

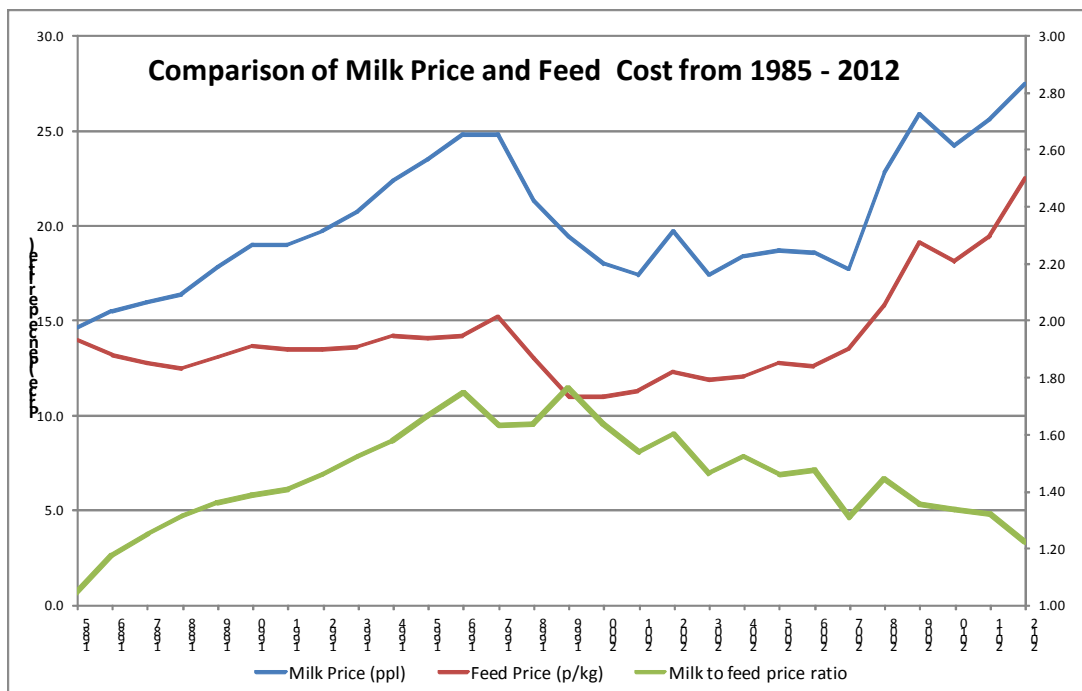
## BETTER SILAGE MAKING COULD MAKE AVERAGE DAIRY FARMER £13,000 EXTRA...AT LEAST!

**Promar International National Dairy Consultant Derek Gardner suggests that in many cases there is a real and cost-effective opportunity to address the decline in yields from forage which has been seen in the last few years.**

Milk produced from forage in the UK is declining, or put another way concentrate feed rates have increased without a sufficiently large response in milk yields. Whichever way you look at it feed costs per litre have risen.

Since milk quotas ceased to be an effective constraint on production, the UK has seen a steady increase in purchased feed use as farmers sought to increase yields per cow and total farm output, as shown in the UK Farm Business Review, over the last decade. For Promar Milkfinder customers the average feed rate increased from 0.32kg/l in 2002 to 0.37kg/l in 2010.

While this approach was justifiable when feed was comparatively cheap over the last 10-15 years, they are coming under close scrutiny as higher feed prices have closed the ratio markedly (see graph below).



The consequence is that many dairy farmers are now vulnerable to rising purchased feed prices. We have seen two significant spikes in these over the last three years and it is likely more will be seen in the future.

At the same time as feed use has increased so fertiliser use has declined, but with the current cost/price relationships it will make sense to focus once again on milk from forage. So the key question is what can be done to redress the balance and improve milk production from forage? Broadly the answer falls into two sections, can you grow more, and can you use what you grow better and waste less?

When I discuss these issues with farmers the area which causes the most surprise is the issue of wastage of grown crops. While most farmers are aware of many of the factors affecting forage productivity, fewer are aware of the size and cause of nutrient losses, and also how quickly and easily losses can be reduced.

Although farmers may not be aware of the extent of the possible losses caused by weed grasses, inadequate P, K, or lime, soil compaction, bare patches or poor quality swards in general, they do know that all these factors will depress total yield of forage dry matter.

