

# Oman, MacArthur Foundation, Stifling Innovation, South Africa and Compostable Plastics

Michael Stephen, an international spokesperson from the plastics industry, shares his thoughts and opinion on important issues impacting the bioplastics industry. Today, Michael writes about Oman, Ellen MacArthur Foundation, Stifling Innovation, Jeffries Financial Group, South Africa and Compostable Plastic.



Michael Stephen

## Oman

I am writing this week's column in Oman. Much impressed by the way the country has modernised during the 40-year reign of the late Sultan Qaboos without losing sight of the centuries-old culture and traditions of its people.

## Ellen Macarthur Foundation

I have notice that people are still using the 2017 report on "oxo-degradable" plastics, which claimed that they simply fragmented into microplastics.

However, having engaged with OPA scientists they no longer say that. They admit in their May 2019 report that “oxo-degradable” (they mean “oxo-biodegradable”) plastics are manufactured so that they can degrade faster than conventional plastics and that they do become biodegradable, but they say that “it is not yet possible accurately to predict the duration of the biodegradation for such plastics.”

For that reason a broad indication only can be given as to timescale. It is however possible to say with certainty that at any given time and place in the open environment an oxo-biodegradable plastic item will become biodegradable significantly more quickly than an ordinary plastic item.

That is the point. – Do we want ordinary plastic which can lie or float around for decades, or oxo-biodegradable plastic which will be recycled back into nature much more quickly? Of course,

we don't want plastic in the sea at all, but that is not the present reality.

## **David Newman**

I read an article by David Newman, the UK lobbyist for the “compostable” plastics industry, in Packaging News on 9th February. I was quite surprised by some of the things he was saying,

I don't know anything about the oxo-degradable plastics industry. I do however know about the oxo-biodegradable plastics industry, and they are certainly not “traders of powders.” The leading company is Symphony Environmental, a British public company with thousands of shareholders, and representatives in 67 countries, which has spent 20 years and millions of dollars creating “masterbatches.” Their scientific adviser for ten years was Professor Gerald Scott, who wrote the scientific textbooks on plastics in the environment.

They have a suite of masterbatches for a wide variety of different applications and conditions, each of which is an intelligent combination of catalyst and stabilising elements. These are added to plastic products at the manufacturing stage at little or no extra cost, so as to cause the plastic to biodegrade if it gets into the open environment much more quickly than it otherwise would – and leaving no fragments or toxic residues.

The EU Single Use Plastics Directive does indeed outlaw the use of powders to convert plastics into fragments, but oxo-biodegradable technology does NOT just create fragments, and nobody would ever have used the technology in the last 20 years in 92 countries if that was all it did.

Mr. Newman is wrong about the USA, and oxo-biodegradable plastics are being used there. I am not aware of any case in the USA where claims of biodegradability for oxo-biodegradable plastics were found to be unsubstantiated. He is confusing this with “enzymatic” plastics, which are a completely different technology. OPA scientists are doubtful that “enzymatic” plastics are biodegradable.

He is also wrong if he is saying that plastics are not made from a by-product of oil and gas which is extracted for fuels and would still be extracted if plastics did not exist. Oxo-biodegradable plastics do not

therefore cause any significant depletion of fossil resources, but bio-based plastics do, when you consider the fossil fuels consumed in the agricultural production and polymerisation process.

With regard to the “compostable” plastics made by his clients, the recently published WRAP report says that 77% of citizens believe that “compostable” plastic is better for the environment than other types of packaging. However, most of them will not have been told that this type of plastic converts rapidly into CO<sub>2</sub> – not into compost – and the last thing the planet needs is more CO<sub>2</sub>.

Also, the only real problem with plastic is that too much of it is getting into the open environment, where it can create microplastics and lie or float around for decades. “Compostable” plastic does nothing to address this problem because it is tested by EN13432 or ASTM D6400 to biodegrade in the special conditions found in an industrial compost facility – if a composter can be found to take it. Many are in fact now rejecting it – see for example the reasons given recently by the composters of Oregon, the City of Exeter, and the Suez waste management company.

The way to address plastics which are still getting into the open environment is to focus on oxo-biodegradable plastic tested to ASTM D6954, which makes the molecular structure dismantle automatically by oxidation and be recycled back into nature by the bacteria if it gets into the open environment. Yes it really does!

Mr. Newman cites against oxo-biodegradable plastic a report by some researchers at Plymouth University, but he should read it more carefully. It is very easy to expose a product under conditions in which it is not likely to perform in a particular timescale, and then declare that it does not. This report has been analysed in detail on the OPA website.

Oxo-biodegradable products from reputable suppliers are tested for degradation, biodegradation, and non-toxicity, using independent laboratories accredited to ISO 17025.

Finally, Mr. Newman refers to a court case in Italy in 2015 but it was not about the testing of oxo-biodegradable plastic. It was an attempt by a large Italian company to put a small Italian company out of business by alleging that they had used a false description in their advertising. The judgement shows no evidence that they had done so, but they were nevertheless convicted. Perhaps that is how they do things in Italy.

