

Minutes

Workshop DG GROW "Preparing the Plastics Strategy: bio-based and biodegradable plastics"

18 October 2017, 09:00-12:30

Participants:

- [REDACTED] (GROW), [REDACTED] (ENV), [REDACTED] (AGRI), [REDACTED] (RTD)
- [REDACTED] (Ecostandard), [REDACTED] (Friends of the Earth Europe), [REDACTED] (EuropaBio), [REDACTED] (CEN), [REDACTED] (Natureworks), [REDACTED] (Braskem), [REDACTED] (European Bioplastics), [REDACTED] (PlasticsEurope), [REDACTED] (Starch/Cargill), [REDACTED] (Novamont), [REDACTED] (Looplife Polymers), [REDACTED] (Neste), [REDACTED] (Fertilizers Europe), [REDACTED] (FEAD), [REDACTED] (Compost Network), [REDACTED] (OWS), [REDACTED] (BASF), [REDACTED] (Universitat fur Bodenkultur Wien)

GROW introduced the workshop by presenting the background and the timeframe of the future Plastics Strategy and explained the topics that were to be discussed during the workshop (see the agenda). GROW stressed that oxodegradable plastics were out of the scope of discussions because they are not considered to have biodegradable properties.

1. Taking stock on the terminology used

After a quick tour de table, participants discussed the terminology that is currently used (bioplastics, bio-based plastics, biodegradable, compostable). Participants agreed that the use of the word "bio" is confusing and misleading for the consumer. Strong efforts must be made from the communicational point of view to put a clear and consumer comprehensive borderline between different concepts. Participants also agreed on the terminology to be used during the workshop i.e. clear distinction between bio-based plastics and polymers and biodegradable plastics and polymers, as well as on the topics to be discussed.

Novamont, OWS and other participants agreed that tools that are currently available (standards, testing methods, etc.) are sufficient in bio-based plastics and biodegradable area. CEN offered to provide a list of existing tools and the work ongoing. Regarding biodegradable plastics, it was stated and agreed that the current use of the terminology is too vague because the term "biodegradable" alone doesn't provide any clear information about the environment where the biodegradation is supposed to take place (OWS). In this area, a lot of work has been done on test methods. Although standards related to the testing methodology already exist and can be eventually updated, criteria and standards are still lacking for biodegradation that doesn't take place in industrial composting facilities e.g. biodegradation in specific environmental compartments. Novamont explained that the use of "compostable" is more relevant and is used by the industry. "Biodegradable" is used only when plastics go to professional users for in situ biodegradation. The biodegradation of mulch films should be maximum 24 months. The risk of accumulation exists in the soil for a period of 1 or 2 years maximum.

OWS also stressed that plastics should not be designed for littering as it seems to be the case for plastics with biodegradable properties from the consumers' perspective. The design should be thought in terms of intended use and depend on the end of life. This point of view was shared by several other participants. Conflicting objectives should be avoided and both functionality and behaviour in the environment/end of life of materials should be consistent (Fertilizers Europe). Compost Network stressed that currently because of the lack of harmonisation of waste management practices it is impossible, so far, to deliver unique instructions to consumers and the message depends on the country. It was stressed that the harmonisation of waste management sorting should be promoted providing clear instructions to consumers.

European Bioplastics explained that the effort should be put into enhancing separate collection obligation for both plastics and organic waste. Infrastructure should be upgraded accordingly and across the EU.

2. Bio-based plastics

Natureworks, Neste, Braskem and BASF explained their production processes and feedstock that they use (corn starch, sugar beet, organic waste, oils, fats, cellulose). Participants stated that the 1st generation feedstock is largely available and stable. According to European Bioplastics it makes sense to switch to waste or CO₂ as a new feedstock. Natureworks stressed that 1st and 2nd generation (cellulosic) feedstock are equivalent in terms of sustainability. Therefore the focus should be on the most efficient use of land. BASF explained that the choice of the feedstock depends on the final product, the intended use, the overall sustainability and the additional benefits that the material can provide.

FoE Europe and others agreed that in some cases avoidance should be preferred as a solution rather than simply switching to an alternative material or feedstock.

The main benefit of using alternative feedstock is in terms of GHG emission savings. Bio-based material industry (including bio-based plastics) can also contribute to creating jobs and growth. Europabio gave an overview of job and growth opportunities for the EU created in the bio-economy sector.

Regarding the end of life issues, no distinction is to be made with conventional plastics. The use of bio-based plastics has no impact on the amount of waste generated.

