

slurry storage

Reducing silage waste

Cost savings, better quality, higher intakes and no fear of running short are all benefits of taking action. Everything you take out of the pit could be edible.

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Minimise the amount of slurry that could come in with the grass by spreading slurry early, at the correct rate and rolling the silage ground.

Ensure the soil is in good health. Avoid soil compaction and lime where needed. It may be convenient to spread lime immediately after the first cut, provided a second cut is not planned for the ground. Maintain good soil fertility.

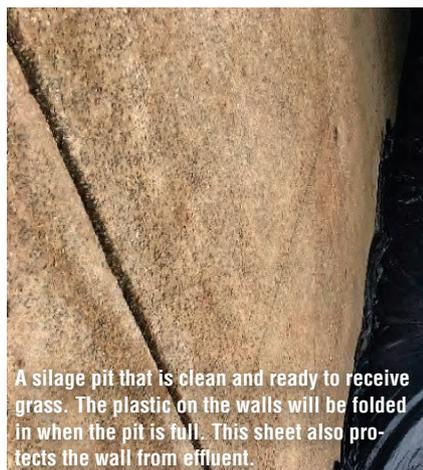
Check silage fields, especially near public roads or laneways, for rubbish that could be detrimental to the silage or animal.

Cleanliness around silage making is critical. This is really about advance preparation. The silage pit and environs, as well as entrances to fields/paddocks and roadways, must be clean.

Keep air out

Line the pit walls with plastic to prevent air from moving between the wall and the grass. Silage is preserved by lactic acid bacteria, which convert the sugar in grass into lactic acid, but only in the absence of oxygen.

It is essential to prevent air pockets



A silage pit that is clean and ready to receive grass. The plastic on the walls will be folded in when the pit is full. This sheet also protects the wall from effluent.



Michael Cody Glenmore, Co Kilkenny, using cable ties to hang gravel bags to the 'Zill' heavy-duty pit cover.

by filling the pit evenly, rolling the grass well (especially at the top and shoulders of the pit) and using at least two sheets of plastic to cover, with a new sheet on the outside.

Good preservation keeps spoilage organisms like clostridia, moulds and yeast at bay.

Any lack of attention to detail in sealing the pit will let in air and delay the preservation process, increasing losses. Silage pits must be airtight.

The amount of air in the pit before sealing depends a lot on the grass dry matter (DM).

In grass under 24% DM, there is very little space for air, as these spaces are filled with effluent. With material over 30% DM, air can find its way deep into the pit unless it is very well rolled and consolidated.

Compacting the grass

Leafy, wet, short, chopped grass will compact a lot better than dry, long chopped, stemmy grass. Nowadays, pits are filled very fast, so there isn't as much time for rolling and consolidating. The loader is heavy, but usually has wide tyres. Compacting the grass is a challenge. Spread loads as evenly and thinly as possible, leaving no lumps and humps or hollows.

The sides of the clamps pose a particular challenge. Often they are relatively steep, which means they can't be rolled for consolidation. It is important that the sides are well built with a uniform slope, without humps or hollows. This will ensure that the silage covers lie right up against the ensiled material, leaving no air pockets once they are weighted down.

Many farmers need to invest in silage storage to match an increase in stock numbers.



Overfilling

Increasingly, pits are being overfilled. Pits are narrower as they rise, increasing the danger of the loader toppling. The effectiveness of consolidation is reduced. At feed out, stripping back the cover and tyres becomes more dangerous and difficult.

The surface of the grass before covering should be smooth, without humps and hollows, eliminating air pockets and ensuring rainwater falling on the covers flows off. Water lodged in depressions causes surface damage and if it leaks through, will leave a column of bad silage. The covers must be weighted down well using a combination of tyres, mats, gravel bags and nets.

Covering the pit

Nets are great for keeping the covers in close contact with the ensiled material. Nets should be non-slip, to make them safe to walk on. Tyres should be placed edge-to-edge, with heavy lorry tyres along the sides. Less tyres are needed when heavy-duty covers are used. An ingested wire can kill an animal, so get rid of any tyres with exposed wires.

Gravel bags exert much more pressure for their size than tyres. They should be used in a line to seal clamps at ground level.

This seal should be right in close to the ensiled material, well inside any channel in order to prevent any air getting back up the pipe in the channel during storage.

Overlaps of the covers should be 1.2m to 1.8m and weighted down with gravel bags as well as tyres to make them air-tight. All too often, polythene on the sides of clamps can be seen flapping in the wind, because the initial covering was never retightened once the clamp settled. This causes massive surface waste and poor preservation in layers below this surface waste.

There are now covers available that cling to the ensiled material, preventing air pockets forming, reducing the amount of air taken in throughout the storage period. These work best where the pit will not be reopened during the summer.

The challenge with heavy duty covers is preventing them being damaged by a shear grab.

Impact of wind

Top and side waste seems to be worse on the windy side of clamps. Wind blowing over silage creates all sorts of pressures that will force or suck air if there are any deficiencies in the covering.

Regularly inspect and repair silage covers. Catching a damaged cover early can help minimise spoilage from oxygen exposure.

Walled pits

Walled pits are better and safer than clamps. They are also generally easier to cover effectively. However, silage waste against the walls is common. Gravel bags are needed

here also, and any water flowing on the cover towards the wall should be channelled away.

To achieve this, the pit would need to be well consolidated beside the wall from the ground up. Overfilling of walled pits is also common and again, makes effective sealing of the edges more difficult.

To prevent burdening the walls with extra weight above their design weight, grass piled above the walls should slope in at 45 degrees. This makes effective rolling at the walls difficult. The extra work and expense dealing with waste silage is considerable.

Wilting – Toss out the grass only on the basis of necessity

As far as possible, mow down dry grass. Pick up swards within 24 hours.

- In dry weather, the dry matter in standing swards can exceed 20%. These swards need minimal wilting and it is difficult to justify spreading out the grass. Cut into standard swards (approximately 2.7m) in the afternoon with a mower conditioner. The contractor may require two or three swards to be raked together to get the harvesting done quickly.
- When a good wilt is needed (grass sugars are low at about 2% etc). Mow around 10am and spread out the grass as soon as possible.