Work Package 8 (WP8)

Task 8.9 Training

Cristina Fernandez - IRIS

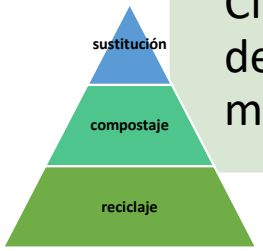
Wedneday 15th of April 2021 - Online

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No. **720719**.

Se necesitan 2 tipos de innovación para lograr una economía circular….

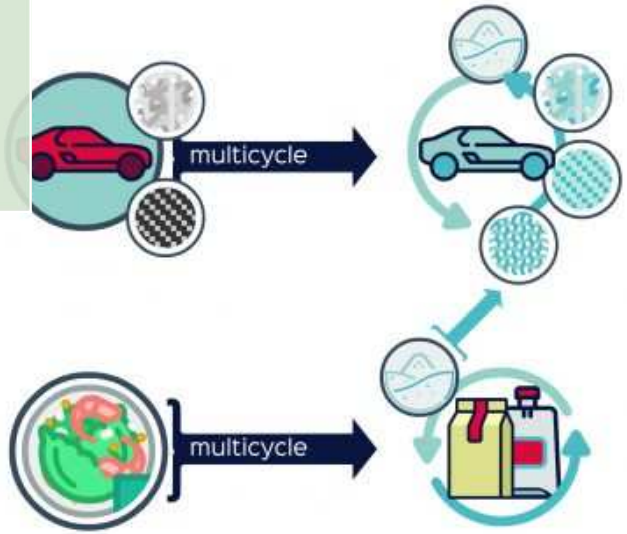
Innovación en el origen

- Eliminación
- Reutilización
- Circulación de materiales



Innovación al final de la cadena

- recolección
- clasificación



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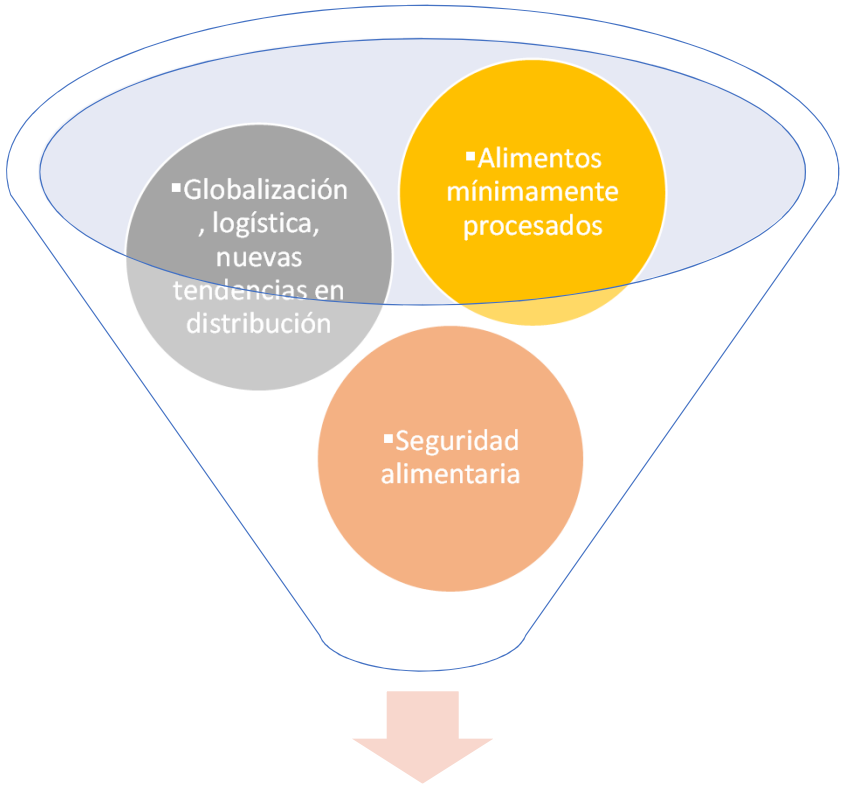
Envase activo en la indústria alimentaria