Regarding the use and applications of bio-based plastics, European Bioplastics stated that generalisation of applications rather than specialisation makes sense. According to Natureworks the fact that currently bio-based plastics are more expensive than conventional plastics, in practice leads to specification. However, this situation could be balanced if new functionalities and properties are added to bio-based plastics (the extra costs then would be justified). Most of the time the choice for one or another material is made taking into account functionality, intended use as well as the price. There is no legal obligation to communicate whether a material is made from bio-based or conventional plastics but reliable certification schemes exist for those who want to put it forward.

As to barriers to be lifted, stakeholders identified several:

- Some incentives should be provided in order to close the price gap to encourage operators to replace crude oil based plastics with renewable ones (e.g. market based incentive systems including mandates for bio-based materials, reduction of subsidies for fossil fuels, public procurement, etc.),
- Actions in the Plastics Strategy should be in line with the Bio-economy Strategy,
- A level playing field should be created for bio-based plastics,
- A system of harmonised LCA for all types of plastics being material and technology neutral,
- A better use of certification schemes,
- Staying material and technology neutral (not excluding of raw materials or technologies per se),
- Take into account mass balanced approach.

GROW asked to participants to send their contributions in writing by Friday, 20 October (cob).

3. Biodegradable plastics

Participants agreed with the problems listed (see the Agenda). A remark was made about the fact that biodegradable plastics is not only a problem but should also be seen as an opportunity providing innovation, environmental impact, economy, etc. and provided that provided separate collection of biodegradable waste and the respective waste infrastructure are in place. ██████████ explained that biodegradable plastics are degraded in around 80% of CO₂ and around 20% are used by microorganisms and in total biodegradable plastics are 100% biodegradable.

As said above, the main issue currently is the communication towards consumers (non-professional users) and also across the value chain (from producers to brand owners and recyclers). When talking about biodegradable properties, one should always specify in what kind of environment they biodegrade and according to which standard they are to be considered biodegradable (OWS).

The most promising future use of biodegradable plastics is their use as organic waste collection bags. Compost Network explained the Italian experience on biodegradable plastics used to collect organic waste. Coupled with enhanced obligation to separately collect organic waste, the use of biodegradable plastic waste could help to create compost and deviate organic waste from incineration. Biodegradable plastics could also be used in fresh food packaging. In order to reflect on the most appropriate applications for biodegradable plastics, a platform gathering actors from the whole value chain (plastic producers, professional users, recyclers, civil society and public authorities) might be the best way forward. Natureworks in that regard explained the positive/negative list that was established in collaboration with the Dutch composting industry.

Regarding the recycling of biodegradable plastics, there are currently two issues:

1. Conventional waste stream contamination by biodegradable plastics,
2. Biodegradable plastics not disintegrating even in industrial composting plants: more details were asked to be provided by FEAD from its members. Participants agreed that if biodegradable/compostable plastics are labelled as such, they normally biodegrade. If this is not the case, there might be an issue with the composting facility. It is a case by case problem, depending on polymers, materials used and composting plants.

The participants were also informed about the possible link between the Plastics Strategy and the biodegradability criteria in the revised Fertilizers regulation.

Regarding the plastic mulches used for agricultural and horticultural purposes, participants were informed about the recent adoption of the EN 17033 Biodegradable mulch films for use in agriculture and horticulture standard (date of ratification 13/11/2017).

Participants agreed that both options, i.e. collection/recycling of plastics mulches and biodegradable plastic mulches, should be kept open for further discussion. The recyclability of plastic mulches depends on the thickness of the film. Currently, the main difficulty is to collect used plastic mulches and the level of contamination (soil, organic materials, pesticides etc.). In case where biodegradable plastic mulches are considered to be the way forward, they should be labelled and certified as biodegradable in soil. The littering issue (e.g. plastic mulches blown away or fragmenting and ending up in rivers) is currently not taken into account. The fact that additives are allowed and might not be biodegradable should also be kept in mind¹.

GROW asked to participants to send their contributions in writing by Friday, 20 October (cob).

¹ During the workshop diverse opinions were expressed. After the workshop, it was brought to GROW attention by ECOS and FoEE that the attached formal opinion on the standard explains that while the added constituents to the mulch film cannot amount to more than 10%, the constituents do not need to be tested separately for biodegradation. European Bioplastics informed GROW that mulching films certified to be biodegradable in soil (e.g. according to prEN 17033) may also contain constituents below 1 % without demonstrated biodegradability, provided, however, the sum of such constituents is not higher than 5%.

