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Dear Alana

Comments on the Single-use and Other Plastic Products (Waste Avoidance) Bill 2019 from the Australian Organics Recycling Association

About the Australian Organics Recycling Association

The Australian Organics Recycling Association is the peak body for the organics recycling industry in Australia. AORA see the efforts of our Processing Members at the heart of an organics circular economy based on organics recycling. The Australian Organics Recycling Association (AORA) envisages a future where recycling and reuse is the accepted management practice for surplus organic material and biproducts of human activity.

The continued success and expansion of the organics recycling circular economy that we drive is critical in achieving waste diversion targets set in the South Australian Waste Strategy 2015-2020 and in lifting the productivity and sustainability of the state's agricultural sectors.

We have 64 Processing Members nationally. Our South Australian membership includes:

- LARGE PROCESSING MEMBERS (3): Jeffries; Peats Soil and Garden Supplies; and Van Schaik's Bio Gro.
- SMALLER PROCESSING MEMBERS (4): SA Composters; Mulbartons Compost; Eco Waste and Composting Solutions and North Waste and Composting Solutions.
- INDUSTRY ASSOCIATES and Others (13) – these include: Eastern Waste Management Authority, Limestone Coast RDA, Field Systems, BioBag World Australia, Microbiology Laboratories Australia, Leartek, Colby Phillips Advisory, City of West Torrens, Rodenburg Waste Solutions, Sustaining Endeavour and TM Organics.
- Student Member Emily Bryson whose PhD project is investigating the potential for domestic dog faeces to be composted at home for use in backyard food production.

Australasian Bioplastics Association

AORA Associate Members come from key stakeholder groups linked to the organics recycling sector and the organics circular economy, and include the Australasian Bioplastics Association, ABA.

The Australasian Bioplastics Association (ABA) is the peak Industry body for manufacturers, converters and distributors of bioplastic products and materials throughout Australia and New Zealand. The Association represents Members in the promotion of and advocacy for, Member's products and materials. The Association works with government, composters, industry groups, NGOs, brand owners and plastic converters to further the understanding and appropriate use of bioplastics.

The ABA and its members across Australia and New Zealand are close partners along with AORA Processing Members in assisting Australians to divert increasing amounts of organics from landfill and into organics recycling facilities. Certified compostable products such as compostable waste bags and compostable packaging enable diversion of food waste and food soiled packaging from landfill to organics recycling, where the compostable products and the contents can be recycled into high quality composts or soil amendments suitable for improving our degraded soils.

Certified soil biodegradable mulch films are an alternative to conventional polyethylene mulch films used in some agricultural sectors. Conventional polyethylene mulch films are generally not collected post-harvest and sometimes are inappropriately disposed of, by burning or burying or simply stockpiled for extended periods. Certified soil biodegradable mulch films have all the attendant benefits of conventional polyethylene mulch films. However, they do not need to be collected and can remain in and on the soil post-harvest, where they will biodegrade naturally over time, as required under the applicable Standard.

Purpose of the proposed Bill

AORA welcomes the proposed Single-use and Other Plastic Products (Waste Avoidance) Bill 2019, the Bill. Given the prohibited plastic products listed in Section 5) (1) of the Draft Bill are largely related to single-use food service, prohibiting these items will drive them to be replaced with reusable items to a certain extent but largely they will be replaced with certified compostable alternatives. Hence AORA's view is that the Bill serves to expand the organics circular economy in South Australia.

The overarching purpose as described in the Bill Explanatory Information is understood and supported, however AORA would like to see this purpose expanded to include circular economy drivers linked to the organics recycling industry in South Australia. These include increasing targets for diverting larger amounts of waste from landfill, (including food waste) and the known benefits of recycled organics for soil improvement in South Australian agriculture. Given that the ban of the proposed prohibited plastic products used in food service would not be possible without the SA organics recycling sector, AORA suggest that objectives of the legislation be stated in Part 1 and that they include the objective of supporting and expanding the organics circular economy in South Australia.

Implementation of the proposed Bill

AORA would also welcome opportunities to be consulted as the legislation is revised following the consultation period and to work with the Local Government Association and others to ensure that the legislation does not contribute to any increase in contamination of organic waste streams going to our Processing Members. Consistent, well-designed education and messaging, as well as strong enforcement that are aligned with the requirements of the Bill will allow expanded amounts of organic streams to be processed into quality compost.

