

TRENDS

AGRICULTURAL PLASTICS

2023



SEPTEMBER

- Increased use of oxygen barrier films

COMING SOON

- Sustainable horticultural and baling twine solutions
- Sustainability and water management
- Special New Year's gift

OCTOBER

NOVEMBER

DECEMBER



PREVIOUS EDITIONS

- Cannabis cultivation under covers
- Cultivation of fruit trees under protective covers
- Increase in protected agriculture in the world
- Increasing use of biodegradable mulch
- Reducing the plastic used in the manufacture of agricultural films

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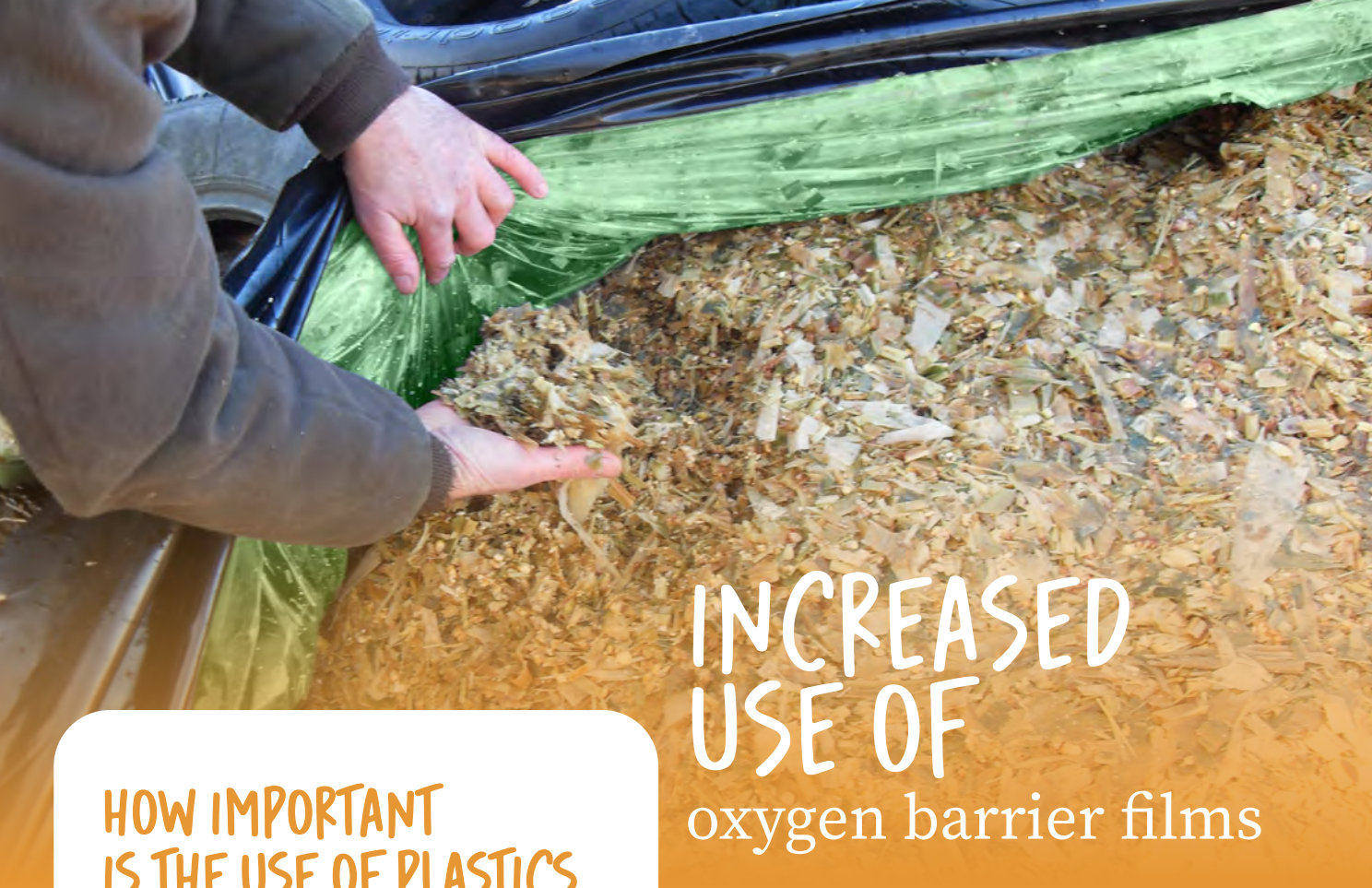
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INCREASED USE OF oxygen barrier films

HOW IMPORTANT IS THE USE OF PLASTICS IN SILAGE PRODUCTION?

The function of crop packaging plastics is to protect the silage from external elements and to reduce oxygen penetration to guarantee as high nutritional values as possible.

The main problem resulting from inadequate sealing of silo bunkers is the generation of a portion of silage in poor condition that has to be discarded, mainly due to the presence of oxygen. On the other hand, silage without proper protection will quickly lose its nutritional value and more kilos or pounds of forage will be needed to feed the same animal. Therefore, all these factors increase the operating costs of feeding, movement of materials, and slurry (manure) management, for example.





