

Monitor your grass and manage your plan



Planning and flexibility will optimise your return from silage

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Research from Teagasc Grange detailed in Table 1 shows that as harvest date is delayed, and plants enter the flowering stage, grass yield increases but digestibility declines. This is because leaf sheath, stem and seed heads, which are high in lignin increase as a proportion of the grass plant. Cattle can't digest lignin so the feed value of the silage plummets.

So when aiming to harvest high-quality silage, plan to have your silage crops ready for harvest from

mid- to late May before most species have begun flowering. Monitor the growth stages of your grass swards from early May as warm weather will accelerate the flowering process.

Grass varieties

Older grass swards generally contain grass species with different heading dates. This can make management tricky. Intermediate perennial grass varieties generally head out in mid-May and are suited to producing high-quality silage with good yields in May and mid-July.

Late heading varieties tend not to head out until early June. If reseeding silage pasture it is important to include intermediate or late heading grass varieties with a narrow range of heading dates (within six days of each other) in your grass mixture.

Digestibility

The quality of silage measured as dry matter digestibility (DMD) should be

matched to the dietary needs of the animal (Table 2.). For example, a dry spring-calving suckler in good body condition will have a lower dietary requirement than a 600kg finishing steer.

Research has shown that digestibility of grass silage drops up to three units for each week that harvest is delayed. Heavy silage crops that lodge or have received a large dressing of nitrogen and possibly slurry may decline in digestibility at a faster rate due to leaf decay at the "but" of the sward.

Similarly, swards that were not grazed in the spring or late winter and had a high cover of grass before closing up, will be six to seven units of digestibility lower by late May/early June compared to swards that were grazed in March.

Harvest these swards in early to mid-May to avoid a buildup of dead material at the base of the sward to produce silage in excess of 72 DMD. Spring grazing allows a delay of about one week in harvest date, maintaining digestibility and recovering yield loss incurred in spring grazing.

Mowing

Before mowing, it is valuable to assess the nitrate levels and water soluble carbohydrates (sugars) in the grass. As a rule of thumb, grass

Table 1: Effect of harvest date on grass silage yield and digestibility

Harvest date	1 May	8 May	15 May	22 May	29 May	5 Jun	12 Jun	19 Jun	26 Jun	3 Jul
Yield (t DM/ha)	2.92	3.99	4.98	5.96	6.79	7.82	8.48	8.93	9.50	9.83
DMD %	79.9	77.9	77.5	76.6	74.6	69.2	67.9	64.3	63.5	58.2

Source: Teagasc, Grange

Table 2: Silage quality guidelines for different types of stock

Silage digestibility (DMD %)	Stock type
75 +	Freshly calved dairy cow (autumn cow)
74	Spring calving cows in milk, finishing cattle/lambs, pregnant ewes
72	Dairy young stock, growing cattle
70	Dry dairy cow (low BCS), suckler cow in milk
68	Dry dairy cow (adequate BCS)
66	Dry suckler cow (adequate BCS)

Source: Teagasc, Grange



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utilises 2.5kg N (2.0 units) per day on average, so final N should be applied 50 days before the planned cutting date.

If weather conditions are good, the crop can be safely harvested sooner if the Brix refractometer sugar levels are at the target 3% or more. Grass sugar content is more critical to good preservation than nitrate readings.

The ideal conditions to achieve high sugars in grass are: dry sunny weather, perennial ryegrass dominant swards, cool nights and mowing in the afternoon by when sugar levels will have built up. If sugar levels are reading low and conditions are suitable for harvesting, add a sugar source such as molasses to help the fermentation process.

Alternatively, increasing the dry matter (DM) of the grass by wilting will help increase sugar levels. Successful wilting depends on having the crop dry at mowing and swathes sufficiently wide that they can dry in good weather.

Ideally, grass should be wilted as quickly as possible to avoid losses through respiration in the swath. The dry matter of grass cut into large rows (30ft) will change little in 48 hours. Tedded swathes wilted for more than 24 hours may become excessively dry as shown in Table 2.

It is important not to over wilt grass

Table 3: Effect of wilting duration and swath width on grass DM % values

	Grass mown at 9am on day one			
	Day one			Day two
Swath treatment	9am	2pm	5pm	2pm
Triple swath mower conditioner	17.2	18.9	19.2	22.6
Mower conditioner – standard	17.2	20.2	21.8	29.5
Mower conditioner– wide	17.2	20.5	23.4	35.8
Spreading/teading	17.2	21.7	28.7	42.9

3 x 2.4m mower conditioner (MC) swathes combined into a 1.4m-wide swath; 2.4m MC producing a 1.2m-wide swath; 2.4m MC producing a 1.6m-wide swath; 2.4m MC with immediate spreading and tedding twice per day.

Source: Teagasc, Oak Park

(above 30% DM) for pit silage as it may lead to poor stability and secondary fermentation at feed out.

Harvesting silage in difficult conditions

It's best to delay mowing until the harvest can be completed once commenced – admittedly a difficult call. Avoid harvesting if soil trafficability is poor to avoid soil contamination and soil compaction.

It is very important to assess grass sugar levels and apply an additive if necessary as wet conditions will prevent wilting. Absorbent material such as beet pulp or soya hulls can help to reduce effluent losses and retain some of the grass juices for preservation.

On steep land don't overfill trail-

ers or consider baling and wrapping these areas at a later date instead.

Preparation

Finally, silage season can be a stressful time for farmers and contractors. So, be organised, have a plan and harvest a few days earlier, or later, than expected if weather conditions dictate.

Preparation begins with planning your intended harvest date, notifying your contractor on your proposed cutting date or having your machines serviced and ready to work.

Prepare silos and effluent channels and having plastic covers or bale wrap on site. Above all, plan for you, your family and everyone involved to be safe.