▪Envase activo para aumentar la vida útil de los productos de consumo

Materiales activos e inteligentes. Conceptos. REGLAMENTO CE 450/2009

1. Materiales y objetos activos en contacto con alimentos:
   - Transmiten sustancias a los alimentos envasados o a su entorno
   - Absorben sustancias de los alimentos envasados o del entorno

2. Materiales y objetos inteligentes en contacto con alimentos
   - Controlan el estado de los alimentos o el entorno de éstos

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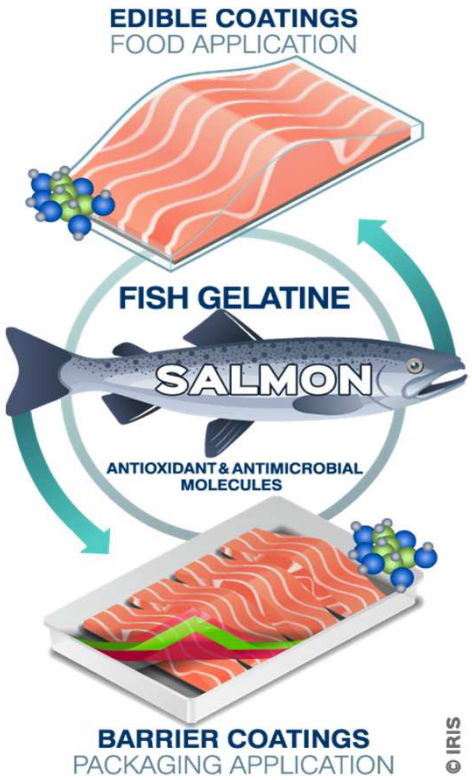
Success case studies
Dafia project

Desarrollar recubrimientos antioxidantes y antimicrobianos para envases activos que mejoren la calidad del producto y al mismo tiempo con más opciones sostenibles para el final de la vida útil



Material Utilizado:

- Principios bioactivos
- Excipientes:
  - Plastificante
  - Matriz polimérica

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Success case studies
RefuCoat project

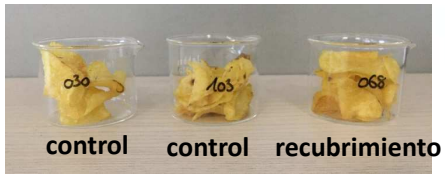
Desarrollar recubrimientos antioxidantes y antimicrobianos para envases activos que mejoren la calidad del producto y al mismo tiempo con más opciones sostenibles para el final de la vida útil

BioPE con recubrimiento

Sodium Alginate (SA) + EO encapsulated Vs. SA + BHT

↓lipid oxidation

↑sensory preference



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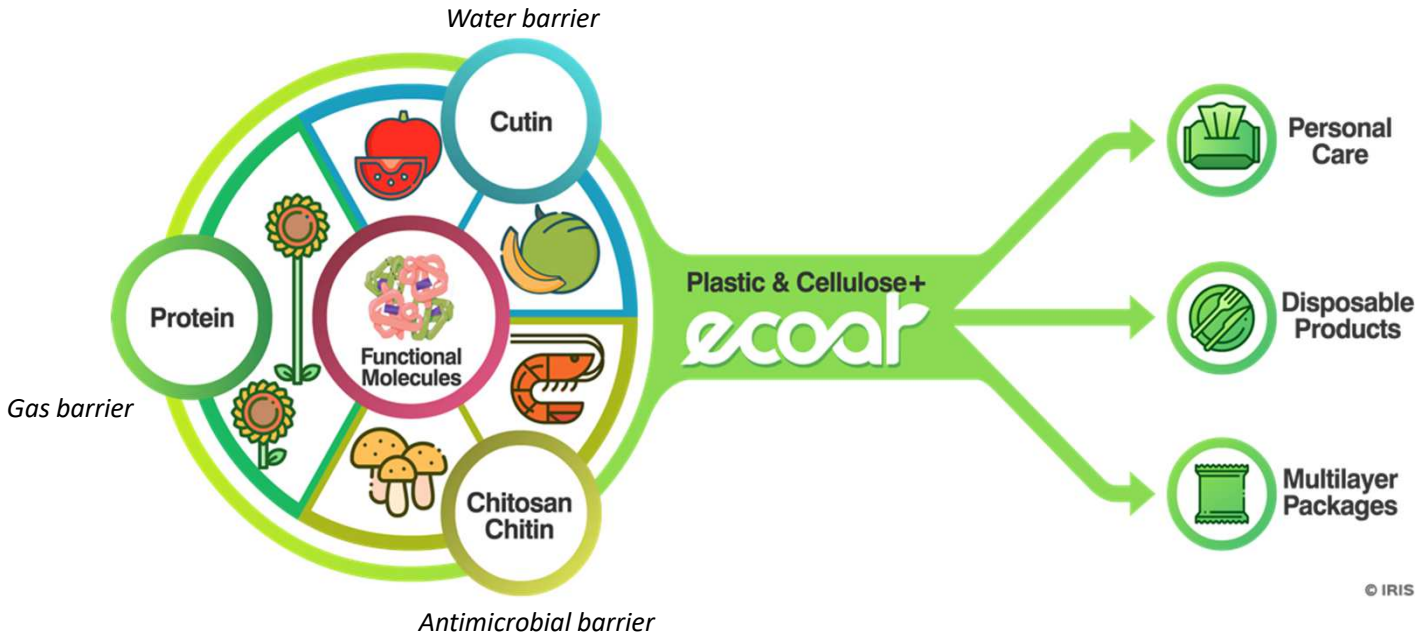
Success case studies
Ecofunco project

