Cutting edge

Gordon Peppard looks at the main factors in silage quality and talks to a Green Acres farmer who has achieved impressive results

SILAGE is an expensive crop to produce therefore getting the balance right between having quantity at the correct quality is very important. Leaving the cutting date too long in order to bulk up the yield of the crop can have huge consequences in terms of losses in quality.

The following are some important factors in silage quality.

■Every week that harvesting is delayed will increase the amount of low digestibility stemmy material and decrease the amount of high quality leafy material.

■Ryegrasses have higher sugars and are easier to preserve, thereby making it much easier and more reliable to produce high quality silage from grass with a high level of ryegrass.

■If the pasture was not grazed prior to being closed up for silage there will be a dead butt in the silage sward which could have been there for over six months by the time the silage crop is harvested. This butt will have a digestibility of no greater than 40–50pc.

■Lodged crops will deteriorate very quickly in quality.

■Poorly preserved crops will expend energy in the preservation process and will reduce DMD.

■Poorly rolled silage clamps and bad pit management will lead to heating at feed out and thereby reducing the quality of the silage.

In order to consistently produce good quality silage, you need to have a plan in place in order to maximise yield while maintaining a high level of quality in your silage pit.

Joe Farrell produced great quality first cut silage

The plan can be split into two parts, a long term plan and a short term plan.

Last year one of the Teagasc Green Acres Calf to Beef programme farmers, Joe Farrell, Castledermot, Co. Kildare produced excellent quality first cut silage with a DMD of 80pc, a dry matter of 20pc, crude protein of 13pc and a ME value of 12.1MJ.

How was this achieved??

Joe's long-term plan involved the following elements:

SWARD QUALITY

Ensure sward quality is at its optimum by having a high level of ryegrass in the sward and avoid cutting silage from fields with an old pasture and low levels of ryegrass.

Having a mixed tillage and beef enterprise on the farm, Joe regularly reseeds fields to maintain a high level of ryegrass in his swards. Last year his first cut silage was taken from a newly reseeded field completed the previous autumn and a field a couple of years in grass. The swards are kept very clean and weed free.

SOIL FERTILITY

Soil test regularly to ensure that there are adequate levels of P, K and lime in the soils of silage fields. Silage crops remove a huge amount of nutrients from the soil and if these are not replaced there will be poor growth and therefore poor yields and quality.

Recent soil analysis show Joe's silage fields to be at index 3 and 4 for P and index 2 and 3 for K, lime levels are adequate and all fields have a pH reading above 6.3.

SOIL STRUCTURE

Every effort should be made to avoid soil compaction particularly when grazing, slurry spreading, applying fertiliser and silage harvesting.

All operations on the Farrell farm are carried out when the weather and ground conditions are suitable to avoid damage to the soil structure. Every effort is also taken to avoid soil compaction.

Meanwhile, the short-term plan involves looking at:

SPRING MANAGEMENT

Graze silage swards tight in the spring before closing up, this removes poor quality dead butt that may otherwise appear in the silage pit.

All silage fields on Joe's farm were grazed out bare in the spring removing all old grass material. This was completed to have all silage fields grazed and closed up by April 1.

FERTILISER APPLICATION

Slurry should only be spread on bare or very low covers.

Silage crops have a big demand for nutrients, therefore match crop requirements depending on soil fertility status and on how much slurry has been applied.

All silage fields on Joe's farm received early spring nitrogen in the form of three and a half bags of 13/0/25 plus 30 units of nitrogen and were subsequently grazed.

It is estimated that approx. 20–30pc of this spring nitrogen is still available to the silage crop.

When the silage fields have been grazed bare they then receive approx 3,000 gallons of slurry followed by 1.75 to 2 bags of Sul CAN per acre, five to seven days later.

New reseeds can receive up to an extra 20 units of Nitrogen per acre.

While 16 units of sulphur should be applied per cut, particularly on lighter land. In order to ensure that there is enough sulphur Joe uses products like Sul CAN or compounds with sulphur added.

CUTTING DATE

Ensure to cut the crop before it starts to head out. For most grass varieties this generally occurs between the middle and end of May.

