

BEEF

May 2021

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Silage quality to the forefront

Silage typically makes up over 30% of the diet across a beef animal's life and often a much higher percentage in heavier type soils or in years when poor weather hits. Therefore, it is essential that for farmers with autumn-calving cows, weanlings, stores or finishing cattle, that silage is fertilised and harvested at the optimum time to ensure lower cost levels of weight gain over the winter period.

Harvesting of silage in May is crucial to achieving high-quality first-cut silage (**Table 1**). Delaying cutting to allow crops to bulk up further is a false economy and results in increased meal bills for growing and finishing stock during the winter.

Over a number of studies at Teagasc Grange, leafy silage with higher dry matter digestibility (DMD) resulted in better feed intakes and liveweight gains for finishing cattle. The benefits include shorter days to finish (lower total silage

DM required), lower daily concentrate intakes to achieve target daily gains, and lower fixed costs (slurry, labour, overheads, etc.). Similar benefits are incurred with higher DMD silage fed to weanling cattle. Dry suckler cows in good body condition score (BCS) require lower DMD (66-68) silage.

Table 1: Effect of harvest date on silage quality and weight gain in beef cattle.

Silage quality				
DMD (%)	75	70	65	60
Harvest date	May	June	June	June
	20	2	15	28
Silage (t/DM/ha)	4.6	6	7	7.7
Intake (kg/day)	9	8.3	7.6	7
Liveweight gain/day (kg)	0.83	0.66	0.49	0.31

RESEARCH UPDATE

Is your bull fertile?

Bull breeding soundness evaluations are helping to identify infertile bulls earlier, but discovering if a bull is subfertile requires another approach.

With calving coming to a close on many farms, attention will soon turn to preparations for the impending breeding season. Natural service is the predominant breeding strategy used on Irish suckler cow herds, with over 80% of calves born annually sired by stock bulls.

Consequently, given the small herd size and predominant use of single-sire mating, the fertility of the stock bull is of major importance to both the number of calves produced and the calving spread within a herd. Indeed, level of fertility is much more important for an individual bull than for a cow, given that the former may be used to breed up to 40 females during a normal breeding season.

Recent preliminary Irish statistics suggest that while the main reasons for culling of natural service breeding bulls in beef herds were injury (23.2%), followed by locomotory issues (21.9%), infertility *per se* accounted for 7.2% of bulls being culled and is undoubtedly underestimated given that many sterile bulls are now being identified at an earlier stage following the recent adoption of bull breeding soundness evaluations (BBSE). Subfertility, estimated to affect 20–25% of bulls, is a much more insidious condition and of much greater economic significance, given that it cannot be readily identified during a typical BBSE.

Subfertility may be caused directly by low libido, sperm defects or indirectly by physical factors affecting bull mobility or mating ability,



There is no guarantee that a bull will retain his fertility from season to season.

and the condition can lead to a reduced six-week calving rate, significant economic loss and distress to herd owners. While a sub fertile bull may be capable of getting some cows pregnant, the condition will result in low pregnancy rates, an extended calving interval, reduced calf weaning weights and higher involuntary culling of cows for barrenness, unless the bull is operating within a herd with a very low cow:bull ratio. Frequently, subfertile bulls go undetected and herdowners may be unaware of the problem until much of the breeding season has elapsed or until such time that cows are checked for pregnancy.

Furthermore, there is no guarantee that a bull will retain his fertility from season to season or even within a season. Thus, herd owners must be continually vigilant for potential fertility problems and keep breeding records of when cows are bred, so that corrective action can be taken before it is too late.

It has long been proposed that intensive-rearing regimens on high grain diets, typically practised in pedigree herds, could have long-



term detrimental effects for sperm production and bull fertility, as well as for both metabolic and musculoskeletal health. This could be manifested through increased scrotal fatness, alterations in the steroid production, poor libido and mating ability, and/or direct effects on sperm morphology. Recent Teagasc research has shown that while high concentrate diets from birth through to 17 months of age had no discernible effect on any aspect of sperm production, quality or fertility measured, research into longer-term effects on bull longevity is warranted. Recently, the use of electronic heat collars worn by the bull are being marketed as heat detect devices, but these can also be used to assess bull libido and mating ability. This will be studied during the coming breeding season at Teagasc Grange. Teagasc, together with University College

Dublin and the University of Limerick, are studying various aspects of bull fertility as part of a large Science Foundation Ireland-funded project. The work is investigating optimising the rearing management of young bulls, relating differences in the DNA profile of young bulls with age at sexual development and sperm quality, as well as the biochemical differences in the sperm of mature bulls ranked as either high or low fertility. It is expected that the results of the project will yield much new information on the main factors affecting fertility of bulls, as well as identify key biomarkers for the early identification of high fertility, and the culling of subfertile animals. Such information can then be harnessed within the national genomically-assisted cattle breeding programmes for the long-term improvement of bull fertility in Ireland.

HEALTH & SAFETY

Silage safety



May is the month when grass growth ramps up and silage is made. It is a high-risk month and it is important to give safety your first priority. Silage making involves a lot of machinery movement, both in farmyards and on public roads. Make sure that there is a clear view for drivers at entrances/exits to public roads. Warn oncoming traffic of dangers, but warning devices such as signs



and bollards should not be placed on a road surface. Farmers and contractors should discuss safety matters in advance. Say “stop” immediately if any dangerous work takes place. Keep family members, particularly children and elderly farmers, well away from moving machinery. Ensure that farmyards are tidy to allow efficient machinery movement. Speed kills – make sure that machinery movement occurs at a steady pace.

Ensure safety with silage.

Planning for early silage

Jarlath Ruane, Co. Mayo

As is the case with all of the participant farms in the Teagasc Green Acres Calf to Beef Programme, Jarlath Ruane from Claremorris, Co. Mayo is planning on harvesting his first-cut silage crop in the coming weeks. The plan is to harvest the crop as early in the second half of May as weather permits. To make this possible, Jarlath has had a plan in place from the start of the grazing season. The sheep flock grazed the silage ground from lambing in mid February until April 4, and then were moved to grazing ground to allow the timely close-up of the silage ground. Grazing the silage ground down to 4cm plays a major role in improving silage quality. The 10 acres of silage ground then received 100 units/ac of protected urea and two bags/ac of 0-7-30 at close-up. While this might not be enough phosphorus (P) and potassium (K) to meet the crop's requirements on its own, we can factor in the coating of slurry that the ground received last back end, which is providing the balance of P and K needed. When the first cut is harvested, Jarlath will not delay in applying another 100 units/ac of nitrogen (N), followed by a coat of slurry one



week later, closing the full 10ac up for a second cut.

Should his silage ground yield as expected, this will leave him with a total of 425 bales of silage. As part of Jarlath's farming system, silage bales are purchased from a neighbouring sheep farm annually, this year being no

different. However, this year just 50 bales need to be purchased from this farm to meet the winter requirements, but in order to keep a good reserve of silage on the farm, it is likely that more than this will be purchased.

Jarlath says: "In my case it is important to think in good time about where my silage is going to be got from. I'll harvest all I can from my own farm but I also need to have an idea of how much I need to buy. Working this out early in the year gives me the best possible chance of having all of the silage I feed up above 73% DMD and fit for purpose. If I leave it too late to harvest and buy the feed I need, there is a strong chance that quality won't be quite as good as what I would like to feed, meaning higher meal costs. The logic around making good silage is the same for everyone really: plan well and plan in time".

A virtual farm walk will take place on Jarlath's farm on May 13 as part of the Teagasc Green Acres Calf to Beef Programme. Read about and watch the farm walk on Agriland.ie and the Teagasc beef website.