



Novel packaging films and textiles with tailored end of life and performance
based on **bio-based copolymers and coatings**

H2020-BBI-JTI-2018
GA 837761

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Breakfast event 6th December 2022, Berlin

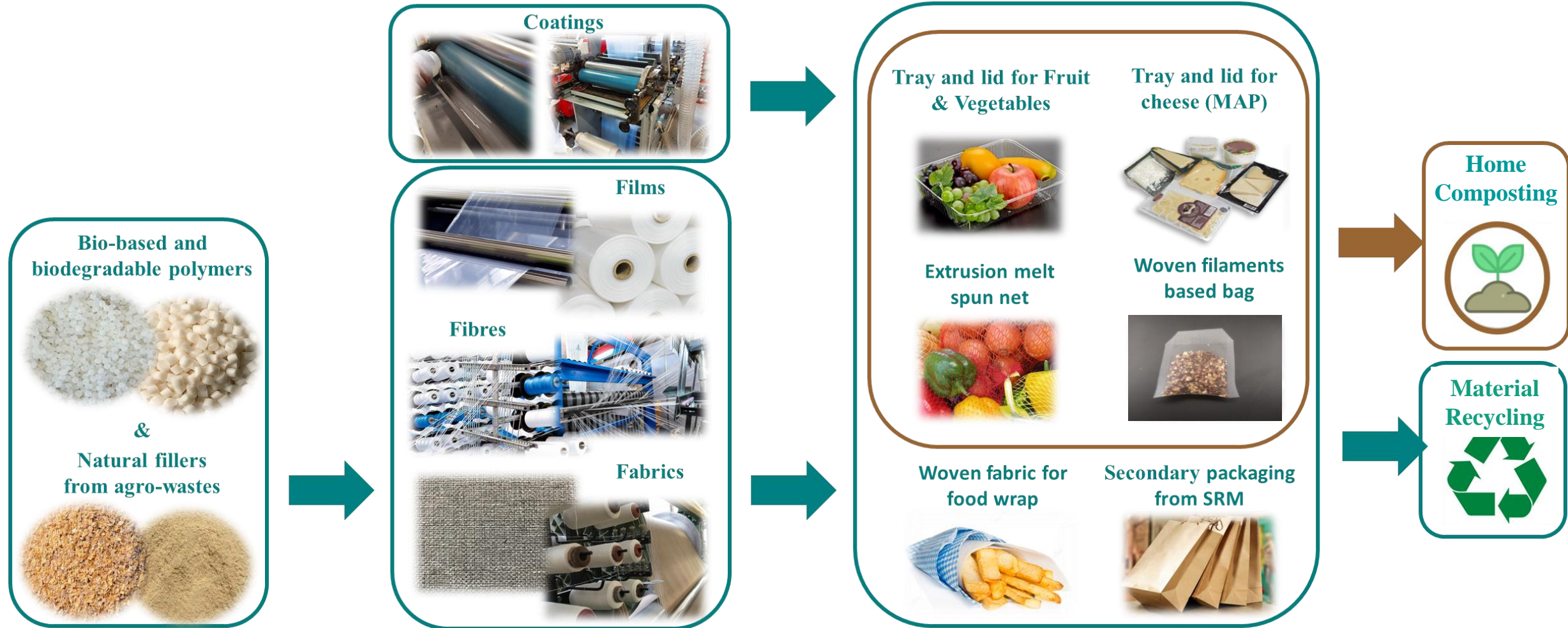
This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 837761



Horizon 2020
European Union Funding
for Research & Innovation



Overall technical objectives of BIONtop



Biobased polymers:

- Polylactic acid (PLA)
- Poly-Butylene Succinate (PBSA)
- Polycaprolactone (PCL)



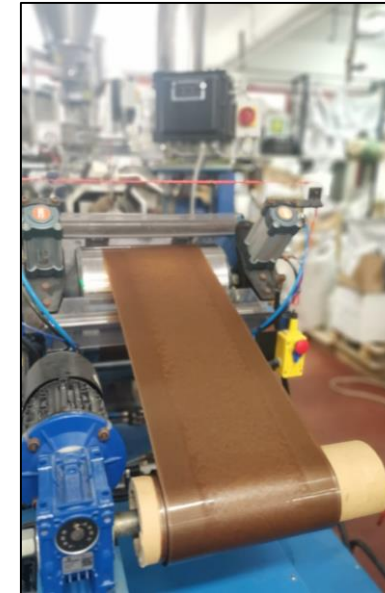
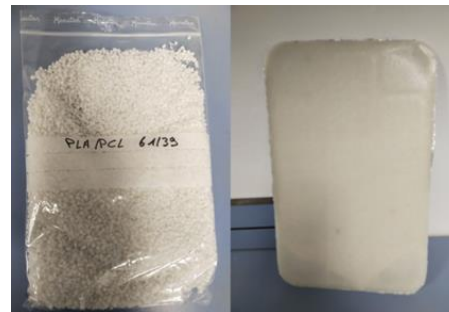
1. Thin films – PLA/PBSA with new copolymers