Desarrollar recubrimientos antioxidantes y antimicrobianos para envases activos que mejoren la calidad del producto y al mismo tiempo con más opciones sostenibles para el final de la vida útil



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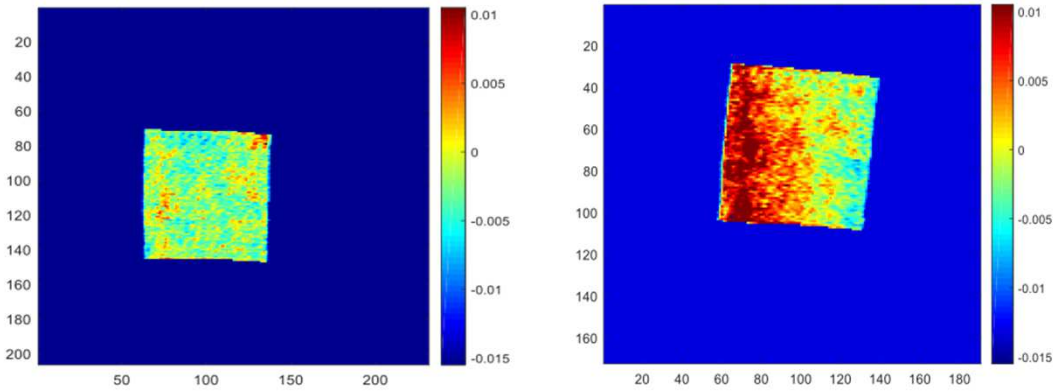
Success case studies
Ecofunco project

Sistema de monitoreo HSI (Hyperspectral scanning imaging) en IRIS Technology Solutions



Distribución de los bioactivos monitorizados por HSI (izquierda: sustrato control; derecha: sustrato impregnado con el material bioactivo)

