Biomaterials: transformation and characterisation

Workshop: "Strategies for development of successful bioplastics for the food packaging".

19th of November 2019

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NewPack
New BioBased Film for Packaging
www.newpack-h2020.eu

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 792261

Tecno at a glance

Tecnopackaging is a technology-based SME involved in the development of **innovative plastic materials and products**

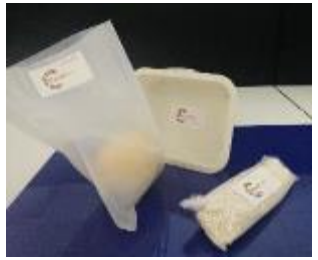
30	**Researchers & technicians**
Customers	**60**
0.2 M€	**Investment in equipment per year**
Annual budget	**1 M€**

European projects

EuroPHA

BIOCOMPLACK
BIO based, degradable & COMpostable PLA paCKaging

BAQUA



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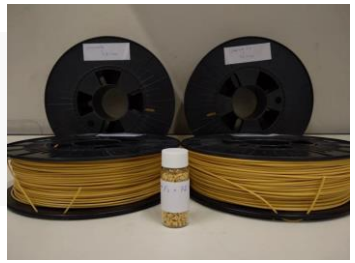


Erasmus+ bioplastictrain

Erasmus+ NARA

2010
- Tecnopackaging

2012
- New facilities

2013
- First EU Project

2019
- 9 EU Projects

circpack

YPACK

NewPack
New BioBased Film for Packaging

Customised solutions

We develop and produce **plastic compounds and products according to your needs** thanks to our great know-how on advanced polymeric compounds and our extensive network of partners

Customised materials

- **Biopolymers**: PLA, PHA, PBS, PBAT, starch
- **Technical polymers**: PEEK, PPS
- **Nanocomposites**: nanoclays, CNT, graphene

Smart packaging

- Anti-microbial, antioxidant, barrier properties

Sustainable packaging

- Recyclability improvement, eco-design
- Agrowaste revalorisation: natural fibres, cellulose…
- Biobased, biodegradable, compostable, food-contact

Material validation for industrial production

- We test your material for optimal processing

Capabilities: material development

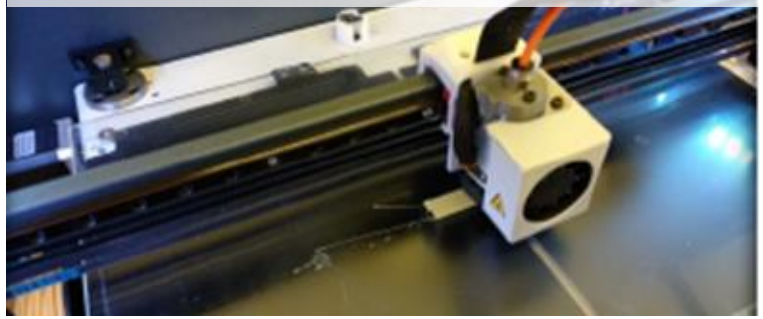
Tecnopackaging is a technology-based SME involved in the development of **innovative plastic materials and products**

Capabilities: plastic transformation

Tecnopackaging is a technology-based SME involved in the development of **innovative plastic materials and products**

