

# FROM PROFESSIONALS FOR PROFESSIONALS

A GUIDE TO PERFECT SILAGE



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**COVERIS**<sup>™</sup>



# COVERIS FLEXIBLES AUSTRIA GMBH

For over 60 years, we have been one of the leading manufacturers of high quality films. Our long term experience of production and customer requirements are summarised in this guide to help you to produce the best possible silage quality.

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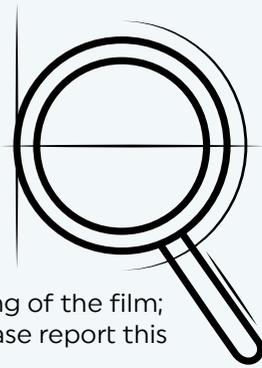
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# DELIVERY OF FILM

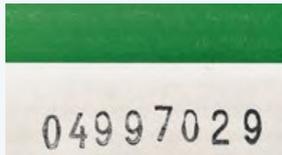


Please check the packaging of the film; if the box is damaged please report this immediately.

Write down the production number, which is shown on the pallet label, on the upper side of the box or on the filmcore, and retain it. This number helps us to track the film in the unlikely event of an issue.

The batch number should be kept during the bale storage period.

Batch numbers are located on the bottom left of the pallet label, on the flap of the box and on a sticker inside the core.



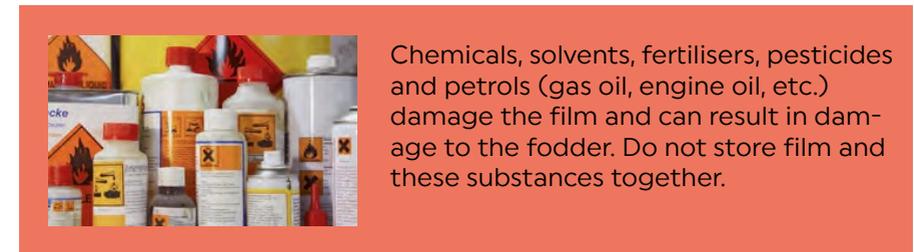
# STORING THE FILM

The film should be moved as soon as possible to the final storage place, preferably a dark, dry room, where it can be stored at room temperature. Freezing does not damage the film.

The film should be kept in the box and if possible on the pallet. Direct sunlight to the roll must be avoided, otherwise UV-stabiliser is degraded during storage.

Try to buy only as much film as you think you will need.

Film from the previous year should be used first.



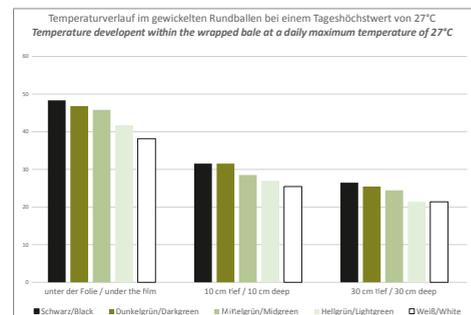
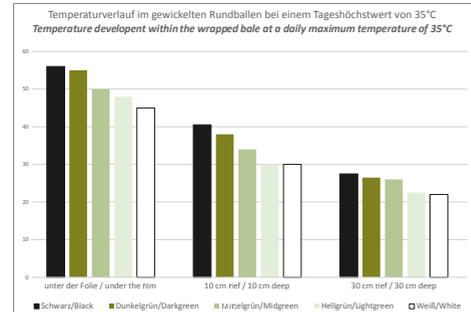
Chemicals, solvents, fertilisers, pesticides and petrols (gas oil, engine oil, etc.) damage the film and can result in damage to the fodder. Do not store film and these substances together.

# WHICH COLOUR SHOULD BE USED?

We generally recommend light colours, because lighter colours can reflect more sun rays. This high reflection results in lower temperatures inside the bale and therefore a better fermentation of the silage.

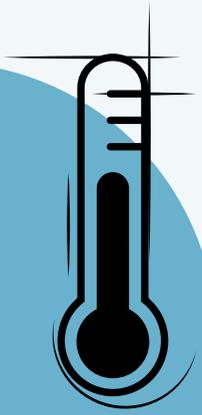
If silage heats up too much it could have lower nutritional values. Black or very dark green films absorb the sun rays and release heat energy, causing the bale to heat up.

