PROPUESTAS PARA LA ALIMENTACION DEL FUTURO
SUGGESTIONS FOR THE FOOD OF THE FUTURE

VIII SYMPOSIUM INTERNACIONAL SOBRE TECNOLOGÍAS ALIMENTARIAS
8th FOOD TECHNOLOGY INTERNATIONAL SYMPOSIUM

Eco-Innovation: sustainable trends in plastic packaging

Eco-Innovacion: tendencias sostenibles en envases plásticos

Cristina Monge Frontiñan – Secretaria General AVEP (Asociación Valenciana de Empresarios de Plásticos)

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VIII INTERNATIONAL SIMPOSIUM ON FOOD TECHNOLOGIES

TOPICS

MAIN TRENDS ON SUSTAINABLE PLASTIC PACKAGING

CURRENT LIMITATIONS AND MARKET PERCEPTION

FOCUS ON RECYCLED/RECICLABILITY

"Sustainable packaging at the forefront of businesses"

Waste reduction

- Use a % of recycled plastic (PET,..)
- Avoid multimaterial slides to improve end of use recyclability
- Ecodisign to improve postconsume treatment
- Reduce Carbon Footprint

Current limits to face

Control of contamination
Restrictions for food contact
Keep funtional barriers
Improve the packaging collection systems (post consume)
Localised collection systems infrastructures constraints

Some examples….

Banus Project – 3 case studies have been carried out including recicled material . 2 for plastic: Flexible multilayer multimaterial packaging and Semi-rigid multilayer plastic packaging (termoformed trays). Very possitive LCA results have been achived. Not so possitive results in terms of odour and color control.

Limitations

Set-off effect from the virgin to recicled side of the sheet
Migration of contaminants problems in co-extrusion process
Solvent coatings limitations when used as funtional barriers

More info in Banus Best Practice Guide

BANUS

DESAROLLO DE BARRERAS FUNCIONALES PARA EL USO DE MATERIALES RECICLADOS EN ENVASES MULTICAPA PARA ALIMENTACIÓN.

El propósito del proyecto BANUS es desarrollar nuevas estructuras multicapa para aplicaciones de envasado de alimentos con el fin de evaluar sus propiedades como barrera funcional, abriendo así nuevos mercados para las empresas de reciclaje en Europa. Teniendo en cuenta que el objetivo principal del proyecto es garantizar la idoneidad de las capas de barrera desarrolladas, es necesario comprobar que, independientemente de la calidad del material reciclado utilizado, la barrera funcional es capaz de prevenir cualquier migración de contaminantes a los alimentos.

El gran reto de BANUS es poder garantizar la seguridad alimentaria cuando se usen materiales reciclados (plástico y papel), provenientes de procesos de reciclado no autorizados, en estructuras de envases alimentarios.

Biobased packaging solutions

The goal is to reduce the dependence of raw material being a limited source. On the other hand the goal is also attend a social demand that could be developed as a differentiation strategy.

Current limits to face

Material use versus food and feed
To improve mechanical, thermal and barrier properties
Reach the thermal stability needed for the production (particularly in thermoforming)

Trends

Future developments through oxigen scavengers, active agents in micro capsules
Identification of natural barriers such us wheylayer or water-soluble starch
New biobased materials development: Cellulosic ethanol, PLA, PHA, PTMT… such as NatureWorks, Ingeo™

Some examples 2016 ….

Rodenburg (The Netherlands) with Taghleef Industries and Mars

Candybar-wrapper made from (waste potato) starch based film

In 2010, Mars Chocolate Europe and Eurasia had a vision to switch to a bio-based packaging material that did not have a higher carbon footprint than the existing package for its Mars and Snickers chocolate products. Mars wanted to ensure there was economics of scale that would make the material affordable.

