

Sustainability – Biomass – What is it???

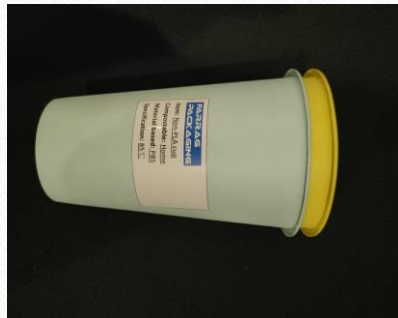
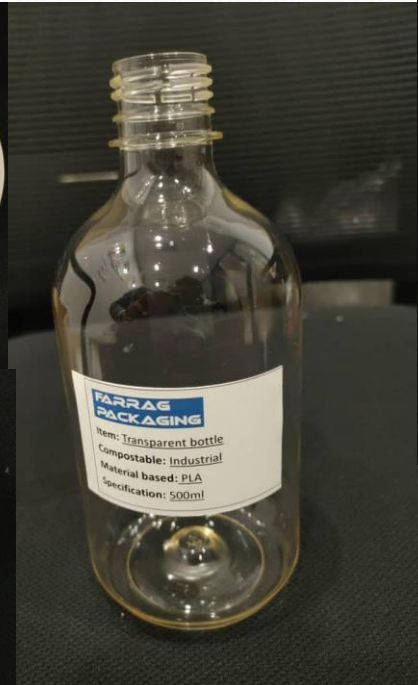
- Biomass product is a new non fossil based material derived from plants grown in the ground.
- Biomass material can be supplied in transparent or opaque material
- We are currently supporting the development of this new eco material which is processed from the plants into pellets
- We are confident that we can supply specific biomass recipes to suit varying methods of packaging component manufacturing i.e Injection moulding/extrusion ,extrusion blow moulding ,thermo forming etc.We have a partner who specialises in providing biomass recipes to suit the application required.
- Biomass material is fully certified for use with food and drinks also cosmetics.
- The benefit of biomass is that the material fully decomposes in the waste landfill site within 90 days



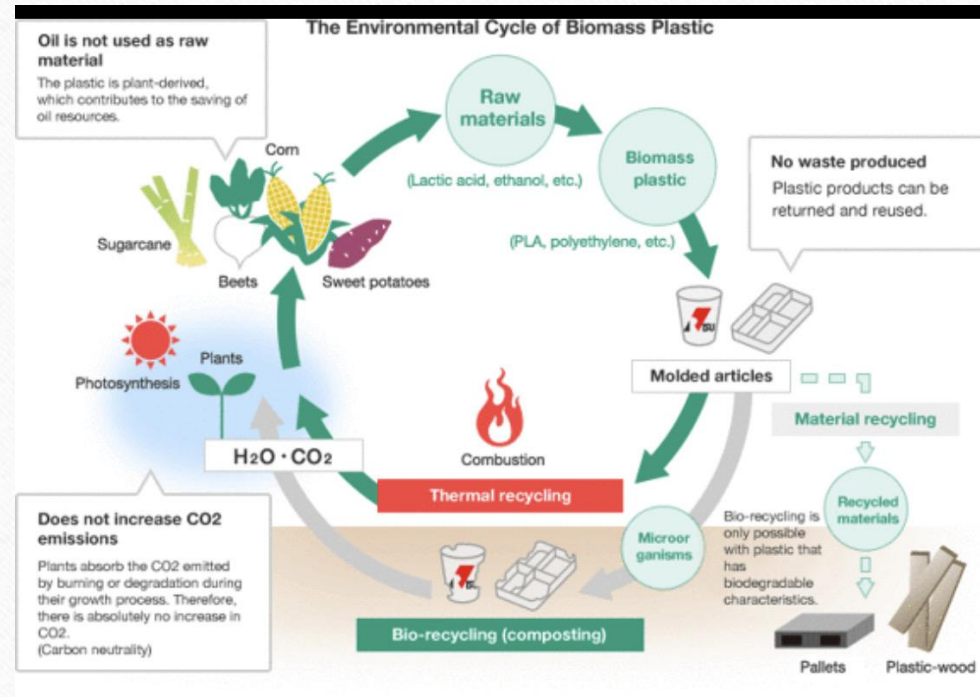
Biomass Applications.....

- Bottles, closures ,pots ,jars ,trays ,shrink wrap, plastic liners, can be manufactured with Biomass..... NOW!!
- It is suitable for high/low temperature beta version will be available Spring can fill to 100c use conventional molds, Melt flow is same as current applications.
- Testing data can be provided with our partners and under a NDA.
- Naturally, we recommend that products are fully tested with the Biomass material before going to market.
- Alternatively, the supply of raw material direct to the manufacturer is an option.

Biomass products



Biomass – Life Cycle



Biomass Caps

- 100% PLA made on injection machine electric hot runner .
- Next stage use MFI and same mould same cycle .



Transparent Biomass

This is a Biomass transparent container manufactured from a 'pilot' mould

Fully certified material for food use

Samples are available for evaluation



FARRAG
PACKAGING

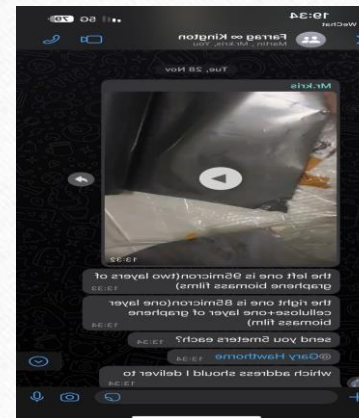


Biomass Pressurised Container in development!

- PLA
- Graphene and PLA

BOV

- Development of a structure to replace aluminium bov.
- Compostable alternative.
- Blown film already produced can be laminated with plant based adhesive structures, already used by airline for cups etc.



Spring replacement

- UK alternative nylon and Graphene recovered from the ocean.
- Can be infra red sorted at waste site, available in the EU.
- A spring can be manufactured using graphene to increase the strength.
- Currently being used in lotion pumps under a NDA, 500 impressions.
- Would be ideal for dispensing under pressure.
- Farrag don't make springs but we can develop subject to investment.

Future Packaging

- Single material pumps.
- Single material sealed pressurised container possible.
- Refillable aerosol is possible using a bag screw on twist off, this has been done before with ref pet, I remember in the 1980s Holland etc Coke and InBev did this.
- Costs as current materials and eco.



Plastic springs

Mission Statement

- **Let's be part of a 'sustainable tomorrow'**

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