Thickness 30 – 150 μm , > 99% biobased

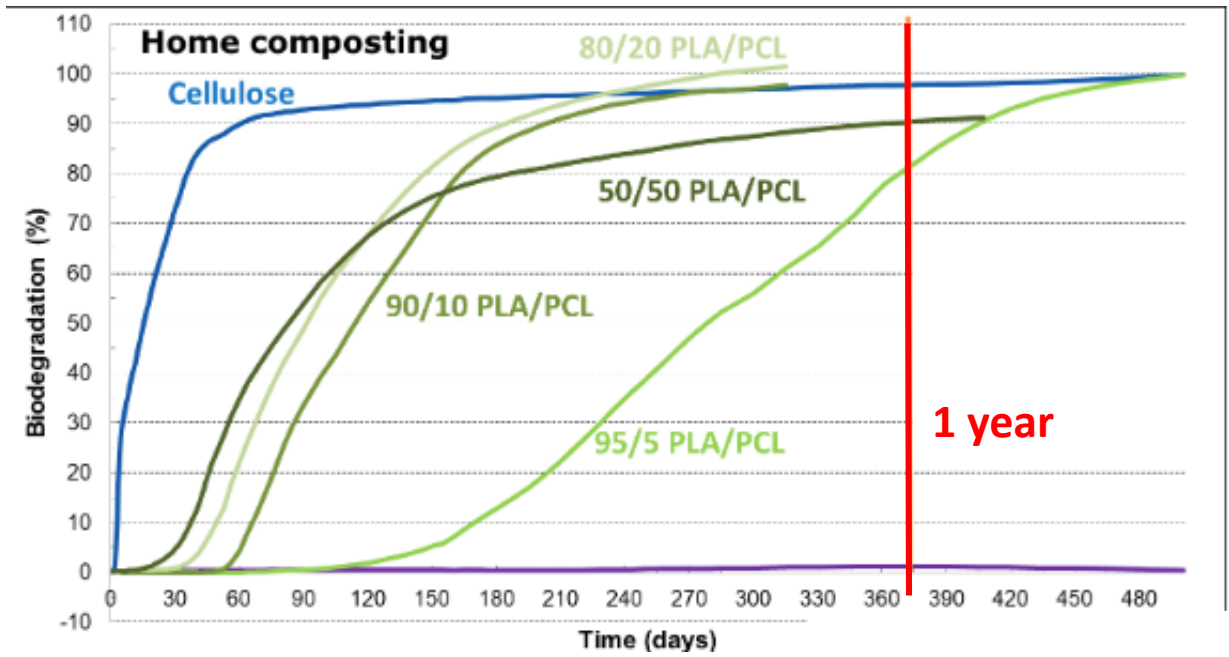
2. Thick films for trays – PLA/PBSA with new copolymers and wheat bran