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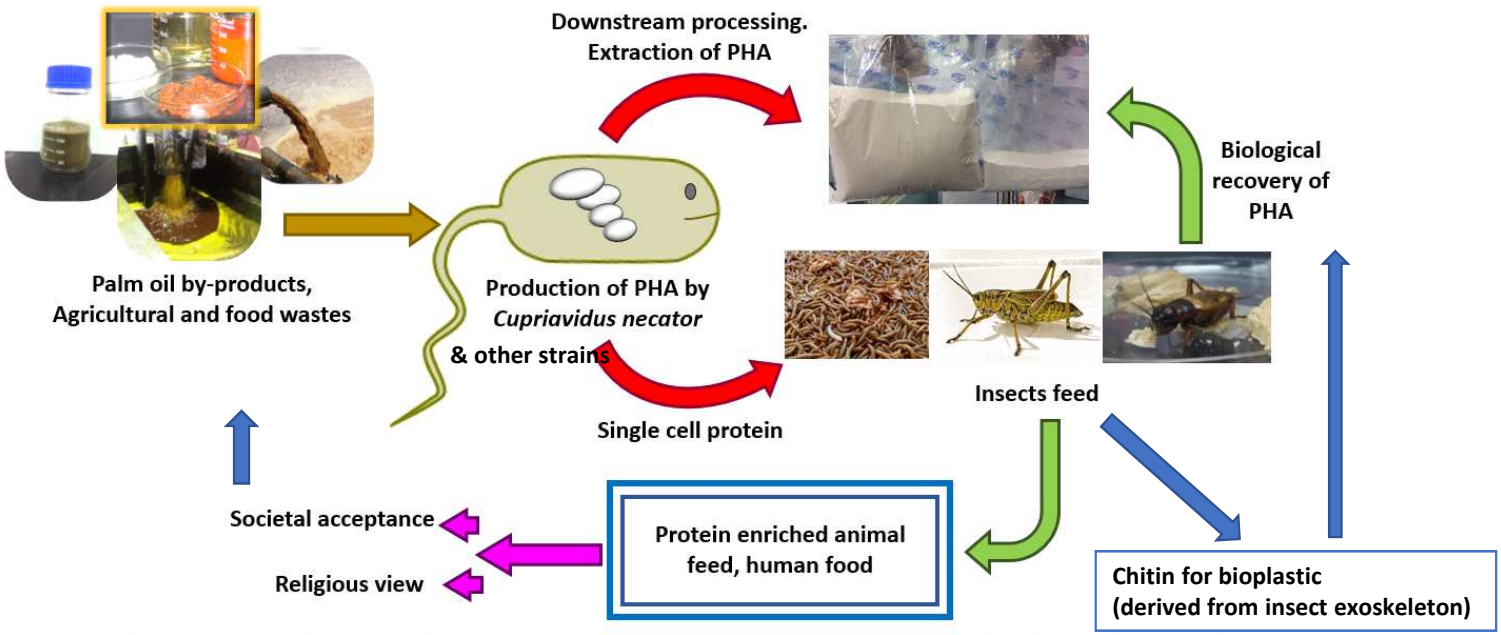
¿Future success case studies?
Recover project - idea



The role of *Cupriavidus necator* as PHA producer and single cell protein

Chee, J.Y., Lakshmanan, M., Jeepery, I.F., Hairudin, N.H.M. and Sudesh, K., 2019. The potential application of Cupriavidus necator as polyhydroxyalkanoates producer and single cell protein: A review on scientific, cultural and religious perspectives. Applied Food Biotechnology, 6(1), pp.19-34.

