage 40 – 50% DM and harvested within 24 – 48 hours of mowing to achieve best possible quality. Precision chopped forage and large square bales may be about 10% DM higher respectively. Using tedders (Figure 2) and/or mower-conditioners (leaving wide swathes) are essential when ensiling early in the season when wilting conditions are not optimum but well worth the expense.

Aim for these targets and if the rain beats you, as it invariably will sometimes, with the aid of silage additives, you can often still salvage reasonable quality silage since you started with a high quality pasture. If the rain is heavy and falling over a few days, you may lose the silage but the silver lining here is that the paddock has been “topped” and will have the a lot of high quality, dense regrowth. If the mown material is thick, animals could be used to consume some of this to allow the sun through to generate pasture regrowth.

If the early cut at grazing stage can be achieved, the harvested paddock will look a similar colour to one being grazed. That is, green, or possibly only a slighter lighter green colour but not light green and definitely not yellow the result of cutting a heavy silage crop. These latter pastures would have been past canopy closure, probably with many seed heads in the sward and apart from the silage being much lower in nutritive value, regrowth will take much longer to regrow and will be thinner. So now you have a lot of silage under about 9.5 ME and less than 10 -12 % CP and much thinner, weaker pastures and a boon for weeds to fill in the bare gaps.

How are the economics looking now? Let's look at an example.

Table 1 shows the potential impact of increasing the ME and reducing losses at harvest and during storage of silage on the extra milk income in terms of a marginal response. The example used is a stack of 300 tonnes dry matter (t DM) DM silage, milk is valued at \$0.38/L, quality is improved from 9.5 to 10.5 ME, losses reduced from 25% to 15% (realistic figures) and the conversion of energy in silage to milk is 8 MJ ME/L milk. Eight ME is a conservative conversion rate to allow for some substitution and some energy being used for walking, condition gain, etc.

Table 1. Impact of improving quality and reducing losses on additional milk value

Loss range	Quality range MJ ME/kg DM	
	9.5	10.5
25%	\$0	\$10,688
15%	\$13,538	\$25,650

If the quality of the 300 t DM silage is improved by 1 MJ ME/kg DM, the increased value of milk production is about \$10,600 if losses were left at 25%. If the quality of the silage made was left at 9.5 ME but total harvesting and storage losses are reduced from 25% to 15%, income from milk is increased by over \$13,000. However, increasing ME and reducing losses will result in a gain of well over \$25,000! How much extra cost and effort is needed to achieve this? Possibly a new tedder paid for in the first year of savings?

Come spring and many farmers do not set aside paddocks for silage till too late. When they do "close" paddocks for silage, the cows may have been leaving higher residuals (6 – 8 cm) for many days to a week or so, which means the clumps will have been expanding in size and pastures will be lower in quality next rotation. Often farmers will then "shut" the next few ungrazed paddocks for silage and cut them another few weeks later. Many farmers also close the last few paddocks that were recently grazed, a better option, but don't forget these usually now contain larger clumps.

In both cases, imagine the cows being forced to eat all the feed in these two scenarios when the paddocks are due to be cut. By the time cutting occurs, the nutritive value of the silage will be substantially lower than "ready-to-graze" pasture. Yep, yield will be well up but so will be the cost per unit weight of silage ensiled and but nutritive value and regrowth will be much less equating to less profit.

Aim high (high quality) and if it rains before the forage is harvested you may still get your bulk (from being forced to cut other paddocks later which now probably contain more mature pastures), but at least some of the farm will have been kept in good dense growing state and potentially may have harvested milk-producing silage!



Figure 1. High quality pasture cut for silage



Figure 2. High quality pasture being tedded to hasten wilting

In early spring regularly monitor the height of the residuals and the size of the clumps. Even if you “think” they are increasing consider setting aside some paddocks for silage which are not due for grazing for one to two weeks. If the weather turns nasty and you need the feed, one or two of these paddocks can be reinserted into the rotation and will still be ideal grazing height. If not, cut these for silage when due to be grazed and reap the benefits of high quality silage and plenty of dense high quality regrowth.