Injection

3D-Printing

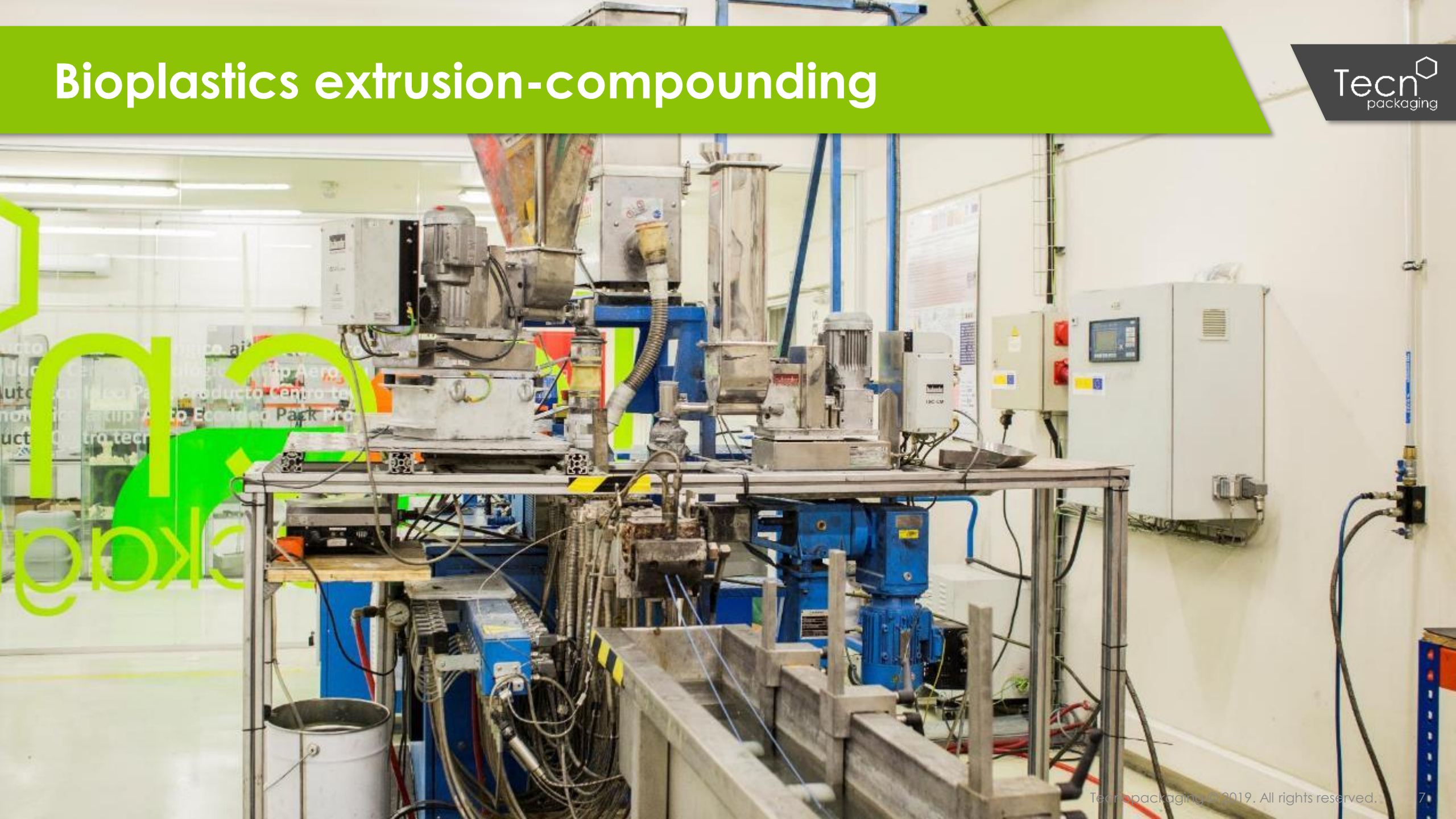


Extrusion blow-moulding

Film-blowing

Thermoforming

Bioplastics extrusion-compounding



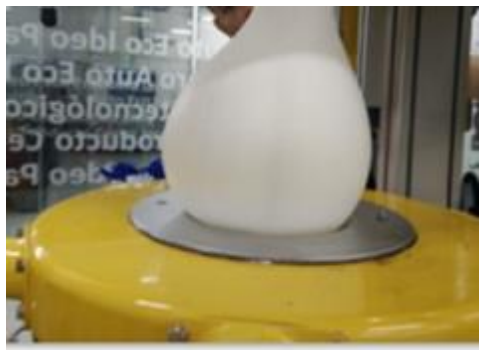
Bioplastics film casting

Bioplastics film-blowing

PHA blends film-blowing: reaching stability

PHA is blended to enable its processing due to its **short processing temperature range**

- Blending with other biopolyesters
- Branching agents
- Nucleant agents
- UV stabilizer
- Melt strength enhancers



Very **short processing temperature range**: adjust parameters very carefully if melt strength is inappropriate, the tube will be either too viscous or too fluid (collapse easily)

- **Film tube does not crystallize in time**: material sides should not stick to each other when the filmis rolled
- Many times nucleation additives are needed to speed up the process. Sometimes these **additives do not fully melt** and may break the tube (high differences in melting and processing temperatures)

There are thickness differences among the different areas of the tube or lack control