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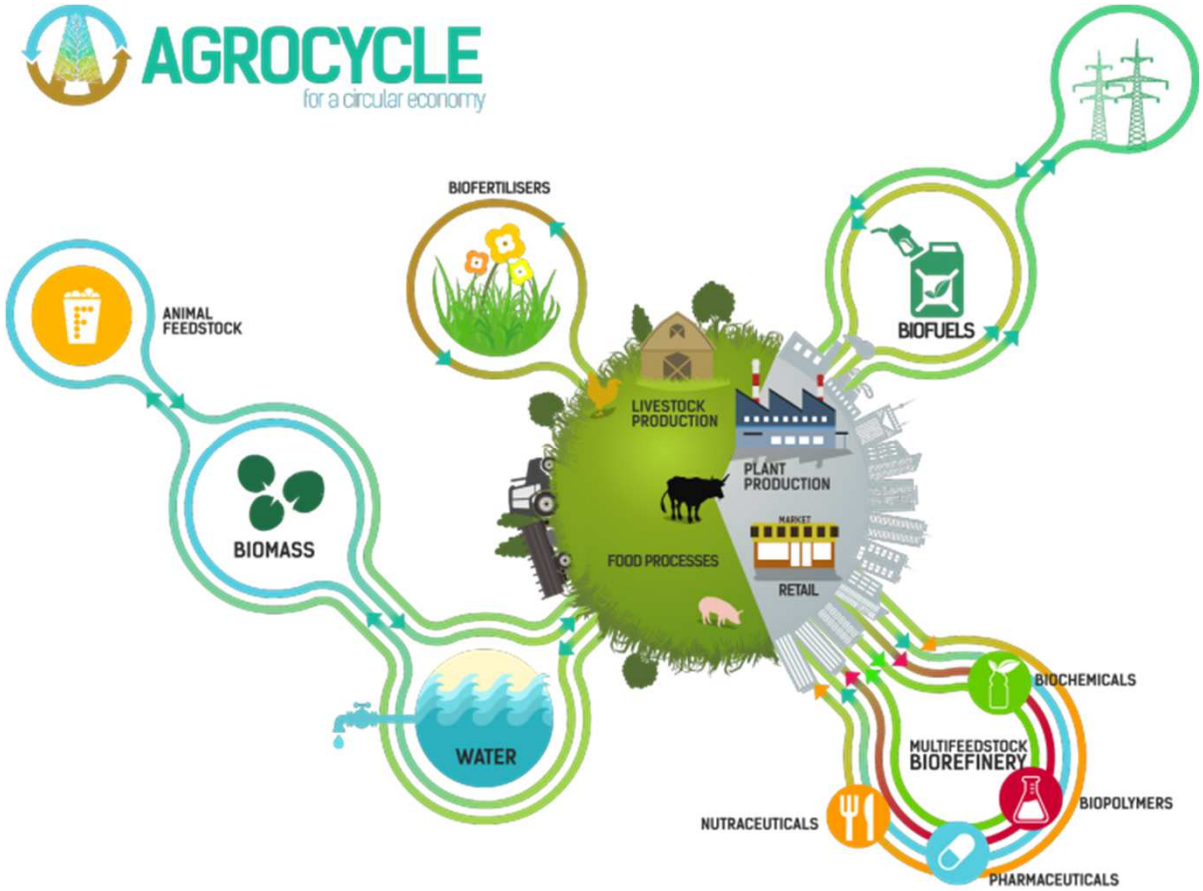
Success case studies
AgroCycle project

¿Cómo hacer un mejor uso de los residuos asociados con la industria agroalimentaria?



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Success case studies
AgroCycle project

Bioactivos utilizados:

- extracto hidroalcohólico de orujo de uva (GP)
- extracto liofilizado de salvado de arroz (RB)

Capacidad antioxidante comparable al BHT

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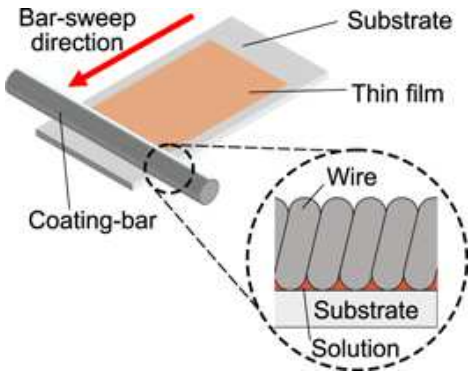
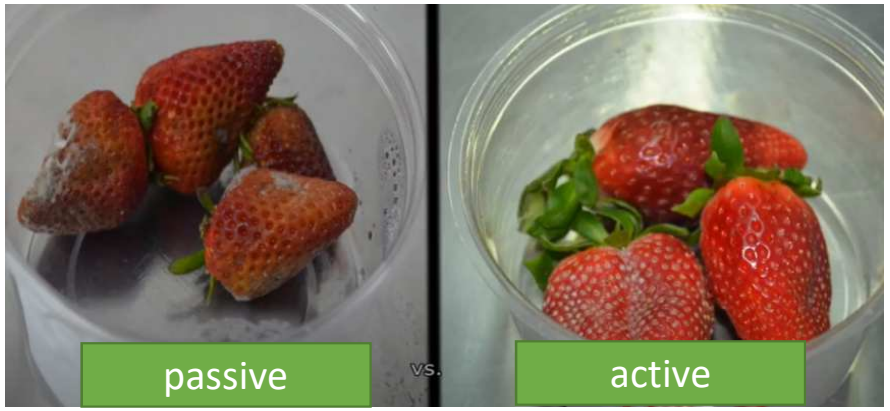
Success case studies
OliPHA project

