

The Challenges of Making High Quality Baled Silage **by Trish Lewis, Cundy Technical Services**

Baled silage has traditionally been seen by some dairy farmers as a means of removing surplus grass from the system, with crops left to 'bulk up' before cutting. Quantity has often overruled quality in the decision of when to cut. However, more recently some farmers have seen the benefits of baling high quality grass cut at the young leafy stage. The overall winner of last year's South Island silage competition was a high quality baled silage.

Cutting grass at the young leafy stage before full seed head emergence has several benefits.

- Nutritional quality will be better, particularly energy and protein levels
- A thinner crop makes it easier to wilt quickly to the desired dry matter (DM) content
- Re-growth after cutting will be quicker
- The paddocks are out of the grazing round for less time

However, when making highly nutritious grass silage, it is critical to achieve a good fermentation and make palatable silage with minimum DM losses. There are some challenges to doing this because early cut grass usually has a lower DM content, less sugar and more protein. There are several critical factors for achieving high quality grass balage.

Communication It is very important to use a reliable and trustworthy balage contractor, and to keep him updated on when you plan to cut well ahead of time so he can be there when needed. Far too many contractors don't find out they are needed to bale a crop until after it is ready, and sometimes after it is cut!

Wilting Grass for bales should be wilted to at least 27% DM and some balers need a drier crop to work at their optimum. However, over wilting results in increased field losses and a restricted fermentation. In field losses equate to a drop in digestibility of around 2 percentage units per day (for example digestibility can drop from 68% to 64% over 2 days). The time needed to wilt a crop to target dry matter depends on a lot of things including weather conditions (especially wind and humidity) and thickness of the swath. Crops dry at a faster rate in the first two hours after cutting.

Inoculant Early cut grass is more prone to a slow fermentation producing unpalatable acetic and butyric acids rather than lactic acid. Using Sil-All[®], a proven high quality inoculant, ensures that the fermentation is fast and efficient, minimises losses and improves nutritional quality of the silage. As there is not the opportunity to disperse bacteria in a bale in the way that the chopper and blower does in a forage harvester, it is essential to provide good distribution of inoculant across the width of the swath. This can be achieved with a two or three spigot Gandy applicator. Again, communication is important – make sure your contractor is well equipped to apply the right inoculant and that he knows your requirements in advance.

Compaction Achieving a really well compacted bale will help improve quality by squeezing out as much air as possible. This improves the speed and efficiency of fermentation and also reduces the risk of mould growth, as moulds need air in order to grow.

Wrapping Bales should be covered with at least 4 and preferably 6 layers of wrap. It is important to wrap bales as soon as possible after they are made, but moving them to the storage area before wrapping will reduce the risk of damage to the wrap. Failure to maintain the integrity of the wrap results in the ingress of air into the bales and growth of moulds and other spoilage organisms. Mouldy silage should never be fed to stock due to the risk of mycotoxin contamination.

Protection from pests A recent trial in Ireland looked at ways of reducing bird damage to plastic wrap on stored bales and found that the most effective methods were placing a net 1m above and beside the bale stack, placing monofilament lines 0.5m apart or putting grease on top of the bales. Interestingly, they got no reduction in damage with any of several chemical treatments tried. The spoilage and losses resulting from damaged wrap are considerable, so in areas where birds or rodents are a problem effective pest control is a very worthwhile exercise.

In summary, making high quality silage from early cut grass will pay dividends in terms of improved animal performance, but it is critical to do the job right and not try to cut corners.

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