AORA Processing Members produce recycled organic products meeting industry standards e.g. Australian Standard for Soil Conditioners and Mulches (AS4454). Given the impact to our members in terms of processing costs should contamination levels increase, implementation of the Bill requires strong communication with Processing Members as a source of feedback on the success of diverting increased foodwaste streams for recycling.

Programs and support for recycled organic products

The challenges faced by organics recyclers in South Australia include increased costs in processing operations when responding to contamination and in managing record temperatures and dry conditions, which also increase amounts and costs for water usage. Fire prevention and response is also a key focus for AORA Processing Members recognising not only the potentially devastating costs of fires but also the impact of higher insurance premiums. In all this, our Processing Members are expected to continue producing great quality compost.

To sustain an expanded organics circular economy, which in turn supports the ban on Prohibited Plastic Products, AORA seeks funding programs that see recycled organics promoted in new markets, for trialing and promoting new innovations for application in soil, as well as for promoting the benefits of recycled organics in agriculture. Benefits of compost and other recycled organics in agriculture include lifting yields, improving soil water retention and the sequestering of carbon in soils. AORA SA Branch hold a number of events each year reaching over one hundred people including farmers to promote the benefits of recycled organics in farming and to discuss new innovations in application. Our next grower engagement event is on Wednesday 19th in Mannum targeted to the needs of Broadacre farmers.

AORA SA Branch seeks to present and fund an annual forum profiling our industry as drivers of the organics circular economy in South Australia. Such a forum would highlight key plastic products that continue to contaminate organic waste streams. In parallel successful educational, policy and other strategies would be presented that enable increased organic streams to be diverted from landfill and/or for litter reduction, whilst minimising the contamination burden and corresponding processing costs for organics recyclers. Such a forum would also promote quality recycled organic products to sectors such as local government, commercial food production, food and grocery retailing, and agriculture. These stakeholders increasingly rely on our Processing Members to enable a growing amount of single-use plastic packaging to be replaced with compostable alternatives and to thereby expand the South Australian organics circular economy.

We would be pleased to meet with GISA to discuss funding opportunities that promote recycled organic products in South Australia as part of expanding the organics circular economy.

Workforce Capacity in an Expanding Organics Circular Economy

AORA has a growing membership of Processing Members; four smaller commercial composting businesses have joined AORA SA Branch's three large Processing Members in the last two years, three of these are regional-based.

Given the critical issues affecting our industry, such as production of quality compost compliant with AS4454 and best practice operations to prevent fires, AORA has developed a training program for Commercial Composting Operators. The training program is aimed at delivering key skills and building workforce capacity. Funding for the training program is subject to approval under the Skilling South Australia program. The need for such a training program, which will also see *Commercial Compost Operator* become a suitable vocation for traineeships in South Australia, is only more compelling in response to the expanded organic waste streams that passing of the Bill will facilitate.

Certified Compostable Bags

It is noted that the South Australian Government may add other products in the future to the list of Prohibited Plastics products under the Single-use and Other Plastic Products (waste Avoidance) Bill 2019 and that this may include heavy plastic bags, extending from South Australia's ban on light-weight shopping bags.

Should plastic bags of any thickness be added to the list of Prohibited Plastic Products, AORA would welcome the opportunity to consult with GISA with a view to identifying suitable mechanisms to ensure that certified compostable bags (the meet requirements of AS4736 or AS5810) can continue to be produced and/or sold and/or used in South Australia for the purposes of diverting organic waste streams away from landfill and to the commercial composting sector.

Bioplastic Materials

Some introductory comments from Rowan Williams, ABA Chairman, AORA Board Director and Regional Market Development Manager, Asia Pacific for BASF Australia are provided below for GISA's background below:

