Bioplastics NEWS

Coronavirus, Peru, Barbados and Recycling

Michael Stephen, an international expert on bioplastics, shares his thoughts and opinion on important issues impacting the bioplastics industry. Today, Michael writes about coronavirus, Peru, Barbados and recycling.

Michael Stephen

Coronavirus

The virus has taught us something else.

The Sunday Telegraph reported on 10th May that Britain turned its back on its own technology in 2011. Britain invented a contact-tracing app 9 years ago and the Cambridge academic who built the app says the government missed an opportunity to develop the life-saving technology. A senior government source admitted that officials had failed to explore ways to use technology to suppress the spread of a new disease.

Yet as the UK scrambles to get test, track, and trace operational, other countries such as S Korea have been praised as exemplars.

It seems to me that the UK is repeating the same mistake with technology invented in Britain 50 years ago to curb plastic pollution of the environment. In the 1970s Professor Gerald Scott patented a way to manufacture plastic so that it will safely biodegrade if it gets into the open environment instead of lying or floating around for decades, and he called it oxo-biodegradable plastic.

Similarly as the UK and the EU scramble to find a way to deal with this problem, other countries such as the UAE and Saudi Arabia have been praised as exemplars for making Professor Scott's technology compulsory for everyday plastic products made in or imported into their countries. As a result there will be no more persistent plastic pollution of their environment.

Wake up Europe!

PERU April 19, 2020

The Ministry of Health of Peru has decided that plastic bags are a good option.

The Executive director of Digesa's Control and Surveillance Directorate explained that "cloth bags can have contact with products that other people have touched, they can also touch the ground or another contaminated surface. For this reason, we say that the fabric bag must be washed and disinfected when returning home."

"Instead, plastic bags can be used for shopping and reused to dispose of solid waste generated at home. In particular, the use of biodegradable bags is preferable and recommended so as not to harm the environment." "In the state of emergency against Covid-19 we must protect the health of people by confining waste in plastic bags."

Peru could go one step further and require the plastic bags to be made with anti-microbial technology see http://www.d2p.net

Barbados

The Minister of Maritime Affairs and the Blue Economy has disclosed that the usage of plastic bags tripled since the island recorded its first cases of the COVID-1 9 virus. The April 1, 2020, ban on single-use plastic bags was lifted after local retailers and supermarket owners expressed concern about the accessibility of plastic bags.

"The thought of using so much petroleum-based plastic bags grinds me to the core" said the Minister, "but the idea that we will leave Barbadians exposed with no plastic bags at all because they can't get any bio-based plastic bags grinds me to the core even more, so as a conscientious government we made the decision that we would allow the manufacturers to source that [petroleum-based] resin"

He said that it would have taken manufacturers approximately five months to receive the quantity of biodegradable resin needed.

The Minister is right to allow the use of oil-based plastic bags, because they are much more readily available at much lower cost, and they do not place demands on fossil resources. This is because they are made from a by-product of refining oil to make fuels. So why not continue to use this by-product, which would arise even if plastic did not exist, instead of using land, water, and fossil resources to produce "bio-based" plastic – which in any event contains about 50% oil-based material?

The only problem with plastic bags is that they can lie or float around for decades, but this problem can be solved by making them oxo-biodegradable. See **www.d2w.net**

Composting and recycling will not solve this problem, because it is obvious that the plastic must first be collected from the oceans and the land environment before it can be sent for recycling or "composting." In any event industrial composters do not want plastic of any kind, and there are **21 reasons why "compostable" plastic is really not useful**

Recycling

According to the Institute of Environmental Engineering, of Zurich, "Conventional plastics may contain pro-oxidant additives that were added for different intended functionalities. Moura et al. (1997) described that colorants in general can act as pro-oxidants. If they partake in the creation of radicals or reactive oxygen species, such as singlet oxygen (1Δg), they can trigger photo-degradation of the polymer matrix."

"Conventional plastic products were found to regularly contain Fe, Ba, Ti, Zn, Cu and V. Some conventional plastic bag samples also contained Cr and Pb." "Thus, a potentially much higher number of plastics on the market may match the current legal definition of oxo-degradable plastics without being advertised or intended as such, i.e. unintentional ODP."

Users of recyclate cannot therefore assume that the recyclate does not contain pro-oxidants, but this will not matter if the recyclate is to be used for short-life products such as carrier bags, garbage sacks, or general packaging, where biodegradability is actually desirable.

However, if the recyclate is to be used to make long-life products such as damp-proof membranes, it would have to be stabilised anyway, as advised by the Austrian specialist laboratory TCKT in para. 1 of its **March 2016 report**.

The Austrian experts say "long-life films should be made with virgin polymer, or be stabilized to deal with loss of properties caused by the recycling process, whether or not any pro-degradant additive is present. Such stabilization would effectively neutralize the effect of any pro-degradant additive."

Although oxo-biodegradable plastic is used for low-value plastics which are not worth recycling, the experts in Austria (TCKT Report para. 4) and South Africa (Roediger **Report May 2012** page 3) have confirmed that if so desired plastic products made with oxo-biodegradable technology may be recycled without any significant detriment to the newly-formed recycled product.

This accords with the experience of OPA members who have recycled many thousands of tons of oxo-biodegradable plastic over the past 20 years without any adverse effects.

Michael Stephen

Michael Stephen is a lawyer and was a member of the United Kingdom Parliament, where he served on the Environment Select Committee.

When he left Parliament Symphony Environmental Technologies Plc. attracted his attention because of his interest in the environment.

He is now Deputy Chairman of Symphony, which is listed on the AIM market of the London Stock Exchange, and is the founder and Chairman of the Oxo-biodegradable Plastics Association.

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- 7/02/20 – Coronavirus, MPs Letter, Montreal, Australia and the Dominican Republic
- 14/02/20 – Oman, MacArthur Foundation, Stifling Innovation, South Africa and Compostable Plastics
- 24/02/20 – Serbia, India, Pakistan and European Bioplastics
- 03/03/20 – Plastic To Protect Health and Common Sense on Plastic
- 10/03/20 – Plastiphobia, Singapore, Compostable Plastics, Doorknobs and Carbios
- 17/03/20 – Greening our Way to Infection, Defra Warns Against Bioplastics and Montreal

- 24/03/20 – Ditch the Plastic Bag Ban and Inn-Probio

- 01/04/20 – The Come Back of Plastic Bags, Compostable Plastic Not Wanted and EASAC
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Interview with Michael Stephen

- Questions and Answers on OXO-Biodegradability

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