ANNEX I

Agenda

Workshop

"Preparing the Plastics Strategy: bio-based and biodegradable plastics"

18 October 2017, 09:00-12:30

DG GROW (Room BREY – 05/A)
Avenue d'Auderghem / Oudergemselaan 19
Brussels (Belgium)

Scene setter

The European Commission is working on the definition of a European Strategy for Plastics that will be announced at the end of this year. This Strategy intends to support and complement the existing acquis and tackle the interrelated problems associated to plastics, including fossil feedstock dependence, low reuse and recycling, and plastics leakage into the environment. The Plastics Strategy is part of our broader agenda aiming at the modernisation of our economy, with long-term societal objectives in mind: a competitive, low-carbon, circular, sustainable economy that creates jobs and growth, and increases the quality of life of our citizens.

The ongoing work focuses amongst other topics on how to support the shift from fossil based feedstock to domestically available alternative feedstock and on how to limit the negative externalities of plastics.

Bio-based and biodegradable polymers and plastic materials have been developed in response to multiple environmental concerns. However, a number of issues need to be explored to exploit in a sustainable way their potential contributions to the Plastics Strategy objectives.

We believe that in order to feed the ongoing work on the Plastics Strategy and to ensure a comprehensive and balanced approach it is essential to involve in the discussion those actors that have the highest knowledge of the products and the necessary technology.

The objective of the meeting is to exchange views with key stakeholders/actors to identify and better understand what the issues to tackle are and what would be the necessary tools and instruments to put in place.

Agenda:

1. Introduction (DG GROW):

- a. Purpose of the Plastics Strategy - On-going works – Timing
- b. Quick tour de table
- c. Take stock on the terminology used during the workshop: bio-based polymers and plastics, biodegradable polymers and plastics

2. Bio-based plastics

- a. Problem identification:
 - Access to feedstock (availability, primary/secondary feedstock, competition and trade-offs)
 - Environmental and economic benefits from switching to bio-based feedstock
 - End of life of bio-based polymers and plastics (not decreasing the amount of plastic waste generated, recyclability, recycling within the existing infrastructure, misgivings (recyclers, consumers, professional users))
- b. To be discussed:
 - How can bio-based polymers and plastics contribute to a low-carbon and more circular plastics economy?
 - What are the perspectives in market development? Specialisation or generalisation? In which applications are they most promising to substitute currently non-bio-based polymers and plastics? Are there any targeted applications where the use of bio-based polymers and plastics should be preferred to conventional polymers and plastics?
 - What would be the impacts along the life-cycle if the market for bio-based polymers and plastics develops (in the EU and globally)?
 - Could bio-based polymers and plastics respond to the objective of improving resources-efficiency?
 - What could be done to ensure that while substituting fossil fuel based polymers and plastics with bio-based we do not create additional environmental problems?
 - Other instruments to be developed? Other barriers to be lifted? How should the Plastics Strategy help? Which instruments do we need to develop?

3. Biodegradable plastics:

- a. Problem identification:
 - Need for a framework to validate claims of biodegradability for polymers and plastics.
 - Consumer perception of biodegradability of polymers and plastics in the environment (confusing terminology, misunderstandings, false green claims, labelling schemes)
 - Biodegradability of polymers and plastics in different environmental compartments (risks of generation of micro-plastics and of accumulation, testing and standards)
 - Impacts on plastic waste streams and recycling
- b. To be discussed:
 - Which place in the market do they occupy? For which applications? How are their biodegradability feature tested, certified, labelled?
 - What are the perspectives in market development? Specialisation or generalisation? In which applications are they most promising to substitute currently non-bio-based polymers and plastics?
 - What can be done to ensure that consumers fully or at least correctly understand the concept of biodegradation in different settings and environmental compartments?
 - Should biodegradable polymers and plastics be seen as contaminants to the recycling of conventional polymers and plastics? What are the risks that because of the consumers' behaviour, both waste streams are mixed before reaching recycling plants?
 - For which applications make the use of biodegradable polymers and plastics sense?
 - Building upon the availability of biodegradability related standards, for what

purposes should biodegradability standards, technical specifications and/or technical reports be either amended/updated or newly set (testing, differentiated biodegradability in different environmental compartments, targeted application etc.)?

- Need for other instruments to be developed including research and innovation? Other barriers to be lifted? How should the Plastics Strategy help? Which instruments do we need to develop?