

# Why build a forage reserve?

Carry-over silage gives you peace of mind, and better options, when grass growth is poor.

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In 2017–2018, most farms experienced severe winter conditions followed by a summer drought that reduced annual grass growth by one quarter. To cope with such shocks, we recommend that farms build a rolling silage reserve of 400kg DM per livestock unit. That's the equivalent of two bales per head, or about one month's feeding for a mature cow.

This level of reserve represents a compromise between feed security and the cost of making and storing the additional feed. Consult your Teagasc advisor to devise the most appropriate means of building reserves for your circumstance.

In practice, developing a reserve will happen through a combination of better silage management and strategic purchase of reserves, where required. Having a forage reserve means that your options are much better in difficult years. Where the daily deficit is <10% on a DM basis, low fibre (NDF) concentrate products, based on native cereal and protein sources, can be readily used.

On the other hand, larger proportional deficits mean you have to buy in high fibre by-product feeds. Much of this product type is imported, with all that entails.

Increasing forage grown per hectare on your land is usually the cheapest means of building forage reserves. Many farms will increase their forage production by getting their fertiliser and liming right. This should be tackled before considering other options.

### Management effects on silage yield – soil fertility

Silage yield and quality are often considered as competing objectives. However, a good base of soil fertility and a well-managed reseeding programme will deliver high yields at the quality required across the year.

On farms with poor soil fertility, silage cutting often gets delayed to build adequate yield. However, as shown in Figure 1, if soil fertility is improved, then the crop will reach target yield much earlier, leading to better quality and an improved recovery for second cut.

### Management effects on silage yield – should first cuts be delayed for bulk?

On this point, it is vital to consider the yield of forage DM across the year as a whole, not just from a single cut. Figure 2 shows the effect of different first cut dates on total grass silage DM and forage energy (UFL) yield per hectare, in a two-cut system with a



Jack Kearney, Teagasc Glanbia future farmer.

fixed second cut date in late July.

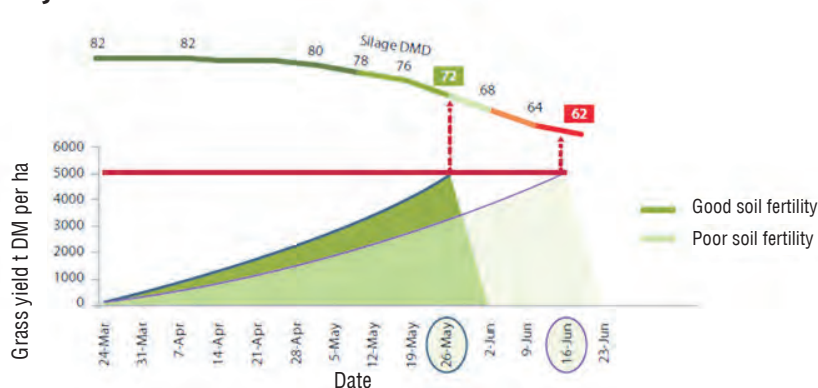
There was no advantage in total DM production to delaying first cut due to poor yield at second harvest. Worse still, first cut silage was lower in DMD and not suitable for growing cattle or calves, milking or suckler cows. Delaying second cut further, for the 'later' first cut swards, would have reduced availability of autumn after-grass and negated any silage yield benefit.

In fact, many farms who delayed first cut in 2017 experienced great difficulty in salvaging second cut crops in late August and September, which contributed to the silage shortage.

Low soil fertility may exacerbate this problem due to slower recovery and increased delay to second cuts. From a cost perspective, delaying first cut would not result in significant dilution of land charge (due to similar total DM yield per hectare), while contractor costs would be similar (particularly on a bale silage system).

Management decisions around first-cut silage yield should be made on the basis of meeting DMD targets and

Figure 1





**Jack Kearney, Teagasc Glanbia Future Farmer farms with his parents, Larry and Annette, outside Rathcormac in Co Cork.**

"After the fodder shortages of 2013 and 2018, we decided that we needed a plan for winter forage security, ensuring that we had the right quantity and quality of silage for the "normal" year plus a reserve of silage needed for the extreme weather events that have become more prevalent in recent times," says Jack.

There were three parts to the plan:

- Infrastructure – The herd had expanded since the original pits were built on the farm and they were no longer fit for purpose. Jack built two new silage slabs.
- A reserve for difficult years – "A normal winter for Jack's herd is four months, but to have forage security for the difficult years, he needed to conserve the equivalent of an additional two bales of silage per livestock unit in the herd as the reserve," says Teagasc/Glanbia programme advisor Richard O'Brien. "This might only be used every three to four years."

Jack contends that the old saying of "old hay is like money in the bank" is true.

- Appropriate quality – Jack aims to match the silage quality to the animals being fed: "We want to have the flexibility to vary the quality of the silage we are making, with moderate-quality silage for the dry cows but high digestibility silage for the milking cows and the young stock on the farm." Two new silage slabs have given him that flexibility.

**Key messages**

- Target a reserve of 400kg DM per livestock unit into your silage plans. That's the equivalent of two bales per head or one month's feeding for a mature cow.
- Build soil fertility on the farm in general, and on silage ground in particular.
- First-cut silage yield should be made on the basis of meeting DMD targets

and improving annual grass tonnage per hectare, rather than focusing on the bulk of any individual cut.

- The cost of building a feed reserve highlights the need to closely examine the economics of increasing herd scale based on conserved forage and concentrates.
- Adequate fodder storage space is critical to managing feed reserves.

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**Cost**

At recommended volumes and a moderate forage unit cost of €160-180/t DM, a standard dairy herd would need to invest €80-€140 per cow for no increase in milk revenue.

However, unlike purchased feed that is used within the year, the reserve is retained as stock inventory and so is largely profit-neutral. The cost of building a feed reserve highlights the need to examine the economics of increasing herd scale based on conserved forage and concentrates.

**Fodder feed space**

Having adequate fodder storage space is critical. Investment in this aspect of farm facilities has been relatively low in recent years, despite significant increases in dairy herd size in particular. Teagasc recommends that forage storage costs be factored into any farm development plan where annual feed demand is increased.

**Figure 2:** Effect of first cut date on total silage DM and UFL yield in a two-cut system