TECNOPACKAGING role's in NewPack

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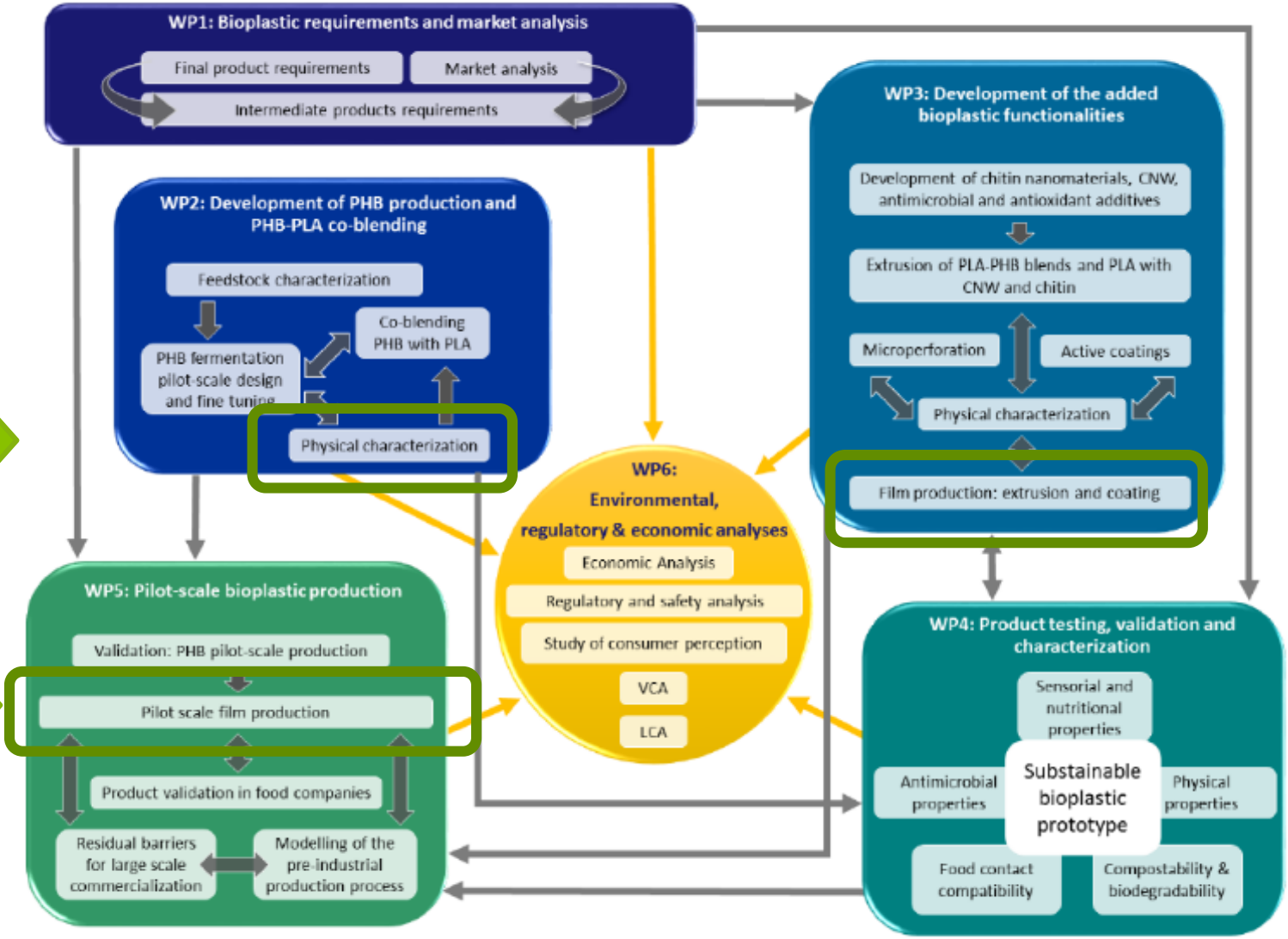
Role in NEWPACK

- S

TECNOPACKAGING's role is as a film-blowing manufacturer at semi-industrial scale with bio-based blends coming from the project

TECNOPACKAGING Role's in NEWPACK



WP2: Blends characterization

WP5: Pilot scale film production

WP3: Film Production

WP4: Product testing, first validation and characterization

Experts in plastic materials

www.tecnopackaging.com

Tecn packaging

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BIO-BASED INDUSTRIES Public-Private Partnership
Bio-based Industries Consortium
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