



Food Innovation Trends and Developments

Pilot Production Facilities
for Innovative
New Zealand Processed Foods

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What's Hot?

Sustainability: A key opportunity for US food packaging firms

Environmental sustainability offers a key opportunity for the United States food packaging sector, a US executive told delegates at a seminar at the Interpack trade event in Dusseldorf, Germany.

Novamont forms US subsidiary, eyes major expansion

Novamont announced it has launched a new bioplastics company in the US as part of its strategy to expand in North America.

FDA Approves Mirel Bioplastic for Food Packaging, Utensils

The US Food and Drug Administration has approved two forms of Mirel bioplastic, a material made from corn sugar, for use in products that come into contact with food.

Whey proteins used to create biodegradable packaging

Whey produced by the dairy industry could have added value as a prime ingredient in the next wave of biodegradable packaging and other materials, according to new research.

Heinz and Coca-Cola packaging deal 'paving the way for industry-wide collaboration'

Coca-Cola and Heinz have announced what they believe is a trailblazing packaging collaboration that will have global eco-implications.



What's Hot?



Drink cups made from
NatureWorks® PLA ©
Huhtamaki



Swiss chocolate corn
starch-based Plantic tray
© Marks&Spencer



Biodegradable Ecovio in
Aldi-Bags



What's Hot?





What's Not?

Coca-Cola says biodegradable packaging 'not a viable option'

Coca-Cola said earlier this month that biodegradable packaging is “simply not a viable option” but a new report suggests that other smaller drinks companies are beginning to take an interest.



Report outlines compostable packaging challenges

Limited infrastructure and a lack of consistent regulation between states are just two of several unresolved challenges to making compostable packaging a reality, said a report from the Sustainable Packaging Coalition (SPC).

Frito Lay withdraws eco SunChips bags and goes back to lab

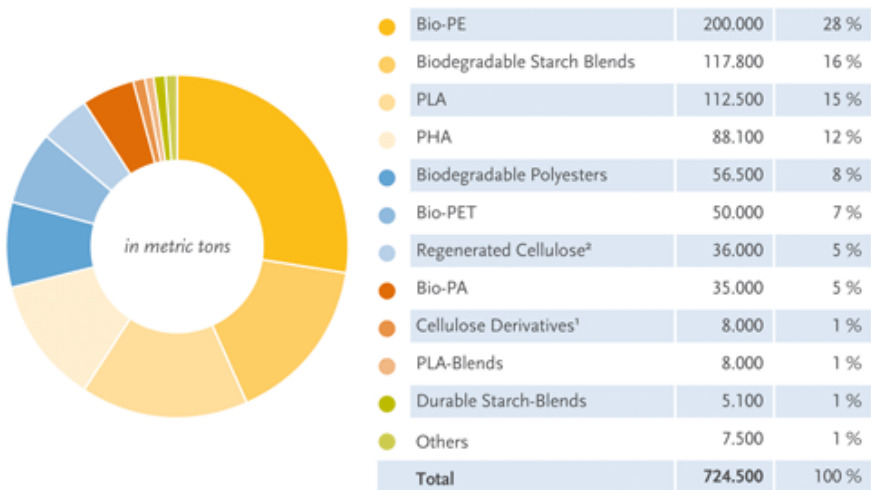
Snack maker Frito Lay has reverted to the original non-biodegradable material for five of its six Sunchips brand bags after consumer feedback indicated its new 100 per cent plant-based polylactic acid (PLA) packaging was too noisy.



Market Development

- Biodegradable bioplastics materials and products have been on the European market for more than two decades. These products are largely compostable biowaste bags and loose fill. The market for packaging film has developed dynamically since around 2002, initially for organic food products, and subsequently for many other products.

Biopolymers production capacity 2010 by type



¹ only cellulose ester | ² only hydrated cellulose foils

Source: European Bioplastics | University of Applied Sciences and Arts Hannover

bioplastics -FI- Fachhochschule Hannover
University of Applied Sciences and Arts



Current Market

- The current market is characterized by high growth and strong diversification. There is a multitude of applications ranging from beverage bottles in the packaging segment to keyboards in the consumer electronics segment. Depending on the application different types of bioplastics are processed in these products:
 - biodegradable polymers such as starch-based plastics or PHA.
 - biobased, non-biodegradable commodity plastics such as biobased PE and PET.
- With a growing numbers of materials, applications and products, the number of manufacturers, converters and end-users increases steadily. Significant financial investments have been made into production and marketing to guide and accompany this development. Legal framework conditions provide incentives for the use of bioplastics in several countries worldwide, providing stimulus to the market.



