

# Spotlight On Soil

Following a recent article on PAS110, we have a response from the BBIA's David Newman... with many more comments being left online at [www.ciwm-journal.co.uk](http://www.ciwm-journal.co.uk)

## Dear Editor,

I enjoyed reading the article by Paul Bardos, Stephen Wise and Andrew Godley in the Journal's November edition titled, "Where Is PAS110 Going?". I think it is critical for the anaerobic digestion (AD) industry to open this discussion on digestate quality to ensure the long-term viability of digestate use and therefore the sustainability of the cost structure of the UK AD industry within the context of a declining subsidy regime.

The UK situation is quite particular: apart from Sweden where population, organic waste volumes and agricultural practices are quite different, European countries do not allow direct spreading to land of digestate derived from the treatment of household organic waste – agricultural waste digestate is, of course, spread to land throughout all of the EU but generally not unsegregated food waste derived digestate. The UK has allowed a more lax approach that may not, however, fully address concerns regarding airborne emissions, digestate contamination and therefore soil contamination.

The article comprehensively raises the issues surrounding Potential Toxic Elements permitted in the PAS110 and the potential risks to soil. However, it does not address concerns that physical contaminants (PC), particularly plastics, are spread to soil with digestate and the accumulative affects this may be creating to soil quality over a long-term period.

Nor does it address the issues around N-based ground leaching and airborne emissions related to whole digestate stability and spreading practices. I think we should examine these elements much more closely and undertake a comprehensive series of analysis on soil where digestate from AD plants treating food waste has been spread over recent years.

2015 has been the International Year of Soils, though you wouldn't have noticed

this in the UK where attention to soil quality fails to make any political agenda. Yet we in the waste industry have a specific duty to return to soil what constitute clean nutrients and replacement organic matter. We know from experiences across Europe, eg in Italy, Belgium and Holland where digestate is composted before spreading to land that we can achieve a virtually total elimination of physical contaminants.

Italy has achieved such high rates of purity through the drastic reduction of plastics in collection systems for food waste; indeed, since 2010 it has been mandatory there to collect food waste with compostable bags, be they paper or compostable plastic. Many compostable plastics are also independently validated as soil biodegradable and should they inadvertently finish there, pose no risk to soil where they biodegrade naturally and relatively rapidly.

Risk is a factor often considered in the article; PC pose two main risks when applied to land with digestate – a market risk and an environmental risk. Under PAS110:2014 and the quality protocol, it is possible to spread up to 11kg of PC per hectare; 11kg spread over 10,000m<sup>2</sup> does not sound much of a risk, but in reality this equates to about 1,000 carrier bags per hectare. This explains why BBIA is passionate about promoting compostable plastics in food waste collection systems – we see the potential for improvement of many current collection systems on soil quality and have seen positive experiences elsewhere not yet understood in the UK by the AD industry.

Beyond the visible impact, the actual environmental risk of applying non-biodegradable plastics to soil and the impact of their accumulation has not been studied and the particle size of 2mm in PAS100 and PAS110 is such that plastics of these dimension will not block root development. However, it does not take a great understanding of biology or geography to see how plastic



fragments in the soil could end up in the human food chain.

Furthermore, the UK has yet to fully understand the importance of getting clean organic matter back to soil and how we are continually eroding organic carbon – our soils risk becoming sterile and infertile should this trend continue. Digestate brings little organic carbon value to soil; so mixing the digestate with woody matter and composting them together increases the organic carbon being returned to soil, as well as ensuring quality clean nutrients.

I would welcome much further study and discussions on these elements to complement the ongoing activity in regard to PTEs.

**David Newman, managing director of the BBIA (Bio-based and Biodegradable Industries Association)**

*In his letter, David also included a quote from Graziano da Silva, director general of the Food and Agriculture Organisation of the United Nations which I wanted to include, saying: "We need healthy soils to achieve our food security and nutrition goals, to fight climate change and to ensure overall sustainable development."*