

Position of European Bioplastics & EuropaBio concerning

FERTILISER REGULATION: BIODEGRADABLE MULCH FILM

On March 17th 2016, the European Commission published its proposal on a revised Regulation on the making available on the market of CE marked fertilising products.¹ According to the Commission, this proposal represents a step forward towards a circular economy. However, the proposal fails to recognise the potential role of biodegradable mulch films in modern agriculture.

The European Parliament, however, included this relevant technology in its report on the revision of the Fertilisers Regulation adopted in October 2017 and acknowledged its benefits in reducing the impact of plastics on soil.

Biodegradable mulch films have been available on the market for more than 15 years, backed by a solid scientific and technical knowledge, and meeting a high level of acceptance among European farmers growing fruits and vegetables.

Biodegradable mulch films deliver the same positive agronomical effects as conventional plastic mulches such as increasing yield, improving quality of crops, weed control, reduction of use of irrigation water and pesticides. Additionally, they offer additional advantages at the end of the crop cycle because they can simply be left on the field and ploughed under.

By including this innovative product in the Fertilisers Regulation as soil improver the EU could help tackle several challenges at once including the need to produce more food from less land and to farm more sustainably using less resources.

The facts

The European market: In Europe 80 KTonnes/year of mulch films are marketed, 5% of which are biodegradable. They are mainly used in Italy, France, Germany, Benelux and Spain.²

The waste issue: Plastic films generate about 80% of the agricultural plastic waste. Plastic waste generated by some film applications, such as films for tunnels, greenhouses etc., can be successfully collected and recycled. For other thin film applications such as mulch films, the plastic waste collection is difficult. A significant part stays in the fields and fragments generating microplastics that end up in rivers and oceans. Collected film waste is highly contaminated with soil, sand, and organic material. The contamination percentage of mulch films in terms of weight can reach up to 60-80 % of the total amount sold, making the mechanical recycling economically unviable.

In cases where collection and recycling of conventional mulch films does not or cannot take place EuropaBio and European Bioplastics consider certified biodegradable plastic mulch films as a reasonable alternative to prevent microplastics generation.³

Biodegradability properties: The CEN norm EN 17033 on biodegradability of plastic mulch films as well as several national standards on biodegradable plastics (based on respirometric measurements) foresee a biodegradation threshold of 90% in 2 years.

¹ <http://ec.europa.eu/DocsRoom/documents/15949>

² <http://www.apeeurope.eu/statistiques.php>

³ The European Commission's staff working document for the „European Strategy for Plastics in a Circular Economy“ takes up the issue of collection and recycling of conventional thin plastic mulch films. Four good examples are presented – Germany, France, Spain (Andalusia) and Ireland. The latter two cases, however, are unfortunately obsolete as the waste management company Suez decided to close down its mulch film recycling operations in Ireland due to economic reasons. And also Cycloagro – the entity responsible for thin plastic mulch film collection in Andalusia – is no longer collecting thin mulches anymore due to economic reasons (<http://www.teleprensa.com/almeria/el-campo-almeriense-vive-una-delicada-situacion-porque-cicloagro-no-esta-retirando-el-plastico-fino.html>)

Biodegradation of plastic material to CO₂ corresponding or exceeding 90%, means that complete biodegradation has been reached. The remaining share is converted into biomass, which no longer contains any plastic. In other sectors, for instance for detergents, biodegradability is measured according to the same principle.^{4,5}

Bio-based content and biodegradability: The term 'bio-based' refers to the origin of the plastic, whereas 'biodegradability' is a characteristic of a molecule. Thus, the molecule being fossil-based or bio-based does not determine whether the product is biodegradable. The polymers used to produce biodegradable mulch films are not entirely renewable, but are a mixture of bio-based constituents with non-renewable biodegradable constituents.

Advantages of biodegradable mulch films: Biodegradable mulch films do not have to be removed and disposed of at the end of the crop cycle, but can be ploughed under thanks to their biodegradation, ensuring the absence of an accumulation of plastic and no toxic effects.⁶

Should parts of the biodegrading mulch film be swept or blown into waterways they will sink to the bottom (due to a material density higher than 1) and are expected to continue biodegradation in the sediment layer.⁷

Biodegradable mulch films and agriculture legislation: A level playing field for these materials in the EU is much needed as the situation is far from being uniform among Member States and even between the different regions of a single state. This situation currently poses a barrier to the creation of an EU single market for renewable sustainable bio-based and biodegradable materials which would contribute to the EU's innovation in agriculture goals.

EuropaBio and European Bioplastics call on policy makers to consider these arguments when discussing biodegradable mulch films in the context of the Fertilisers Regulation, to take into account the realities of waste management of conventional plastic mulch films, and reflect on the impact of plastics on soil across the EU.

We recommend to follow the approach presented in the report of the European Parliament.⁸

About European Bioplastics

European Bioplastics represents the interests of around 70 member companies throughout the European Union. With members from the entire value chain, European Bioplastics serves as both a contact platform and catalyst for advancing the objectives of the growing bioplastics industry. For further information, please visit <http://european-bioplastics.org>.

About EuropaBio

EuropaBio, the European Association for Bioindustries, promotes an innovative and dynamic European biotechnology industry. EuropaBio and its members are committed to the socially responsible use of biotechnology to improve quality of life, to prevent, diagnose, treat and cure diseases, to improve the quality and quantity of food and feedstuffs and to move towards a bio-based and zero-waste economy. EuropaBio represents 77 corporate and associate members and bio regions, and 16 national biotechnology associations in turn representing over 1800 biotech SMEs.

⁴ ISO 18606; EN 13432; French Standard: NF U 52 001:2005; Italian Standard: UNI 11495:2013; USDA Standard: 7 C.F.R. § 205.2 2015

⁵ CEN – CEN /TC 249/WG 7 published the European Norm EN 17033 ,Plastics – Biodegradable mulch films for use in agriculture and horticulture – Requirements and test methods' in January 2018. https://standards.cen.eu/dyn/www/?p=204:110:0:::FSP_PROJECT,FSP_ORG_ID:41401,6230@cs=19E53F436D5E8A6FF49358DA8C195A6E2

⁶ Eco-toxicity is measured by the standards listed in footnote 4

⁷ The biodegradation in various waterways of mulch films certified biodegradable in soil is currently being researched by BASF. With regard to the marine environment, the Open-Bio research consortium - a project funded by the European Commission - has developed a method to measure biodegradation of plastics in the marine environment. First tests in accordance with this method have shown full biodegradation (90% CO₂ generation measured) of certified compostable plastics within the marine environment in one year. See also: Open-Bio final report work package 5 'In situ biodegradation' http://www.biobasedeconomy.eu/app/uploads/sites/2/2017/07/Open-BioD5.7_public-summary.pdf;
Press release Novamont: http://novamont.com/northamerica/leggi_news.php?id_news=52.

⁸ In the report of the European Parliament's Internal Market Committee the relevant amendments are 175, 182, 275, and 277. They concern the annexes 1 and 2 of the Regulation. <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0392+0+DOC+PDF+V0//EN>