The type of bioplastics that Mars was looking for was not available in the market. "The focus was on using a packaging material that is sustainable and uses 2nd generation feedstock," explained Thijs Rodenburg, CEO of Rodenburg Biopolymers. "Biodegradability was a packaging side-effect for Mars which didn't consider it highly important because the company was concerned consumers might not understand what it (biodegradability) means; Mars didn't want consumers thinking the packaging waste would just anyhow biodegrade and hence can be casually thrown into the environment."

The project started in 2012, taking almost four years to develop the starch compound, run packaging production trials, and conduct consumer feedback research.

The starch compound for the packaging material consists mainly of starch derived from potato cutting waste – which doesn't compete with food or animal feedstock - and some PLA. Taghleef manufactured the film on an existing BOPP, while Mondi printed the packaging; it took four production trials before an acceptable packaging film was manufactured.

Chocolate is not one of the easiest products to package in terms of smell and taste preservation and sensitivity, said Rodenburg, but this new starch-based packaging material fulfils the product protection requirements.

www.biopolymers.nl

www.mars.com

www.ti-films.com/en/nativia/products

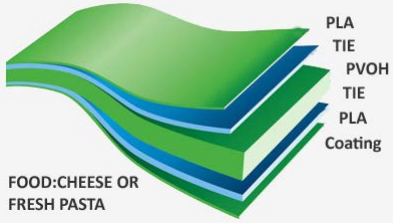
NATIVIA®

BoPLA films

Potato cutting waste

Another company, **Emerald Packaging**, a US–based flexible packaging converter, recently launched their new potato bag partly made out of potato starch

!! Multilayer monomaterial recicled solutions Vs biodegradable multimaterial multilayer solutions!!!



Added functional value for packaging

Add value can be long shelf life without the use of preservatives (***Modified Atmosphere Packaging***, also called ***MAP)*** but also supply information through the packaging to know about the temperature, "best before" date,.. And we can not forget to wide application such as heat resistance to keep using the packaging while heating the food.

Long shelf life are linked to a high demand regarding products exports, convenience and ready meals and smaller portions products.

Some solutions focused for instance in color change to supply information about temperature are already on the market. But some very new approaches like edible packaging are getting on trend.

Current limits to face

Most important limit knowadays is the price

Some examples 2016 ….

Nuevos envases espumados sostenibles y resistentes al microondas

High properties PP foam trays

AIMPLAS, Instituto Tecnológico del Plástico, y la empresa jienense BANDESUR trabajan en un proyecto para el desarrollo de **envases sostenibles** financiado por el Ministerio de Economía y Competitividad dentro de la convocatoria Retos- Colaboración 2015 que permitirá el lanzamiento de dos nuevas gamas de producto al mercado: por una parte unas innovadoras bandejas de polipropileno resistentes al calor y aptas para microondas, y por otra unas bandejas de PLA espumado biodegradables y compostables.

GOBIERNO DE ESPAÑA · MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD · SECRETARÍA DE ESTADO DE INVESTIGACIÓN, DESARROLLO E INNOVACIÓN

Con una duración de 24 meses, el proyecto tiene como objetivo elevar la competitividad de BANDESUR, una empresa ubicada en Alcalá la Real (Jaén) especializada en la fabricación de bandejas de espuma de poliestireno para el sector de la alimentación. Por una parte, se trabaja en el desarrollo de una nueva generación de **bandejas espumadas de polipropileno** de altas prestaciones. Gracias a su **resistencia al calentamiento por microondas**, esta nueva gama de producto permitirá a BANDESUR entrar en un mercado como es el de la comida preparada de IV y V gama. Se trata además de un producto que mejora las prestaciones de la oferta existente en el mercado a través de la sostenibilidad, ya que al tratarse de un material espumado es mucho más ligero que los convencionales.

Por otra parte, el proyecto supone el desarrollo de **envases sostenibles** para comida fresca. Se trata de bandejas fabricadas a partir de PLA espumado, con lo que además de reducir el peso de otros productos existentes en el mercado se lograría un **envase biodegradable y compostable** que permitiría a BANDESUR diversificara su negocio geográficamente.

Ooho edible water bottle
Seaweed spherification

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