Generally however, correcting these problems takes time. Reducing the losses during the silage making process can be achieved quite quickly and often at a low cost.

It is impossible to make grass silage without losing a proportion of the dry matter grown, so the aim is to reduce the losses. Table 1 shows the range in typical dry matter losses in making grass silage. The lower figure is what can be achieved with good making techniques; the upper figure is the consequence of poor silage making management. It is well worth taking steps to reduce all these areas of loss.

**Table 1 Typical range in silage dry matter losses**

	Typical % DM losses	Potential loss from original crop of 500tDM
Mechanical field losses	5-15%	25-75t
Effluent losses	0-8%	0-40t
Fermentation losses	5-20%	25-100t
Sealing losses	0-6%	0-30t
Wilting/respiration losses	0-12%	0-60t

Mechanical field losses include the crop that isn't picked up at all, the grass which is harvested but misses the trailer, and occurrences such as lain crops. Over handling the crop in the field will also increase leaf losses.

Respiration losses result from the crop being left lying in the field whilst still using oxygen. While a 24 hour wilt may lead to 3-5%DM losses, a 72 hour wilt can lose 6-12% of available dry matter. The message is to not over wilt as it will do more harm than good. In most cases a 24 hour wilt will be adequate.

Clearly these losses do not affect every crop to the same extent. Effluent losses, for example are not a problem with dry crops, but these crops are then more prone to silo losses.

In most cases it is possible to reduce the losses by careful planning and attention to detail. Field losses can often be reduced by taking the foot off the accelerator and taking more care with the precious crop, making sure it is mown at the correct height, that it is all picked up and that trailers are not overloaded.

Silo and fermentation losses can be cut by the use of an appropriate additive, by removing all remnants of last year's crop from the clamp before it is refilled, by sheeting the walls, filling and consolidating the clamp carefully and sheeting down thoroughly as soon as possible. A good lactic fermentation does not start until oxygen is excluded, up to that point you are only making compost.

Use an additive designed to establish a rapid lactic acid fermentation. Inoculants cost little per tonne but can make the difference between an average and top quality feed. A rapid fermentation

means less grass energy is used up, and so more is left for the cows' rumen, and will generally also improve intakes across your herd as a more palatable silage is produced.

Wastage also continues at feed out where clamp losses can range from 2.5% to 5% of dry matter so it pays to manage the face carefully to prevent heating. That means keeping the block cutter sharp, working rapidly across the feed face and not loosening up the face so increasing heating losses.

None of these points are rocket science but together can have a huge impact on available feed value and margins. Table 2 looks at the financial impact of different rates of loss on an average 150 cow herd growing 2750t of fresh grass, equivalent to 500t of dry matter. It considers the cost of replacing the forage dry matter lost with purchased concentrates.

**Table 2 Financial impact of different levels of DM loss for a 150 cow herd growing 500t silage DM**

	Good silage making	Average silage making	Poor silage making
Percent DM losses (%)	15	25	35
Tonnes DM lost from original 500tDM (t)	75	125	175
Cost to replace lost DM with purchased concentrate at £220/t freshweight (£250/tDM)	£18,750	£31,250	£43,750
Additional feed costs per cow (£)	£125	£208	£292

If you could cut the losses from say an average of 25% to 15% of grass DM lost, you will have 50tDM more for the winter. This is enough to feed 20 more cows for the entire winter at no extra cost, or alternatively will mean feeding more silage per cow and getting 700 litres more milk throughout a 200 day winter!

Not making that 10% jump in overall silage efficiency would cost an extra £12,500 to replace the lost silage DM. If the herd averages 7,000 litres sold per cow, this is equivalent to 1.2ppl in extra purchased feed costs. For every 1% reduction in silage DM losses you can reduce purchased feed costs by £1,250 for this herd.

Figures like these help to explain why feed costs have increased and why it is important to focus on maximising the amount of dry matter grown that is actually fed to the cows. It will be even more important this year when tight forage stocks over the winter mean that there will be less carry over come the spring, and a need for most to rebuild silage stocks this year.

Now is the time to start planning your 2011 silage season and a good objective will be to take all steps to reduce wastage and start increasing yield from your own forage.