**Compostable Bioplastics - the third in our mini-series**

Compostable bags (compostable bioplastic (CBs)) are made from Polylactic acid (PLA) (usually derived from corn). However, similar to Biodegradable Plastics (mini-article two) they will only break down given the correct conditions.

Before we go on, it is necessary to understand a couple of ambiguous terms:

Firstly the term ‘compostable’. To most people the term ‘compostable’ refers to a friendly steaming pile at the end of a garden. But ‘compostable’ can also refer to an industrial composting unit (discussed further down). An industrial compost facility is not your back garden compost pile, unless that is you manage it carefully.

Secondly - the clarification of the term ‘composting’ – full decomposition means complete ‘conversion of the bag into simple substances such as carbon. dioxide and water’ (Source OECD) that can be re-used by microorganisms like bacteria and fungi.

So you see there is a risk that consumers might misunderstand terminology and regulations regarding bags that are labelled ‘compostable’. This is because there is a problem if they are disposed of in the wrong conditions (mini-article one).

It is worth remembering that:

• Unlike SUP and BPs, when CBs decompose (and release the carbon locked in by the plant matter as co2) they are almost carbon zero (not taking into account the manufacturing processes used to create them etc).

• CBs do not break down into micro particles of plastic (but any ‘plastic type bag’ can cause an entanglement danger to marine life).

• Unless ‘compostable’ bags of dog poop are collected separately from Single Use Plastic (SUP) and Biodegradable Plastics (BP) and taken to an industrial compost facility, they will end up in landfill or go to an incinerator.

**So what is Industrial Composting?**

Compared with home composting, an industrial composting facility operates at around 60 °C or above – when you have those high temperatures along with moisture and oxygen, compostable plastics disappear quite quickly.

Elizabeth Royte, writing in Smithsonian, said ‘PLA (Polylactic acid) may well break down into its constituent parts (carbon dioxide and water) within three months in a “controlled composting environment,” that is, an industrial composting facility heated to 140 degrees Fahrenheit and fed a steady diet of digestive microbes. But it will take far longer in a compost bin or in a landfill packed so tightly that no light and little oxygen are available to assist in the process.’

Further, In the Truth About Biosplastics Renee Cho wrote: “…as a result, bioplastics often end up in landfills where, deprived of oxygen, they may release methane, a greenhouse gas 23 times more potent than carbon dioxide. “

**Home Composting**

Compost, provides an ideal environment for biodegradation. Compost contains a diverse range of organic materials that support the growth of many different varieties of organisms. There is a huge diversity of microorganisms that exist in compost. These include bacteria, fungi and invertebrates that can digest a wide range of organic materials.

There are bags that are designed to meet the European home compost standards. These should completely degrade in 90 days in a compost bin that maintains a minimum temperature of 45°C. Some are claimed to degrade in as little as 10-45 days depending the composting system used.

Two certification organisations that offer specific “home compostability” certification programmes are Din Certco and Vinçotte. Check for the words 'Home composting' and the logos (EU certification of bags are EN 13432 and the USA is ASTM D640.)

Its not advisable to use compost containing dog waste near to or on food crops.

In the next mini-article we will look at the different types of home composting systems available.