

## Oxygen barrier film

### jbs barrierefilm® reduces oxygen permeation

#### jbs barrierefilm®

- is a cling film which may be used underneath any top film
- is a multilayered film produced from polyethylene and EVOH (fully recyclable)
- is an especially oxygen-tight film that almost completely inhibits oxygen permeation
- provides the chance to protect the silage's top and sides from yeast and mould

Yeast and mould play a decisive role in the heating and spoilage of silages – it occurs, whenever there is enough oxygen. Oxygen has the biggest impact on the growth of these harmful microorganisms. It permeates through the film during storage, microorganisms will develop slowly. As soon as the silo is opened, oxygen will permeate the silage at the cutting surface. This may result in a virtual explosive increase of yeast and extensive moulding.

#### jbs barrierefilm® as an air barrier

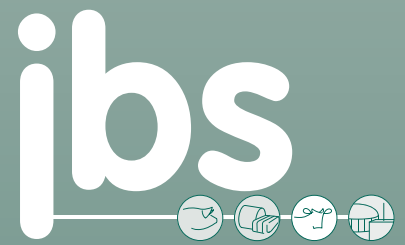
- supports lactic acid bacteria and therefore a rapid drop in pH
- reduces the development of yeast and mould inside resp. on top of the silage right from the start
- protects the forage from aerobic deterioration and nutrient losses
- protects the forage against spoilage and mycotoxin contamination
- reduces forage losses and the overall amount of work



In general, silage film is produced from polyethylen (PE), as PE is a rather robust, acid-resistant material. High-quality film achieves – depending on thickness and brand – an oxygen permeability of approx. 150 to 250 cm<sup>3</sup> per m<sup>2</sup> per day (DLG-standard, DIN test 53380-3:1998-07). Studies have shown that these values may actually be a lot worse in practice.

Film produced from polyamide (PA) is very oxygen-tight and several producers have tested it as a barrier film for silages. Unfortunately, this material is neither acid- nor moisture-resistant, meaning that it will lose its high oxygen impermeability when being used on wet silages – to the point of total decomposition of the material on exposure to fermentation acids.

*The lower the growth of yeast and mould during storage, the more stable the silage after opening and the less nutrients are lost!*



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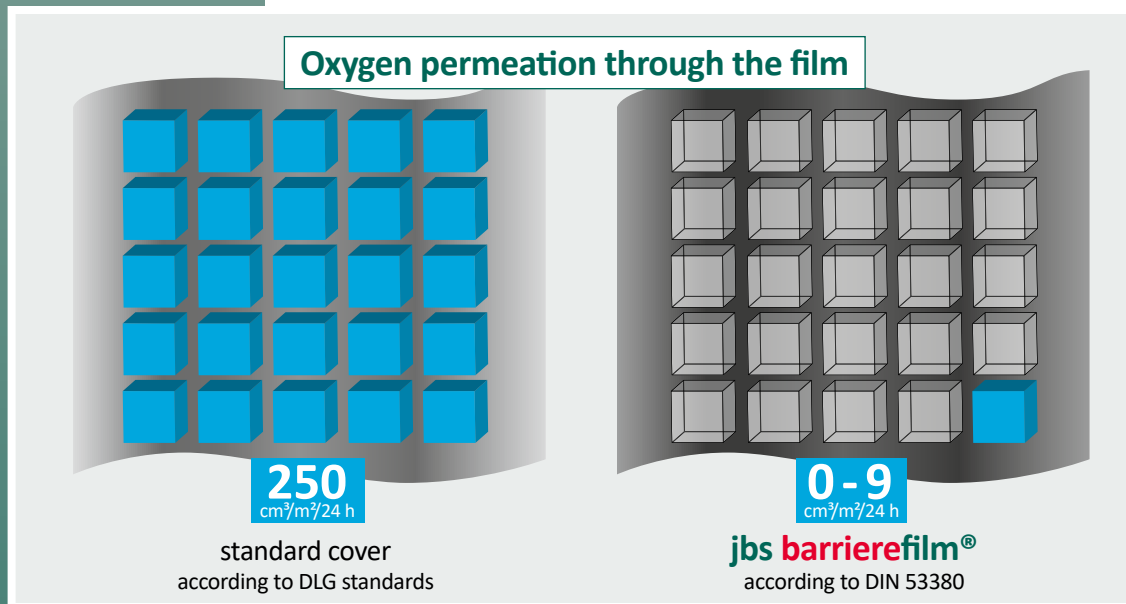


### At a glance

- very high oxygen permeability: 0 - 9 cm<sup>3</sup>/m<sup>2</sup>/24 h
- reduces amount of spoiled silage
- reduces losses from both the top and sides
- reduces dry matter losses
- saves time and effort
- improves feed quality
- reduces waste disposal costs
- available up to a width of 20 m

In order to achieve the same oxygen impermeability as **jbs barrierefilm**<sup>®</sup> with PE, a film would have to have a thickness of 600  $\mu$ ! This takes a lot of material and limits the adaption to the silage surface as well as the handling – the significantly higher costs notwithstanding.

**jbs barrierefilm**<sup>®</sup> provides the solution: Its oxygen-tight layer is protected by a PE layer on both sides of the film. **jbs barrierefilm**<sup>®</sup> is produced to achieve an oxygen permeability of 0 - 9  $\text{cm}^3/\text{m}^2/24 \text{ h}$ . Thus, **jbs barrierefilm**<sup>®</sup> is superior to all other conventional methods of silage cover, which only achieve an oxygen permeability of approx. 150 - 250  $\text{cm}^3/\text{m}^2/24 \text{ h}$ .



### Rules to observe when installing thin film:

**1. Place loosely on top of the forage!**

Thin film should always be applied loosely in order for it to be able to adapt to the silage's uneven surface.

**2. If at all possible: Do not tread upon it!**

If need be, only walk lengthwise, never over the sides.

**3. Secure overlappings with oxygen barriers!**

If film needs to be pieced on, allow for 50 cm of overlapping and secure it with an air barrier of silage gravel bags.

**4. Do not use sand to cover the film!**

Sand on the edges will pull the film too tight, sand on top of the silo will imperil the film due to the stones contained in the sand.

**5. Do not use old tires!**

Old tires will get brittle, the reinforcements will pierce through the rubber of the tire and damage the film. Tires do not form a consistent oxygen barrier, better use silage gravel bags filled to three quarters with fine gravel – preferably in our barrier protection belts **jbs barrierschlauch**.