> "Bioplastics are a family of products that include certified compostable materials, biodegradable materials and/or biodegradable and biobased materials. Some of our Members represent the largest producers of bioplastics globally.
>
> Biobased materials are those made from renewable resources such as sugar or corn. They may or may not be certified compostable (and if certified do have the inherent property of biodegradability, or able to be consumed by microorganisms, in for example, industrial or home composting). For example, biobased PE is chemically identical to fossil or oil-based PE and are therefore recyclable conventionally alongside each other. The same holds true for many biobased products where the fossil fraction carbon is replaced by renewable carbon. Biobased polyamide is another example, as is biobased PP, PS and so on. Many biobased products are destined for conventional plastics recycling, not organics recycling.
>
> Fossil based feedstock is often used in the manufacture of certified compostable biopolymers, (such as PBAT), as the feedstock plays no part in the ultimate biodegradation by microorganisms, in organics recycling. However, these products are not suitable, nor designed for conventional plastics recycling.
>
> All certified compostable materials are biodegradable, however not all biodegradable materials are compostable. Additionally, claiming to be "biodegradable" unqualified, but not referring to a particular Performance Standard does not define the time nor the environment under which the biodegradation or disintegration of the product should or will occur.
>
> Performance Standards call for pass or fail criteria for a product or material, so claiming that something is biodegradable without specifying, where something will biodegrade, when it will biodegrade and what will be left, after time, is meaningless. Hence we talk about certified compostable and not "biodegradable".

In Australia, AS 4736 and AS 5810 are the only suitable and applicable Standards for certified compostable products destined for microbial treatment through organics recycling:

- AS 4736 Biodegradable plastics—Biodegradable plastics suitable for composting and other microbial treatment.
- AS 5810 Biodegradable plastics—Biodegradable plastics suitable for home composting

A copy of the joint ABA and AORA joint position paper with respect to Certified Compostable Bioplastics is attached to this submission and can be found on our website.

https://www.aora.org.au/sites/default/files/uploaded-content/website-content/180503-certified-compostable-plastics-position-joint-policy-statement.pdf

Annexure 3 in the European Bioplastics Environmental Communication Guide for Bioplastics provides further details on the three key types of bioplastic materials, including the diagram below.

2. DEFINITION OF BIOPLASTICS

Bioplastics are bio-based, biodegradable or both.**
(European Bioplastics)

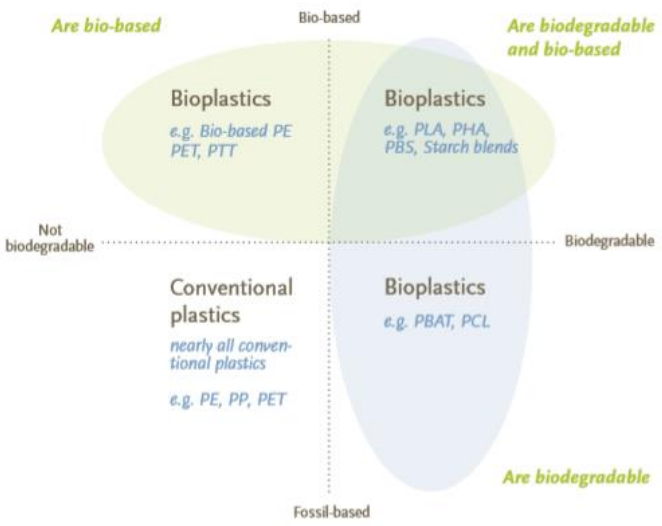

Figure 1: Material coordinate system of bioplastics, EUBP.

* *See also Annex 1 Standards and Annex 7 Glossary.*
** *For more information on materials as well as several end-of-life options for bioplastics, see Annexes 3 and 4.*

AORA and the ABA see that it is important that our common stakeholders in government, agriculture and the wider community understand and recognise that bioplastic products can be either biobased, fossil-based or a combination of both.

Certified compostable bioplastics (biobased, fossil-based or a combination of both) that meet the requirements of AS4736 or AS5810 are able to contribute to facilitating organics recovery in the form of products such as compost and biogas.

AORA and ABA members are aware that Conventional plastics are occasionally marketed as degradable and that this has resulted in confusion and potential for plastic build up in soils (in the case of plastic mulch-film and especially those that maybe oxo-degradable). AORA will continue to educate stakeholders who are known to confuse the terms “degradable” with certified compostable bioplastics. The latter products when used correctly, can safely facilitate organic matter to be recycled, as with certified compostable bags provided by many local councils in Adelaide and given to residents to conveniently divert residential food waste from landfill to organics recyclers. Whilst in agriculture, correctly specified certified soil biodegradable mulch film can facilitate growers to retain organic crop residues in their soils or to organically recycle them.