Furthermore, heated film has a lower air transmission barrier, which again negatively influences the nutritional value.



Bundesanstalt für Landtechnik, Wieselburg

# PREPARING THE FILM FOR WRAPPING



Film should be stored 24 h before wrapping at a temperature above 15°C to reach an optimal tackiness. Please leave the rolls in the box until they will be used.

During transport the film should be kept cool; don't store it near an engine or an exhaust pipe.

Handle the rolls with care, as damaged edges, holes (due to sharp stones, etc.) or cuts can cause problems during use.





## PREPARING THE MACHINERY



The harvest starts with the checking and maintenance of the wrapping machine. Please check all gears are smooth-running and inspect moving parts for wear.



Remove any remaining glue, grit and dirt from all parts which are in contact with the film during wrapping. Avoid materials which contain solvents.



The cutting units should be sharp to cut the film accurately.

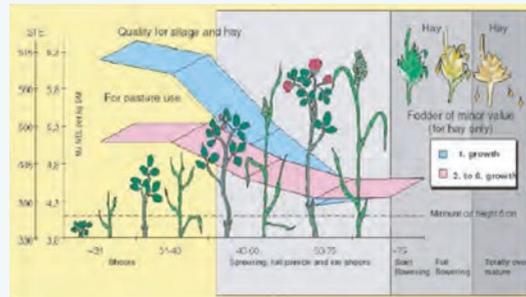


# PERFECT CUTTING TIME



The perfect time to cut is between the sprouting and ears shooting, and the flowering of the main grass. Within this time the fodder has the highest nutritional value and the prospects for a good silage are perfect.

## STATE OF UTILISATION AND ENERGY OF THE GRASSLAND FODDER



The cut should be at a height of 5 to 7 cm. Machinery such as a hay rake or rotary tedder should not be adjusted too low to avoid contamination with soil. If the dry matter content of the silage is between 35% and 40% the fodder should be baled.

# BALING AND WRAPPING



The more compact a bale is, the less air remains inside, which has a positive effect on the fermentation process. Therefore it is essential to compress a bale to be as compact as possible.

After a maximum of 2 hours the bales should be wrapped, as the fermentation process starts. Needless loss of nutritional value can be avoided.



With a very high dry matter content problems with mouldy bales can occur. Dry stalks cannot be baled as effectively and any remaining air supplies a perfect environment for mould spores because of a higher pH-value. From 50% dry matter content upwards, silage becomes problematic and needs special treatment.



If you want to produce haylage, please harvest with special care and use only highest quality fodder. Furthermore it is essential to set up the baler tightly to press out as much air as possible.

Please keep an eye on the weather if you bale and wrap. Rain reduces the tackiness of film if rain drops are trapped within the layers. This gives air the possibility to enter the bale which leads to bad silage.

## ACHTUNG BEI REGEN:

Die Klebkraft der Folie geht verloren, wenn Regentropfen mitgewickelt werden. Das kann zu Lufteintritt und schlechter Silage führen.

# BALING AND WRAPPING

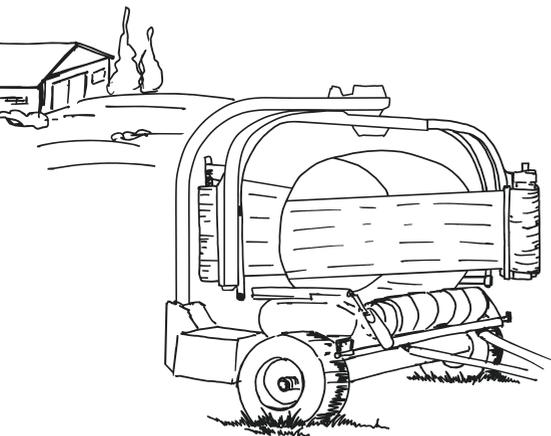


Bales have to be as even as possible. Wrapping with net or net-replacement film is normally the best method to achieve even bales. Uneven bales cause problems during wrapping and storage.



When the bale is uneven the film is stretched unevenly, which could result in an irregular overlapping (areas with 2 layers next to some with 4 or more layers).

In these places air is able to enter the bale easily. Please use at least 4 layers when wrapping the bale. For an optimal silage we recommend 6 layers.



We would like to point out that some sisal twines are treated with oil which again can degrade the film.