Polyphenols extracted from the olive mil waste water can be used to coat plastic used in packaging that delay food spoilage



Packaging validation



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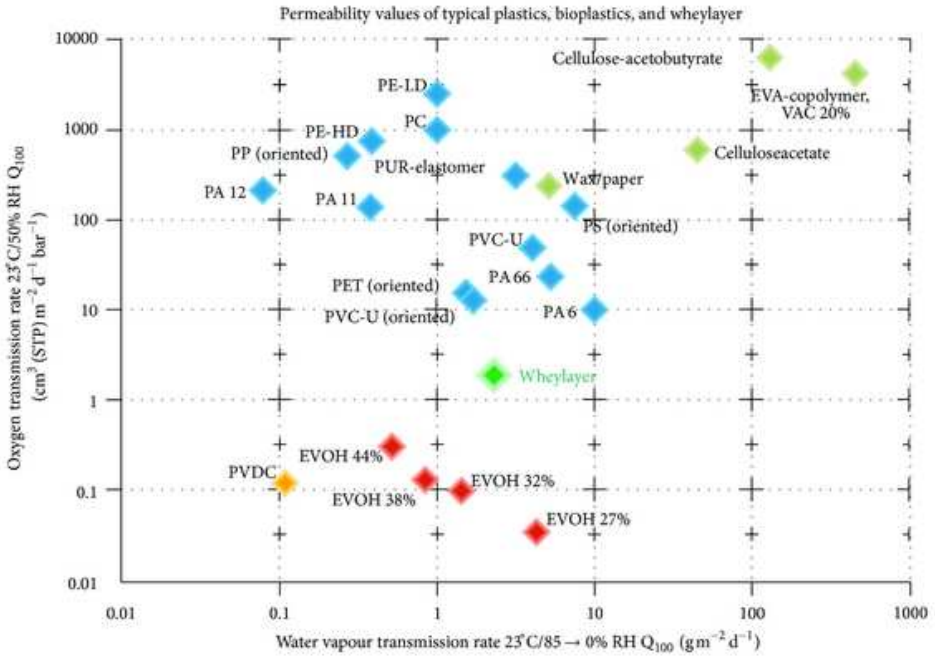
Success case studies
WheyLayer project

- Las formulaciones de recubrimiento WHEYLAYER se desarrollaron logrando propiedades de barrera muy superiores en comparación con otros bioplásticos y acercándose a las convencionales derivadas del petróleo



WheyLayer

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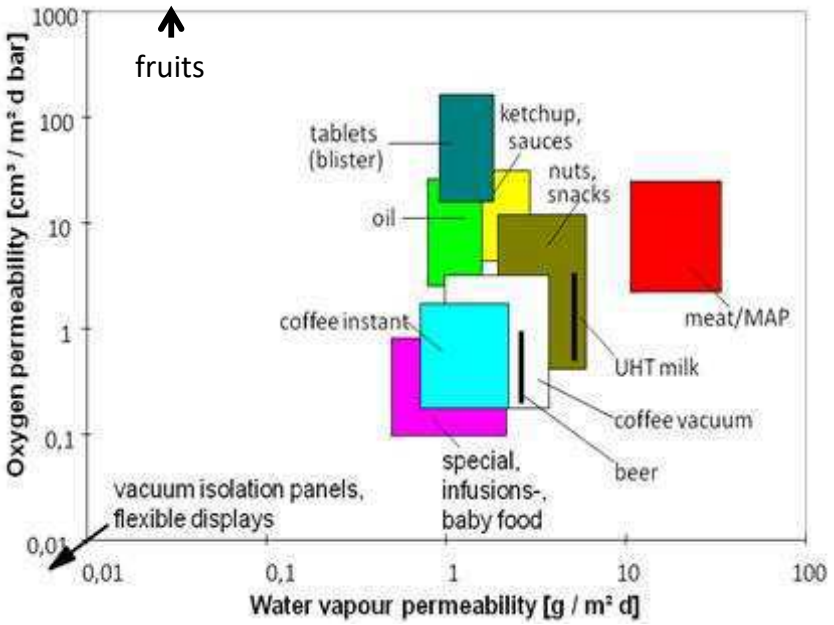
Success case studies
Agrimax project