## **Stifling Innovation**

Writing in the 1st February edition of *The Spectator*, Matt Ridley attacks the stifling of innovation by the EU, (which is one of the reasons why Britain has terminated its membership). “Vast vested interests” he says “are ranged against innovation in Brussels, where big business and big pressure groups swarm all over the Commission and Parliament.”

A blatant example of this is the EU legislation against “oxo-degradable” plastic referred to in my column of 21st January which was passed without any dossier from the European Chemicals Agency showing any

cause for concern about this type of plastic. Never before has an ECHA investigation been circumvented by legislation.

Ridley continues, “the extreme version of the precautionary principle in the EU is killing innovation – it demands that if a product is not known to be safe then it must be deemed dangerous, even if it is far safer than the existing technology it replaces.” These are the very questions that ECHA exists to investigate.

## **Jeffries Financial Group**

A recent report from the New York based investment bank warns that the world will struggle to recycle 50% of its plastic waste by the end of the decade. That is, argues, despite a rising tide of bans and regulation that will hit companies with a combined market value of \$3.5 trillion.

The bans will not only adversely affect companies and their bottom-lines but will also damage our ability to manage food waste, food-borne disease, and climate change. While the report rightly acknowledges the scale of the problem, it assumes that tighter bans and regulation are inevitable.

They are neither inevitable nor desirable. In fact, they are often based on ‘plastiphobia’, a dogmatic, almost visceral reaction against plastic, which is increasingly forcing businesses into irrational and damaging decisions. According to a survey by the Green Alliance (mentioned in my column on 14th January), major brands are switching away from plastic regardless of the environmental impact of substitute materials, bowing slavishly to mounting pressure from customers.

Some of those customers would do away with plastic, which is “evil and has no place, regardless of any positives it might have in addressing food waste”. Particularly worrying is that the FMCG sector appears to be pandering to this extremist sentiment instead of addressing it head-on, with many supermarkets taking decisions knowing that they could increase rather than reduce environmental burdens.

This is seeing many of them rushing to suboptimal alternatives including paper. The Green Alliance report cautions however, that paper bags have much higher carbon impacts than plastic, and that refillable containers can dramatically reduce the shelf-life of some products.

FMCG, should be reminded of the vast benefits that plastic confers. It is not only the best alternative for protecting food from contamination and preventing food-waste and disease, but also has a much lower global-warming potential than other materials used for packaging (see LCA's cited in the report). The idea that plastic causes a depletion of fossil resources is also unfounded.

Let's not think that recycling is suitable for everything. According to the recycling charity RECOUP “In cases where plastic products are particularly lightweight and contaminated with other materials, the energy and resources used in a recycling process may be more than those required for producing new plastics. In such cases recycling may not be the most environmentally sound option.” It is too costly in financial and environmental terms to collect it, transport it, sort it, bail it, store it, and then reprocess it, – which is why it was being dumped in Malaysia.

When the plastic becomes waste, its calorific value can be used to generate electricity if, instead of being sent to landfill it is sent to modern, non-polluting, thermal-recycling units.

An over-emphasis on recycling targets should not lead us to ignore another urgent problem that will likely persist well into the future. What happens to plastic if it escapes recycling and gets into our oceans and is dispersed on land? The answer can be found in ASTM D6954.

## South Africa

I have noticed a draft “Position-paper” in South Africa. It is presented as an honest attempt to evaluate degradable plastics for the benefit of South Africa’s environment, but it reads more like an attempt to rationalise back from a pre-determined conclusion. There is an analysis of this paper on the OPA website.

## More New About “Compostable” Plastic

Reported in Usinenouvelle.com <https://www.usinenouvelle.com/article/sacs-plastiques-compostables-le-grand-malentendu.N926789> Laure Constans, of the International Centre for Research on Water and the Environment research and expertise centre of Suez (one of Europe’s leading waste-management companies) explained the setbacks he encountered with “compostable” plastic bags in his units for anaerobic digestion of bio-waste and other organic waste, such as sewage sludge.

“After 21 days, they are not really degraded, still less assimilated. Also, they block the screws intended to break them up. Worse, they inhibit microbial activity, thus reducing the production of biogas (methane) intended to be injected into the networks in substitution for fossil natural gas. Finally, their persistence in the compost co-produced by the mesophilic methanisation unit in the liquid channel means that the digestate obtained must be screened to meet acceptable standards for spreading.”

## Earlier Postings in this Column

- 1/ 1/ 20 – [Plastiphobia, Microplastics and A Throw-Away Society](#)
- 7/ 1/ 20 – [Recycling, Lab Testing, Bangladesh and the Right Bioplastic](#)
- 14/1/20 – [Plastiphobia and Bioplastics Definitions](#)
- 21/1/20 – [Composting, the European Union and Unemployment](#)
- 30/1/20 – [Plastiphobia, Malaysia and a Case Against Compostables and Paper](#)
- 7/02/20 – [Coronavirus, MPs Letter, Montreal, Australia and the Dominican Republic](#)

## Interview with Michael Stephen

- [Questions and Answers on OXO-Biodegradability](#)

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