



Reducing Feed Costs by Improving Silage Quality

Refreshing the farm's silage-making strategy has helped to retain profitability in the Bryson family's 300-head beef finishing enterprise in Ayrshire.

A couple of years ago, when faced with high cereal and protein prices, it became clear that making good quality, consistent silage was vital to keep control of input costs," commented Craig Bryson, who farms with his family at Townhead Farm, Newmills. "We revisited the process and have come up with an approach that is producing highly digestible silage with great D-values."

Townhead is a former dairy extending to 350 acres, with two poultry houses and a tomato-growing enterprise in addition to the finishing cattle. But the family recently moved to growing their own cereals, and they now cut 110 acres of wheat and barley at 30% moisture for crimping. This is reducing reliance on other sources of starch energy in the finishing ration.

The stores are six months to a year old when purchased. Craig selects growthy types and brings home a mix of both native and continental breeds, which are housed in a slatted building with a sloped rubber matted lying area, adapted from the old cubicle shed. The silage-based

ration includes the home-grown crimped grains, minerals, distiller's dark grains and half a kilo of straw per head, all delivered through a Total Mixed Rotation (TMR) feeder.

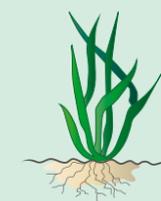
The suggested tweaks to improve quality, spanned the whole silage making process. The Brysons were advised to balance yield with quality as a lighter yield of leafy, highly digestible grass is most desirable, so it was proposed to aim for three lighter cuts rather than two heavier crops of stemmy grass producing forage of lower digestibility.

Getting the grass off to a good start is, therefore, imperative and this is achieved at Townhead with the application of slurry and hen pen from their poultry enterprise. Precision spreading of two tonnes per acre of hen pen plus a covering of slurry in March is the goal. Having recently upgraded storage, the Brysons are making better use of slurry to reduce fertiliser costs.

"We currently aim for silage with a high D-value and ideally a Metabolic Energy (ME) of 11.0 or greater, with crude protein higher than 14%, so I prefer to cut when less than 25% of the grass has seeded.



Digestibility of grass silage in relation to stage of growth.



72 D-value, leafy growth. Typical first cut yield of a long term ley - 4.6t DM/ha



68 D-value, lengthening of stems. Typical first cut yield of a long term ley - 6.1t DM/ha



65 D-value, flower heads emerging. Typical first cut yield of a long term ley - 7.5t DM/ha

D-value will fall by around half a unit per day once grass starts to provide flowering stems

Before I get the mower hitched on, I am on the lookout for good, dry weather and a break in the rain that comes regularly through the Irvine Valley," said Craig.

He added: "It's important that we plan to make the best silage possible, because if the weather does turn wet, the quality will be diminished but not completely wiped out. D-values will diminish by half a unit per day once the plant starts to push up flowering stems, so a few days of rain that delay cutting can significantly reduce quality."

The good results at Townhead can also be attributed to the silage-making process itself, with a tedder being used to scatter grass pre-lifting. Craig said: "Once scattered, the silage wilts more quickly, allowing us to achieve 25% dry matter and reduce effluent. The silage is usually heading for the pit 24-30 hours after it is cut."

Under the new regime, two forage wagons come in from a local contractor with the result that silage making is now much more flexible and less hectic. The contractor charges per hour rather than per acre, making the new process affordable for three lighter cuts.

Both parties agree this is fair, and with no need for extra trailers and drivers there is a substantial saving in diesel costs, too. Crucially, though, the wagons' longer chop length seems to suit the young, leafy grass and Craig sees quite a difference in the finished ration.

"The heap along the feed passage is much lighter and more digestible for the cattle. We like the young stores to hit the ground running, and this silage is now so appealing to them that intakes have improved. We supply Stoddart's at Ayr with five finished cattle every week, so we rely on our cattle to perform on the diet. They kill out well between 280kg and 350kgs, and achieve an occasional U but mainly R4L grades."

There is little doubt that the changes to the Townhead system have delivered positive results and big savings. Robert Gilchrist, Knowledge Transfer Specialist with QMS, commented: "Farmers aiming for cattle growth rates of 1kg liveweight per day could save 12 pence per animal per day on feed costs by improving the quality of their silage. This may not sound a lot, but for the 300 cattle at Townhead over a 200-day winter it's a £7,200 saving."

He was keen to point out that suckler herds can benefit from adopting the same approach. He said: "High-quality silage can be supplemented with straw to preserve more of the winter reserves for young stock - good quality silage is rocket fuel for growing cattle. Alternatively, a first cut can be taken to feed the young stock and then left to bulk out for a stemmier second cut to feed the cows."



Comparable diets for growing cattle at 1kg a day

	Diet 1 (using high quality silage) 11.0 ME silage, 14% crude protein		Diet 2 (using poor quality silage) 10.2 ME silage, 11% crude protein	
	Weight (kg)	Daily Cost (£)	Weight (kg)	Daily Cost (£)
Barley	0	0	1.5	£0.15
Dark Grains	1	£0.18	1.75	£0.32
Silage	27	£0.60	20	£0.43
Total	28	£0.78	23.25	£0.90

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