THE EFFECTS OF FEEDING POOR-QUALITY SILAGE TO CATTLE ARE THE FOLLOWING:

- Lower production and losses
- Digestive disorders
- Fertility problems
- In extreme cases, organ malfunction and even death

Nowadays, more agricultural producers are encouraged to use oxygen barrier films, which have gained popularity within the agricultural industry thanks to their properties, helping to improve silage quality and preservation.

There is no doubt that the use of oxygen barrier films is growing in the global market.

To get an idea of this growth, José Miguel Juárez, Product Manager of Crop Packaging at Armando Alvarez Group, tells us that they started selling about 30 tons (66140 pounds) of this product in 2018 and today they already exceed 400 tons (882850 pounds) per year.

As animal nutrition expert Maruzaan Booyse points out, farmers underestimate the amount of spoilage in their bunkers that is thrown away including its value if it needs to be replaced. This can be greatly reduced using oxygen barrier films. This type of film creates a vacuum effect on the silo surface that prevents the formation of air pockets, which are responsible for silage spoilage. More than 50 overlapping sheets of a standard film would be needed to achieve the same oxygen impermeability as with a special barrier film.

We invite you to watch a video on [how this silage film is installed in combination with the oxygen barrier film.](#)

VARIABLES TO CONSIDER WHEN CHOOSING A BARRIER FILM

The main aspects to consider when choosing a barrier film are the following:

- ✓ **The oxygen transmission rate (OTR).** The lower the OTR, the greater the film's impermeability to oxygen.
- ✓ **The thickness of the material.** A low thickness will ensure easy installation of the material and an optimal vacuum effect to eliminate air pockets.
- ✓ **Mechanical properties.** The optimization of the thickness in this type of film means that they must have excellent mechanical properties (highly resistant to tearing, high impact, punching, etc.) to cope with the wear they suffer.
- ✓ **The technology used for its manufacture.** The design of this type of film requires at least a 5-layer coextrusion.

It is important to pay attention to the variables mentioned above, since it is increasingly common to find plastics on the market that claim to be "oxygen barrier," when in fact they don't reduce or block oxygen transmission.

OTHER INTERESTING CONTENT

- 🔗 [Webinar on barrier films and their effect on forage](#)
- 🔗 [An episode about barrier films. Agriplastics Community Podcast](#)



DEMAND FOR SUSTAINABLE SILAGE PLASTICS

The demand for sustainable plastics (manufactured with the integration of higher percentages of recycled material) is also a top trend in the silage film market.

Regranulates are the by-product obtained from the polyethylene recovery process. In this case, companies such as **Solplast** or **Sotrafa** in Spain use polymeric recycled material obtained from flexible packaging to manufacture new polyethylene film to be used as silage covers in agriculture.

As for the demand for films with a higher percentage of regranulates, José Miguel Juárez assures that "we are increasingly being asked for plastic films that contain a minimum percentage of regranulates, which usually starts at 30% of the total product".

This demand for a higher sustainability carries over to films with high mechanical properties, where the availability of state-of-the-art technology is of paramount importance. For example, the use of 7-layer coextrusion equipments makes it possible to produce agricultural films with a high content of recycled material, such as Aspla's silage wrap: **Cycled Wrap®**, while maintaining the technical properties equivalent to those of a premium film.

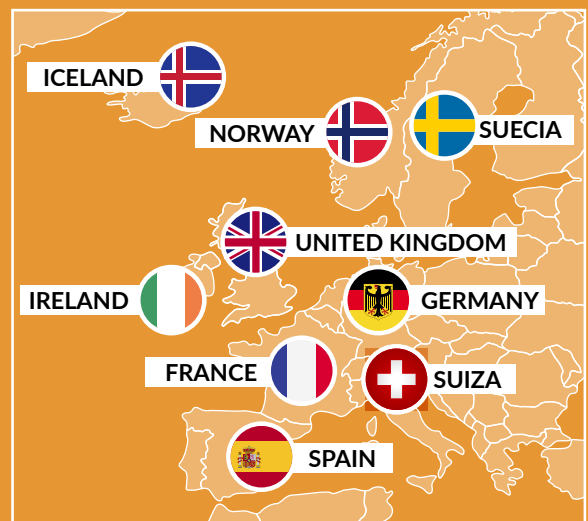
[**More info here.**](#)

PLASTIC WASTE MANAGEMENT IN EUROPE AND WORLDWIDE

This increased use of silage films with higher percentages of recycled material, also allows adapting to the different regulations that exist, especially at the European level, to manage more efficiently the plastic waste on farms, as is the case of the "**Waste Management (Farm Plastics) Regulations, 2001**" in Ireland.

In Europe, more than seven countries already have national or regional collection schemes for used agricultural plastics based on local regulations. According to the **CPA** (French Agricultural Plastics Committee), "with a national collection scheme in place, the collection rate is between 75% and 95%. Once collected, 98% of agricultural plastic waste is recycled".

The following countries in Europe have national collection plans for plastic waste in agriculture:



At the global level, in June 2022 the OECD published a report about the commitment that exists in different countries to regulate the management of plastic waste in general and their action programs.

Currently, this type of initiatives is spreading in other countries on a voluntary basis or through regulations following the principle of shared responsibility among the members of the value chain. ■