Different bioplastic products require treatment via different recovery streams and in making end-of-life claims as to end-of-life recovery options, the corresponding waste management infrastructure must be available in the region where the product is sold. Consumers should be given clear and transparent information on how to dispose of products. Hence:

- Biobased and non-biodegradable products can be placed in the plastics and packaging waste collection recycling systems prevalent in South Australia in local government and commercial sectors.
- All certified compostable-products can be placed in organic waste collection systems prevalent in South Australia such as council Food and Garden Organics Bins, FOGO.

Annexure 4 in the European Bioplastics Environmental Communication Guide for Bioplastics provides details on End-of-Life options for bioplastics products, including the diagram below to illustrate the two different pathways.

Visual: Bioplastics in post-consumer waste streams.

Certified Soil Biodegradable Mulch Film - In response to GISA's interest in the biodegradation products of soil degradable mulch film.

A number of ABA Members produce and supply certified soil biodegradable mulch film to growers in Australia and in other countries. Plastic mulch film is used on soil in cropping to increase yields through improved weed suppression, moisture retention and to retain heat in winter.

Unique benefits of soil biodegradable mulch film over traditional polyethylene plastic mulch film are that it is designed to break down towards the end of its design life due to microbes in the soil that metabolise it, enabling crop residues to be ploughed back into the soil in preparation for the next crop, or to be removed for composting (for example where growers wish to remove diseased crop residue for processing by a commercial composter).

Soil biodegradable mulch film also allows for better transmission of oxygen (as compared with PE mulch film) contributing to optimal moisture and oxygen in the root zone.

The breakdown products of soil degradable mulch film in soil are comprised of largely carbon dioxide, water and small amounts of biomass. To demonstrate this result, attached to this submission is a Science Advances Research Article, *Biodegredation of synthetic polymers in soils: Tracking carbon into CO2 and microbial biomass, Zumetein et al, 25th July 2018.*

A workshop on soil biodegradable mulch film bringing together ABA Members and growers in the Northern Adelaide Plains will happen in early March 2020, where ABA Members will gain insight into the growing context of the Northern Adelaide Plains, NAP and the expectations of NAP Growers. ABA Members will then specify suitable products for NAP Growers interested in participating in a trial of their products, including with specialist advice from the ABA

member. NAP Growers will also be able to hear about results and experience from ABA members in trailing their products nationally and overseas. ABA Members will provide technical advice to growers on the correct use of their products over the duration of each trial, including correct management when the farmer regards that soil degradable mulch-film has reached end-of-life.

The workshop will also provide an opportunity to explain to both growers and regional supply stores what oxo-degradable plastics are, the potential harm caused to receiving environments as they break down, as well as advising them about the provisions of the Single-use and Other Plastic Products (Waste Avoidance) Bill 2019.

The project is being Project Managed by Sustaining Endeavour and has been funded with a GISA CEMD Grant and assistance from the Stretton Centre and Playford Council. Assessment parameters will be set for the trials in consultation with agronomy advisers in the NAP region. Assessment will include examining the size and nature of pieces of soil biodegradable mulch film remaining at the end of the crop-life and observations as to whether it is practical to plough residual pieces back into the soil.

Oxo-Degradable Products

AORA thanks Green Industries SA for its' efforts to ensure that the definition for oxo-degradable plastic in the Draft Bill will not hinder the production, sale and/or use of certified soil-biodegradable mulch film in South Australia.

The definition of oxo-degradable plastic in the Draft Bill under the Interpretation Section is:

"oxo-degradable plastic means a material (however described) made of plastic which includes additives to accelerate the fragmentation of the material into smaller pieces, triggered by ultraviolet radiation or heat exposure, whether or not this is, or may be, followed by partial or complete breakdown of the material by microbial action"

AORA and the ABA are confident that this definition does not characterise certified compostable products nor certified soil biodegradable mulch films, given these certified products only commence biodegradation in response to soil micro-organisms and not in response to UV radiation or to heat exposure.

Given the biodegradation of certified soil biodegradable mulch film is in response to microbial metabolism, a well specified product will result in most of its associated carbon being released as carbon dioxide. No progressively smaller pieces would be iteratively generated, potentially giving rise to microplastic, as in the case of oxo-degradable products.

We look forward to further discussing the matters raised above, please do not hesitate to contact either Peter on 0418 791 921 or Uma on 0452 537 266.

Yours Sincerely,

Peter Wadewitz
National AORA Chair & AORA SA Branch Chair
Director, Peat's Group

Uma Preston
AORA SA Secretary and Policy Officer