⇒ **Plásticos y bioplásticos suelen tener una barrera al oxígeno muy alta para las frutas!!!**

(las frutas necesitan un intercambio de O2 and CO2)

⇒ **¿Qué hacemos?**

Microperforationes en el envase para facilitar el intercambio de gases

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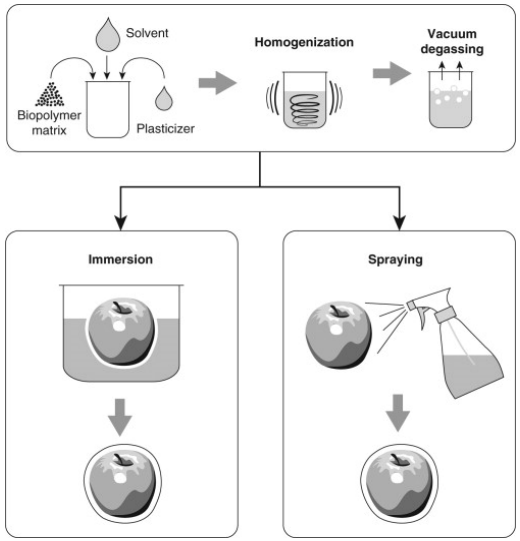
Success case studies
Agrimax project

Post-cosecha

- Pérdida de humedad
- Oxidación

¿en qué se parece una fresa a un limón?



Dipping: Consiste en sumergir la pieza de fruta entera en una solución de recubrimiento por:

- **Inmersión:** La fruta se sumerge en la el tiempo suficiente para garantizar una humectación completa y se seca a posteriori
- **Depositación:** se forma una capa fina en la superficie de la fruta

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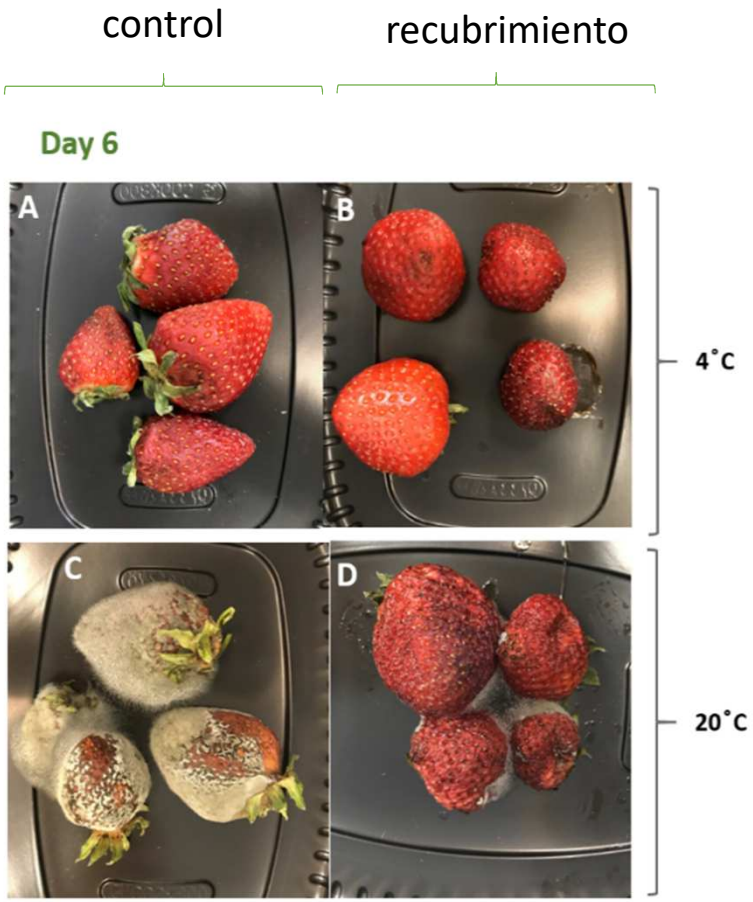
Success case studies
Agrimax project



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