Rationale for Food Innovation Centres

- Lack of a publicly available innovation facility leaves an important gap in New Product Development (NPD)
- Requires access to a commercial pilot plant capable of producing FMCG products in batches larger than 100kg
- The Auckland Food Innovation Centre is being developed in response to a need from companies in the food and beverage sector who wish to commercialise and pre-market pilot FMCG products
- Concept development was led by Professor Ray Winger of Massey University, progressed by a working group led by AucklandPlus with the support of Enterprising Manukau (now combined as ATEED)



Rationale





Market need

Market need

- Access to equipment
- Attracting good staff
- Access to capital
- Access to good advice / mentors
- Export compliance
- Product trials
- Risk of capital outlay
- International accreditation
 - International customers demand accreditation
 - Can be expensive and complex step



The NZFIA offer

The innovation centre will act as an accredited manufacturer for small scale “commercial” runs

- Fit-out to food safe standards
- GMP operation
- RMP accreditation for completed new products
- Modular system plus partnership approach to regulators, consultants, research and development providers
- Access to accreditation expertise and documentation



The role of food innovation facilities

- Open access pilot facilities to reduce costs and risks of new product development, particularly for SMEs
- Build on existing regional centres of higher value activities (clustering)
- Create high interaction/high touch between industry players and with science providers
- Facilitate co-ordination and knowledge sharing between regional hubs e.g. common services (where practical)
- Create links between regional industry players and centres of research expertise
- Create scale and hence increased attractiveness and capability
- Potentially act as international deal facilitators for industry, creating more business for hubs
- NZFIN Ltd = NZ Inc approach



Why Manukau

- Our connectedness with the rest of the world is mediated by Auckland
- Facilitate growth of Auckland as our only centre of agglomeration (high productivity, high innovation)
- Maximise the connectedness between the rest of New Zealand and Auckland



Bridging the innovation gap

- The Manukau facility will provide the capability to produce pilot scale commercial batch sizes (250-500kg per day)
- Lowers the hurdle for development of 'value-added foods'
- Networking with the technology and knowhow of other NZFIN innovation hubs
- Food Industry Support
 - Food industry & networks – advisory support
 - Major supermarket chain – market testing support
- In keeping with Objective Five of the Auckland Metro plan 'to develop a highly skilled workforce' and support the future growth of the F&B industry, NZFIA will:
 - Be available to tertiary students
 - Offer industry workers advanced equipment and process training
- Auckland Food Bowl (AFB) will be the 'brand' for any Auckland regional activity focusing on food innovation and commercialisation



Funding and support

- AucklandPlus and Enterprising Manukau were key in bridging the gap between private enterprise and government to secure funding
- Funding
 - The Crown (MED)
 - Manukau City Council (via Enterprising Manukau)
 - Massey University
 - Auckland International Airport
 - Food Industry Support
 - Food industry & networks – advisory support
 - Major supermarket chain – market testing support



Location and facilities

- Located on Auckland Airport land at Manukau
 - Local catchment of 1043 food production companies
 - Within 15km of approx. 85% of Auckland's food manufacturing industry
- Plant contains seven separate and fully confidential modules
 - Open 24/7
 - World-class facilities with flexibility to suit client needs in cost effective manner
 - All IP remains with the client