# BALING AND WRAPPING



To reach an optimal silage and work as economically as possible, the film should be stretched for **round bales** at 70 %. If the film is stretched less, air/water can enter the bale; further to this more film is used than necessary. If film is stretched too much, the UVstability and general resistances is affected negatively.

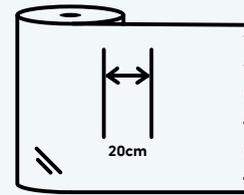


For **square bales** the film should not be stretched too much, most of the wrapping machines have the possibility to adjust from 55% to 65% pre-stretch. Due to the shape, square bales strain the film much more and a lower pre-stretch is recommended.

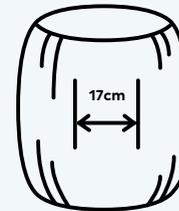


For **tubular wrapping** only light colours (white, light green) should be used, as the film does not become as warm and the risk of overstretching, which is higher than for the other 2 wrapping methods, is minimised. Further to this, an additional layer between the bales should be used, as the film is strained extensively at this point.

# BALING AND WRAPPING



Please check the pre-stretch unit to get an optimal result. Mark 2 lines on the roll at a distance of 10 cm apart. After 2 turns measure the new distance on the bale, if the 10 cm becomes 15 cm the film is stretched 50%, if the distance becomes 17 cm the film is stretched at 70%.



The film necking-in on the bale is as follows

- 500 mm film width becomes 380 - 420 mm width on the bale
- 750 mm film width becomes 580 - 620 mm width on the bale

If the pre-stretch is too high, the film will be stretched too much. This means that the film becomes thinner and it retracts too much. Insufficient pre-stretch leads to poor lamination between the layers, because the film does not become tacky enough; it's also not efficient.

For an optimal silage quality 6 layers of film should be used (for dry, hard stalks we recommend 8 layers). The film roll has to be centered onto the bale to reach a correct overlapping of 50%.

# STORING THE BALES

We recommend handling the bales only with appropriate machinery after wrapping. For transport over a longer distance, the bales should be loaded on a trailer. Bales should not be handled too often.

There should not be any liquid manures in the immediate environment of the bale stack. The use of pesticides or other chemicals must be prevented, as it can lead to damage of the film.

Bales have to be checked regularly for damage and holes.

Holes have to be patched immediately with appropriate tape. Do not use normal tapes as they are not UV-stabilised.

Our silage stretch films are UV-stabilised for up to 12 month's storage outside. Longer storage is not guaranteed.



# STORING THE BALES



The stock ground must be secured to protect the bales:

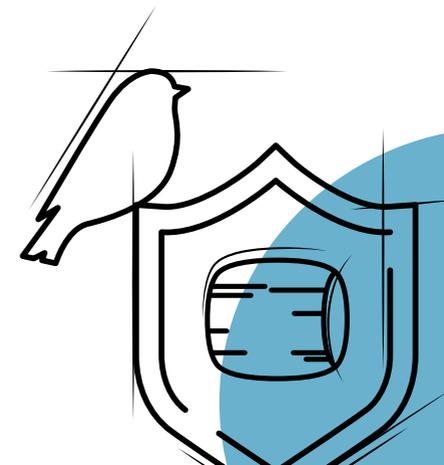
- with fences against wild animals and grazing livestock
- with netting against birds and cats
- with a sand base layer against mice and moles



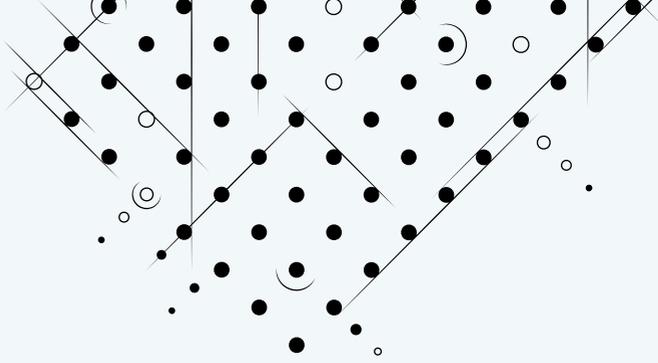
Bales should be stored on the flat side, as the number of film layers is much higher and bales are better protected. In any case the stock ground should be clean, and clear of sharp stones or other similar objects.



Bales should not be stored more than 3 high. If the bales are soft or uneven, we recommend not stacking them.







I N N O V A T I O N

