

Making best silage: Wrapping big bale silage

The industry's competitive marketplace means that farmers must pay close attention to all cost inputs as well as to the bale-wrapping process itself. This has become especially important with the significant rises in animal feed costs driven by increasing global demand and also by pressure from bio-fuel crop production. In the light of these increases baled silage offers a cost-effective alternative to providing winter fodder with good nutritional value.

Wrapping bales in silage stretchwrap creates an airtight seal to preserve the nutritional value of the ensiled crop and reduce spoilage. The density of the bale, the quality of balewrap and the number of layers are key to producing good quality silage.



Balewrap

Balewrap should return to its original state on contact with the bale, allowing it to compress around the bale to give a tight and secure wrap. This is thanks to the film's plastic memory.

The higher the tack level the better the film layers will stick together resulting in an airtight bale.

The three key requirements of a balewrap are:

- **Good mechanical properties**
- **A high level of tack (stickiness)**
- **UV protection**

To ensure a smooth wrapping process, the use of a good quality balewrap (which has the properties required to withstand the demands placed upon it during wrapping, transport and storage) is vital.

Using a poor quality balewrap will increase stoppages resulting from tears, inconsistent stretch or jamming of the equipment. It will also undermine bale density and integrity.

UV protection is also essential, even in cooler climates. It prevents the film from breaking down in sunlight and helps to prevent

increased temperatures inside the bale that can lead to the growth of yeasts and moulds.

When should bales be wrapped?

Bales should be wrapped in dry conditions. Not only does dry weather ensure that the ensiled crop has the highest dry matter content possible, it helps the film retain its 'tacky' properties. The effluent released from wet silage can affect the seal between the layers of film.

How many layers?

Findings from a scientific experiment undertaken at IBERS in the United Kingdom clearly demonstrate the very real benefits available to UK & Irish farmers through the application of additional film layers of bale wrap on silage bales. In a region where farmers have traditionally applied only 4 layers of film to a bale, the experimental data showed that increasing the layers of bale wrap from 4 to 6 improved fermentation, reduced moulds, improved the oxygen barrier and reduced dry matter losses.

IBERS report that the differences observed are highly statistically significant. This was the first comprehensive experiment of its kind evaluating film layering at different dry matter contents that provided conclusive evidence that increasing film layers results in significant improvements.

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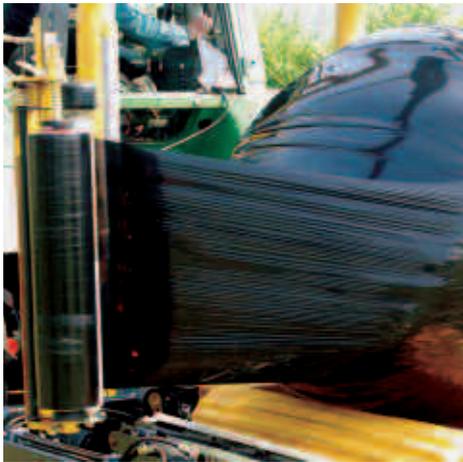


Stretching the film

Stretching the film helps achieve a good seal between layers, but overstretching can cause the film to lose its elasticity, reducing film effectiveness.

Top tips for baling and wrapping

- Aim to produce dense, well shaped bales. This will result in heavier but fewer bales per acre, thus reducing baling and wrapping costs.
- Chop the crop to allow for higher compression and better sugar availability to encourage a rapid fermentation - aim for 200 - 220 kg of dry matter / m³.
- Use silage inoculants, apply to manufacturers recommendations.
- Set baler density to its maximum allowable position.
- Wrap as soon as possible and definitely within 12 hours at storage site, using high quality film with 55 - 70 % pre-stretching.
- Avoid wrapping bales in wet conditions.
- Clean the rollers regularly to avoid a build-up of tack.
- Use a minimum of 6 layers for increased protection from damage and for a better air seal.
- Consider green or white wrap to reduce heat of bale surface and minimise spoilage.
- Wrapping should be done in accordance with wrapper and plastic manufacturers' recommendations.
- Use a wrapper with a good bale-drop table to minimise damage to the film on tipping.
- Handle bales very carefully and minimise handling to avoid damage to film wrap to prevent air spoiling silage.
- Carefully stack wet silage (<25 per cent DM) and only one bale high; silage with >35 per cent DM can be stacked 3 bales high.
- Net top of stack to prevent bird and rodent damage.



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