

# Innovative Uses Of BioPlastics



# Convex Plastics

- Hamilton based Flexible Packaging Company
- Staff of 130, operating for 35 years
- Flexible packaging including rolls & bags
- Design, Extrude, Print, Lamination, Slit & Convert
- 1996 made our first compostable cornstarch product GreenSACK™
- 2010 launched “econic™” compostable packaging for coffee.



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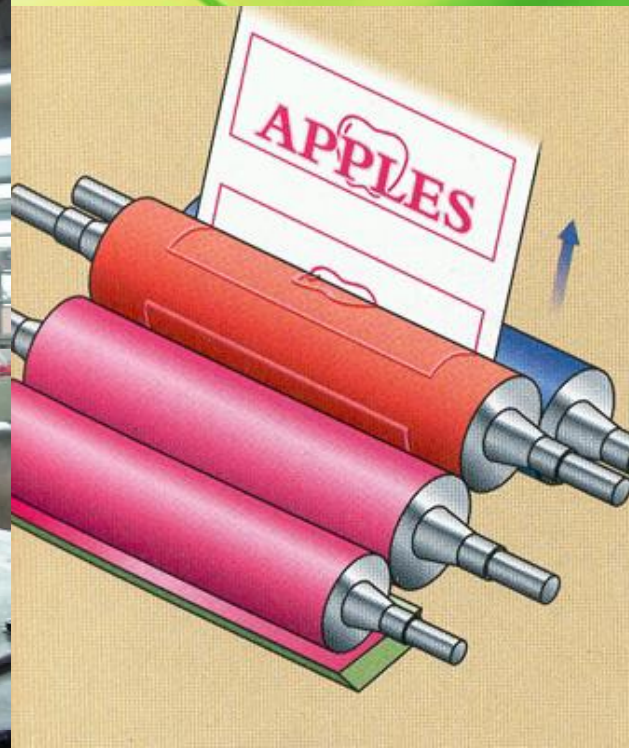
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# Manufacturing

Blown film  
Extrusion



Printing



Conversion



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# Manufacturing

Blown film extrusion

- Melt temperature
- Melt flow index (fluidity)
- Shear / Heat sensitivity
- Extrudability



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# Environmental Strategies

- Biodegradable
- Compostable
- Sustainable/Renewable
- Degradable
- Recyclable
- Food Miles
- Carbon Foot-print
- Water Foot-print
- Bigfoot – print.



# Options

- Compostable
- Sustainable/Renewable
- Degradable
- Recyclable
- Carbon Foot-print
- Less is more



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# Polymers

- Cellulose
  - PLA
  - TPS
  - PHA
  - PBAT
  - What to choose.?
- PHB  
PBS  
PCL

# Compostable

- Compostable EN13432 / ASTM6400
- Food Waste collection

**GreensACK™**



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# Compostable

**econic™**

*High Barrier Compostable Packaging*

- Niche applications
- <1 W.V.T.R / O.T.R rates



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# Renewable

- Sustainable with lower Carbon foot-print
- Blending Renewable & Fossil fuel – Composites.
- Lower GHG emissions
- Less price impact
- Nestle “biohybrid” slider bag
- 20% renewable with 17% lower GHG emissions vs current.



# Degradable

- Oil based plastics
- Pro-degradant added to plastic
- Fragments at predetermined rate
- Requires UV, Heat, Oxygen
  
- Oxo-camp vs Hydro-camp
  
- Half way house - not compostable
- Fragmentation in landfill questionable.

# Recyclable

- 1 to 7
- Collection mechanisms
- Recycling facilities.
  
- Incorporate PCW eg HDPE milk bottles
- Incorporate in-house waste eg Rubbish bags
  
- Reduce laminates of plastic to paper and foil.

# Less is More

- Less plastic used, better environmental position



- eg bucket to bag, material saving

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# Claims

- Greenwashing
- Commerce Commission
- Oxo-degradable claiming compostability EN13432
- Story to educate consumers
- Standard, Disposal Environment, Timeframe, Temperatures.
- Facts and Evidence

# Further Information

- ReNew subscription newsletter.
- GreenSACK™ [www.convexdirect.co.nz](http://www.convexdirect.co.nz)
- Econic™ [www.convex.co.nz](http://www.convex.co.nz)

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