



## Cut your losses; invest in better silage in 2013

**Last month I wrote about planning home-grown feed production for 2013, and the improvements in animal performance that are being achieved by many livestock farms around the country where effective steps were taken to preserve feed efficiently in 2012. Continuing this theme, I thought it would be a good idea to look at the financial implications of effective preservation. We need to look first at the value of DM loss during the ensiling process, and second at the cost of replacing lost nutrients with bought-in concentrate feeds in order to maintain production.**

Published figures show that on UK farms an average of 25% of the silage DM harvested is lost between cutting and feeding the finished silage (Derek Gardiner, Promar International 2011), with the best silage-makers still incurring losses of at least 15%. These losses occur throughout the ensiling process, in the field, during silo filling, in the fermentation and as a result of aerobic spoilage during the feed-out period. It is worth remembering that, with the exception of respiration losses in the field and during clamp filling and 'mechanical' losses caused by, for example, over-filling trailers, spillages etc., nearly all losses are caused by the activity of bacteria, yeasts and moulds.

Mr. Gardiner's figures showed that for an 'average' farm with a 150 cow herd averaging 7000 litres and ensiling 500 tonnes of silage DM, the cost of replacing lost silage nutrients with bought-in concentrate amounted to £208 per cow, or £31,200 for the herd, and that was when the concentrate was costing £220 per tonne! At today's prices the cost would probably be nearer £37,000.

So, if our 'average' farmer, in the example above, had taken steps to minimise these losses, how much would he need to spend and how much could he save in bought-in feed costs?

Let us assume that he cuts the crop at the correct stage, with a 'D' value of 75+, and at the right time of day - from about 11.00 a.m. onwards. Wilting for longer than 24 hours will result in unacceptably high nutrient losses due to respiration and the activity of aerobic spoilage organisms, so he keeps wilting time to the minimum required to achieve a DM of 25 - 30%. He would need to have a word with his silage-making team and persuade them that care needed to be taken to rake all the grass into the swathes (without contaminating it with soil), to avoid over-filling trailers and missing grass on the corners. The cost is minimal; the reduction in overall losses is at least 10% of the potential over-all total.

At the clamp, achieving maximum compaction as quickly as possible will arrest respiration losses and initiate fermentation earlier. Using a Silapactor throughout the filling phase can increase compaction density by up to 40% compared to rolling with a tractor or loader, and saves time and fuel because, at three metres wide and weighing 4 tonnes, fewer passes are needed to finish the job. Taking into account the initial investment cost in the implement spread over a ten year period, the fuel saved and the huge reduction in fermentation and filling losses that attaining this level of compaction results in, the cost is negligible and can result in a further reduction in the potential total losses of, at the very least, 20%.

Sealing the clamp with O2 Barrier 2 in 1, the proven oxygen barrier sheet, will cost about £170 or 8.5p/tonne more than covering with traditional silage sheeting, but will save time - only one sheet required to seal the top of the clamp - and money, because there will be around 40% less weight of plastic to dispose of when it is finished with. O2 Barrier 2 in 1 allows between 6 and 10 times less oxygen to pass through it than two conventional silage sheets, so anaerobic conditions in the clamp are achieved faster and retained for longer, resulting in better conditions for the fermentation to take place.

By taking this overall approach our 'average' farmer can easily get into the 'good' class, with losses down to about 15% (75 tonnes) of the 500 tonnes of DM ensiled. Now, with very little spent per tonne to get there, replacement concentrate costs would be down to £18,750 at 2011 prices.

The remaining losses can be reduced even further. They are the result of fermentation and aerobic spoilage, but can be reduced to a minimum by treating the silage with a preservative that kills the microorganisms responsible. Safesil, as I've mentioned in previous articles, kills spoilage bacteria, yeasts and moulds. Investing a little over £9,000, our 'average' farmer can have 'hygienic' silage, with fermentation losses reduced to an absolute minimum and zero waste from aerobic deterioration. Now our overall DM losses could be in the region of 5%, representing a compensatory concentrate cost of £5,500, a £25,700 saving on the original £31,200, and return on investment in the region of 2.5:1.

Our farmer needs to know the value of the silage that he has made. Since energy and protein drive production, it is worth paying to have an accurate analysis by wet chemistry for protein and ME to give reliable results. At around £50 this should cost about 10p per tonne of DM ensiled.

It is worth remembering that it is always the most digestible and therefore most valuable parts of the silage that are lost, and that it would be very unlikely to get a 2.5:1 return on cash invested by keeping it in the bank. It's not the cost; it's the return that matters.

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