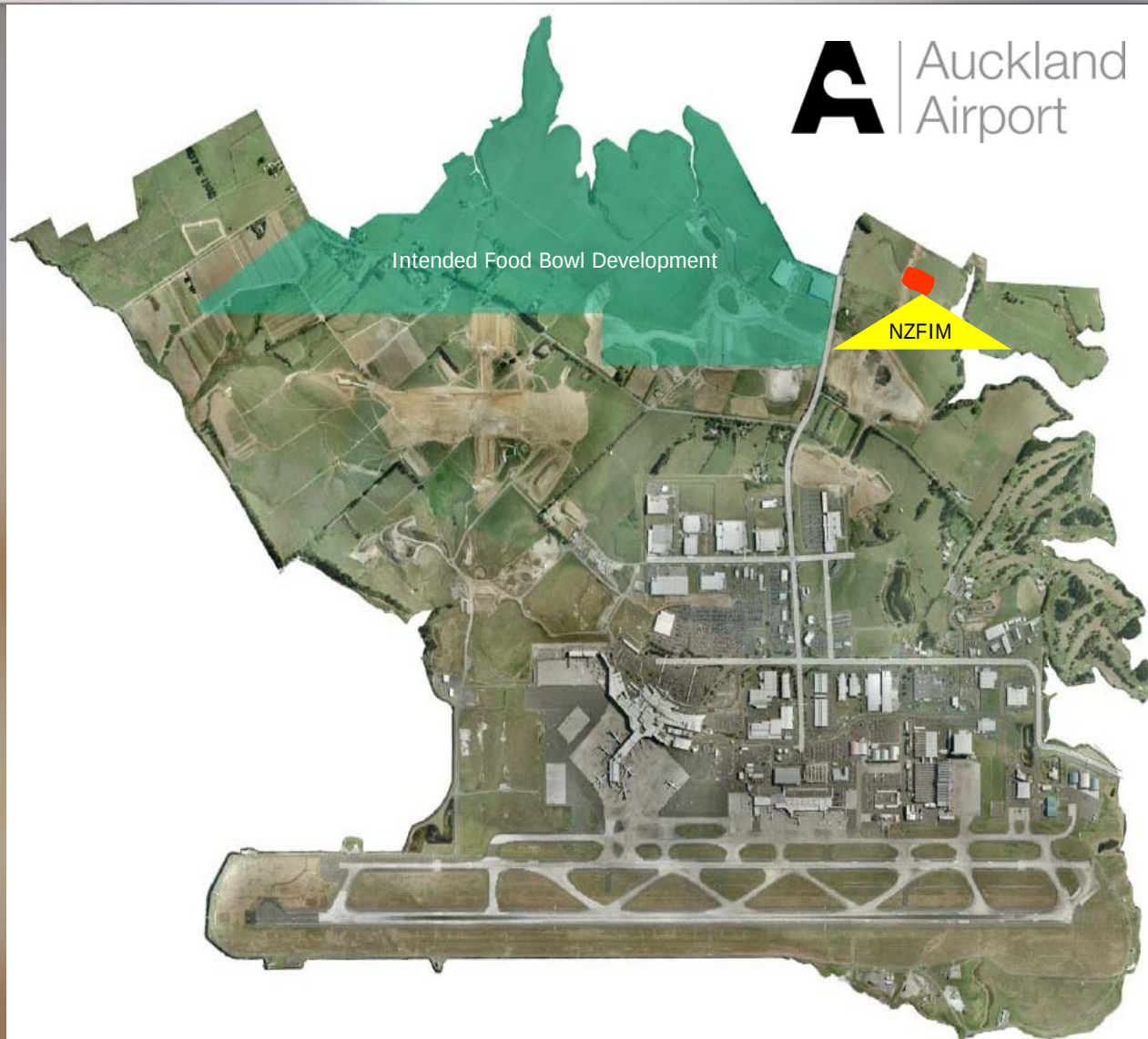


The Auckland Food Bowl

- Comprises:
 - 3 relevant CRIs
 - 3 Universities and 2 Polytechnics
 - Network of freelance food technology consultants
 - More than 50 equipment and packaging suppliers
 - Majority of NZ's food ingredient suppliers
 - Major distribution hub – land, sea and air transport
 - AsureQuality headquarters (certification for export)
 - NZ's largest and most multicultural domestic FMCG market
 - Industry Sector Network



NZFIM and the Auckland Food Bowl





Manukau Food Innovation Centre





Leading edge food innovation technologies

7 Distinct Red-line Process Halls

- Cereal extrusion & milling / blending
- Aseptic UHT/ beverage filling
- Retorting and general purpose processing
- High pressure (cold) pasteurisation
- Freeze drying
- Microwave thawing
- Production kitchen



Leading edge food innovation

UHT / Aseptic, Cold-Fill Technology





Leading edge food innovation

High Pressure Pasteurisation (HPP)

- High pressure pasteurisation on pre-packaged product
- Blanching and controlled chilling for cook/chill production
- Controlled atmosphere packing
- Safer food, fresher food
- More natural, better tasting, longer lasting food





Leading edge food innovation

Twin screw extrusion milling / blending



- Direct expanded cereals covering a large variety of recipes and shapes:
 - Yellow or white corn, wheat, rice, wheat barley, oat flour or grits or multigrain
 - 3D shapes (animals) and typical shapes as Balls, Stars, Cups, Loops, Hoops, Animals, Bran Sticks, Balls Conglomerate.
 - Flavours and colours (Chocolate, honey , fruits...) are also generally included in the recipe.
 - Bi-colour, bi-texture and filled products



Leading edge food innovation

Retort and General Purpose Process Facility

- General consumer goods, including cans, retort pouches, stand-up pouches, pottles, jars etc
- Bar extruder able to extrude multifaceted biscuits, health bars and novelty items, with capacity to bake the same
- General purpose food processing, with equipment available to mix, emulsify, heat, cool, separate etc as required





Leading edge food innovation

Freeze Drying

- Product dried under sub zero temperatures to retain product integrity and/or specified product qualities such as flavour and colour.





Leading edge food innovation Packaging Capability

Thermoformer: Multivac R 145

- Set up for flexible and semi-rigid packs
- Dies for 6 packaging options
- Alternate dies available through Multivac
- Supported by full service

Application:

Variety of packs suited to HPP, as well as modified atmosphere, cook chill etc

Bottle Filling (off Aseptic Filling Line)

- 250 and 500ml bottles
- Hot and cold fill capability



Leading edge food innovation

Packaging Capability

Filling of dry products

- Filling of dry products including product from extruder, dried beverages, powders blends etc
- Bulk Filler Station
- Application
- Multiwall Bags (10 to 15 Kg)

Fill Form and Seal

Application:

- Filling of sealed packs 200g to 1 Kg

Flow Wrap Machine: Accolade Packaging

- Machine to have wide jaws, gas flush, ink jet coding. Set up for wet processing.

Application

- Over wrap trays
- Snacks (e.g. health bars, biscuits)



Leading edge food innovation

Packaging Capability

Bottle/jar filler: Hunter single head filler, set over conveyor to enable automatic filling.

Application:

- Filling bottles, cans, jars and pottles
- Unit supported by screw cap closure, can seamer, pottle sealer.

Carton Sealing: (RML Carton Gluing Line)

Application: Sealing of retail cartons

- Cereal Packs
- Dry Goods etc



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Ready for Business!

