3 MOULDY SILAGE

Introduction

There are many reasons for poor quality silage, often nothing to do with the film. Weather, temperature, baling and wrapping conditions all change constantly, whilst the manufacture of the film remains a constant.

Many of the reasons for poor silage can be avoided by simple understanding of their cause and making measures to avoid them in the future.

Forage quality

It is obvious that the quality of the silage is directly related to the quality of the forage that is ensiled.

Forage that is too dry for haylage will quickly deteriorate when wrapped. The stalky crop will not compress well, creating a well aerated bale which both poorly affect the fermentation process. Also, too dry or stalky crop will risk puncturing the film on the bale during wrapping, further spoiling the bale from air penetration.

Contaminated forage

Soil from cutting too low

Rough and stalky crop

Dry and poor quality grass

Bale quality

A good, uniform and well formed bale is essential to produce high quality silage. Bales that are not fully covered, leaving 'shoulders', will trap air when wrapping creating mould inside the film reducing the silage quality.

Poorly covered bales will also risk puncturing the film when being applied, so allowing air penetration to the bale and reducing the silage quality.

Note how a well shaped bale produces a well wrapped bale, without lumps or 'pockets' that can allow air and water to penetrate.

Bales should be dense and well shaped, to avoid sagging and losing shape after wrapping. If this occurs, film integrity on the bale can be compromised, allowing layers to open.

Wrapper condition

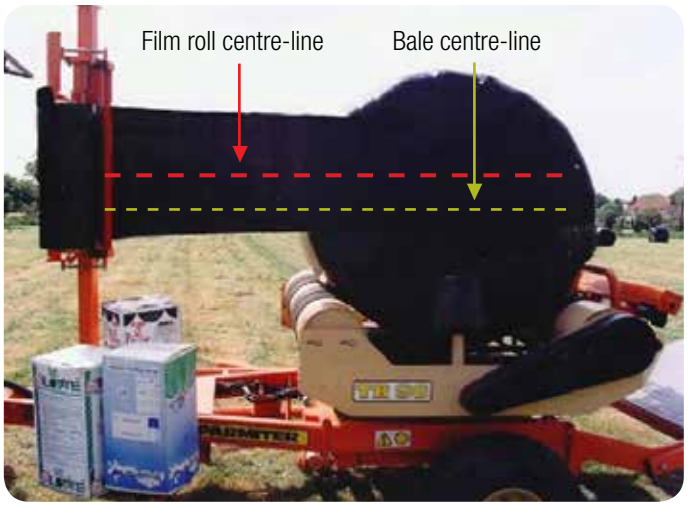
The condition and good repair of the wrapper is imperative to avoid problems during and after wrapping. If film tail remains attached throughout wrapping cycle, it will compromise a good seal on the bale side, allowing air to penetrate the bale.

Correct film application

Film Alignment

Film roll should be correctly aligned with the bale, to ensure correct and uniform film overlap, thus ensuring g the correct number of film layers ALL OVER the bale.

Insufficient film layers can lead to film splitting or air permeability problems through thinner film covering of the bale in some places.



The bale on the left has in-correct film over-lap as the film roll is positioned too high for the bale (film roll centre-line marked in red - bale centreline marked in green), meaning the centre of the film is not in line with the bale's centre of rotation.

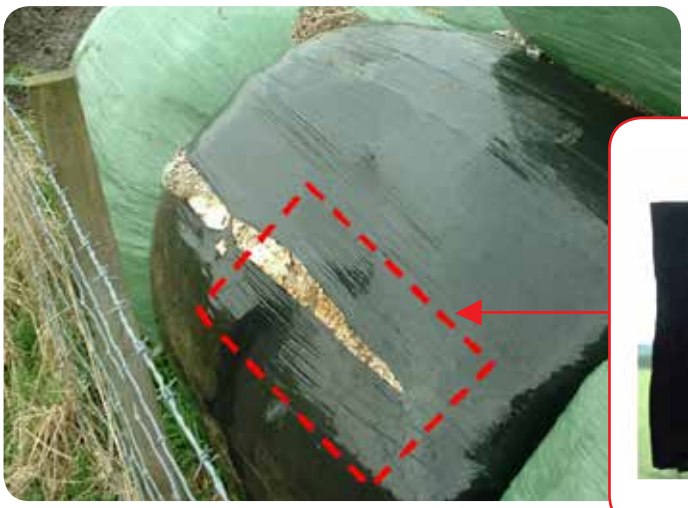
Number of layers

MINIMUM of 4 film layers is essential over the entire bale, with a minimum 50% film overlap.

Poor film over-lap is difficult to detect when using black film.

STRETCHFILM TROUBLE-SHOOTING
Problem: Mouldy silage

The bales below show how insufficient layers or poor film over-lap is easily seen when using light coloured film.



Splits easily occur where fewer layers have been applied to the bale.

Poor film over-lap can be caused by over-sized bales, or mis-shaped and mis-aligned bales not rotating and indexing correctly on the wrapper turntable bed.

Film 'neck-down'

When correctly stretched between the rollers of the PSU, the film will 'neck down' to the width required for the calibration of the frapping machine to guarantee the correct film over-lap.

Film over-stretch, caused by high speed wrapping in higher temperatures and build-up of film tack residue on the PSU rollers, can create a secondary-stretch from the PSU to the bale, so narrowing down the film web being applied to the bale.

The film 'neck-down' can be checked by measuring the film width across the end of the bale.

Bale handling

Film damage can easily occur if the bales are wrapped in the field, allowing the crop stubble to puncture the film, so allowing moulds to form inside the bale.

Transporting the bales to the location of the stack and wrapping there is a much better option.

Bale storage

Care and consideration should be given to where the bales are stored.

Bird and animal activity on the bales is the biggest cause of film punctures, from which air penetration will create mould in the silage, so spoiling the feed value.

Careful handling of the bale, without damaging or puncturing the film covering is critical to preserve the bale and ensure good quality when opening for use.

Storing bales on their end, rather than their side, will help maintain bale shape, eliminate the possibility of water pooling between bales and between bale layers in the stack. This will also present a much thicker 'skin' on the top surface of the bale, to prevent damage from bird or animal activity.

Covering the bale stack with a fine mesh net, suspended from the bales' surface by old tyres or sandbags, will help prevent birds settling on the bales and damaging the film.