The poor weather at the end of May last year made it quite difficult to get the correct cutting day, but Joe availed of two reasonable days to cut on May 29 and pick up on the 30th.

The sward wasn't tedded, just left in its row for 24 hours and then picked up.

The dry matter of the crop was only 20pc due to the poorer weather at and prior to harvest, ideally Joe would like it to be higher not to have such wet silage to handle.

PIT MANAGEMENT

Fill the pit quickly, rolling well to remove all air pockets, seal the pit well with no air gaps. Constant rolling of the pit while filling is essential.

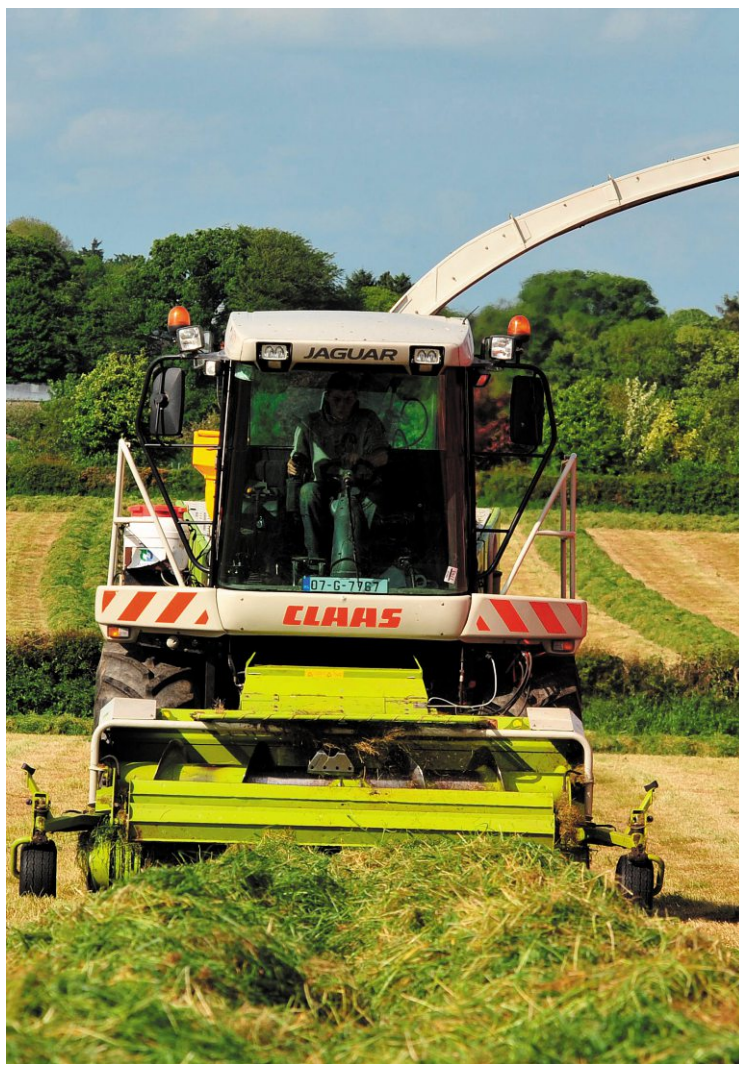
Ensure that there is no soil or manure contamination. Enough time should be left between slurry and dung application and harvesting, dung should be applied in the previous autumn.

Protect from wildlife and repair where necessary. Joe undertakes regular checks throughout the year and any tears to the plastic are repaired with tape.

At feed out ensure that pit width matches your stocking rate and that you can move across the full face of the pit very regularly.

A shear grab is preferable as it give a better seal to the pit each time.

Gordon Peppard is the programme advisor for the Teagasc Green Acres Grass to Beef programme



MAIN REASONS FOR A DROP IN QUALITY (Dry matter digestibility)

Cause of drop in DMD	% drop in DMD
1 week delay in harvesting	3
Old pasture, poor ryegrass content	5
Not grazed in Spring	7
Lodging	8
Bad preservation	3
Heating at feed out	3