Thickness >200 μm , >99% biobased

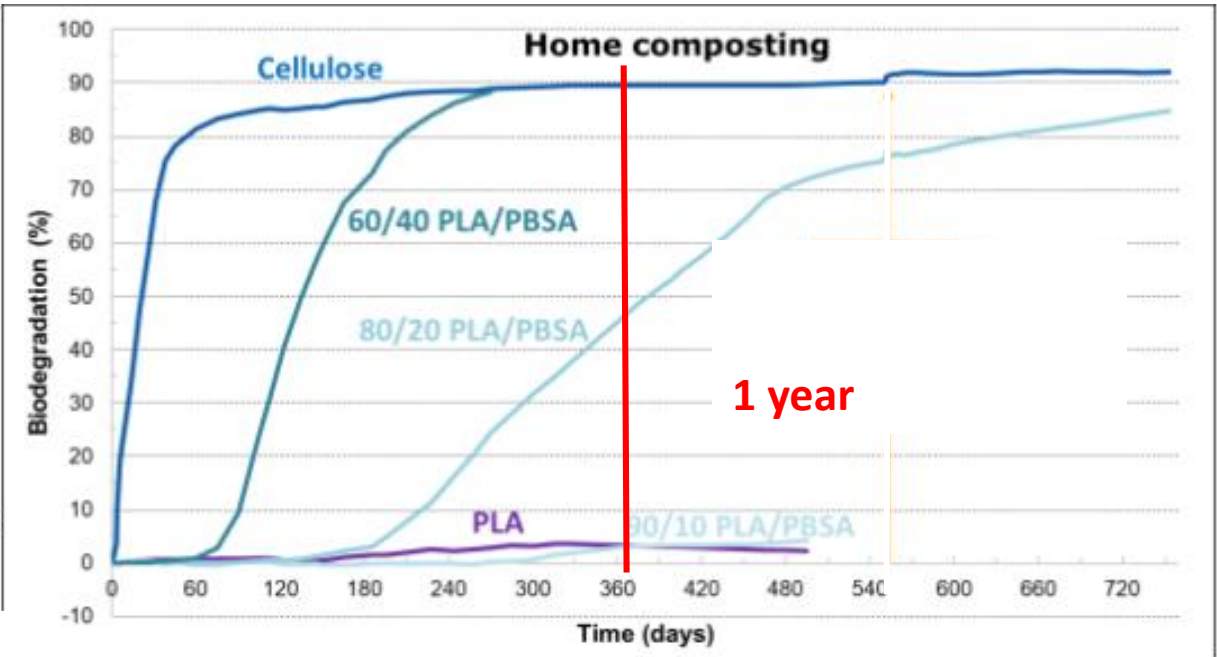
3. Textiles – PLA/PCL



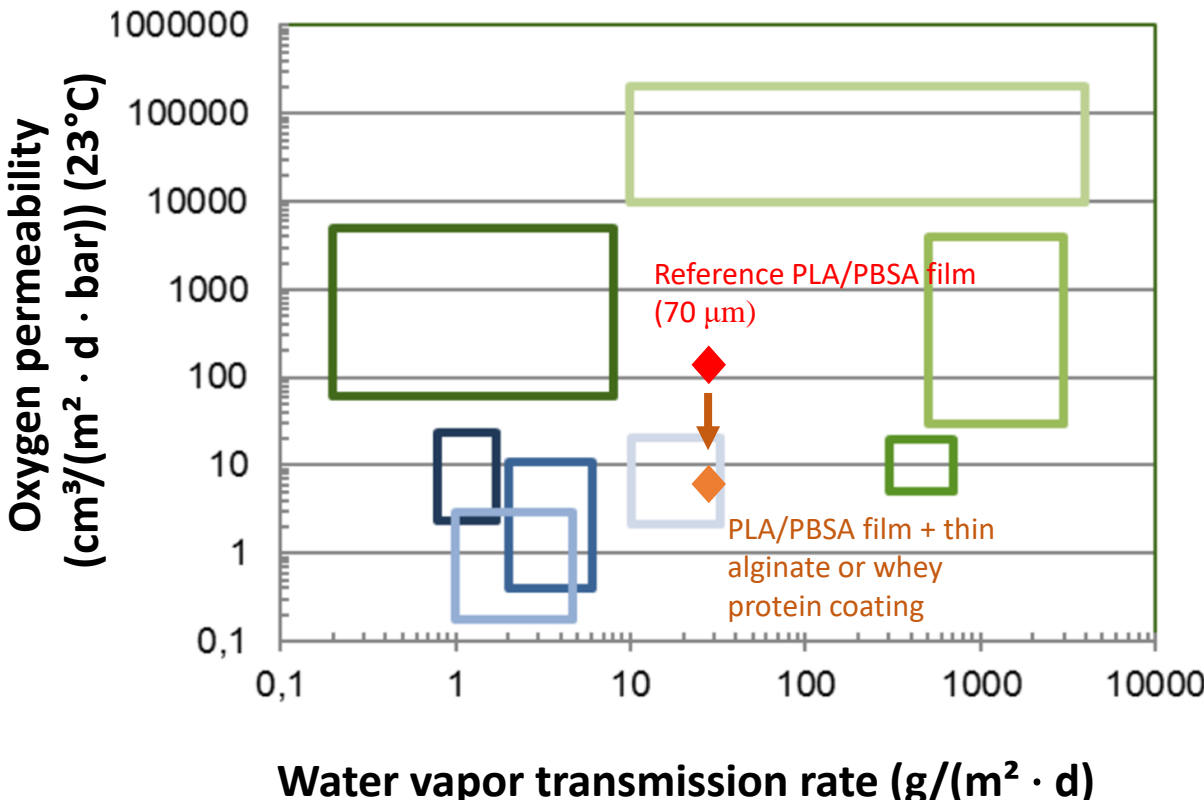
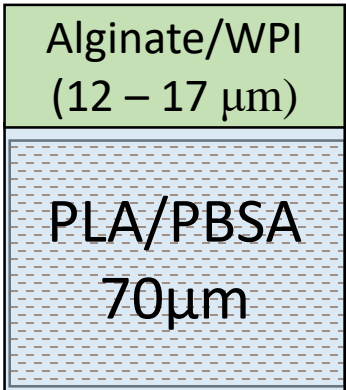
Biodegradation of blend of PLA with PCL for textiles



Biodegradation of blend of PLA with PBSA for films and trays



Materials can be tuned to achieve home compostability

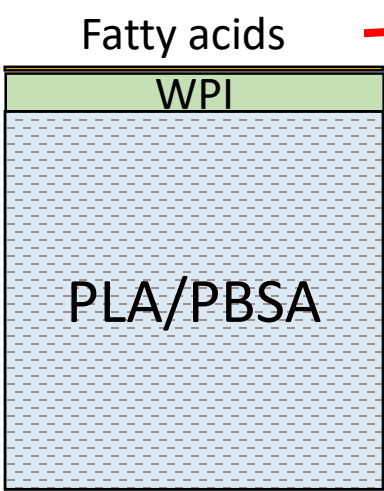


Application scenarios:
Lid films for sensitive food

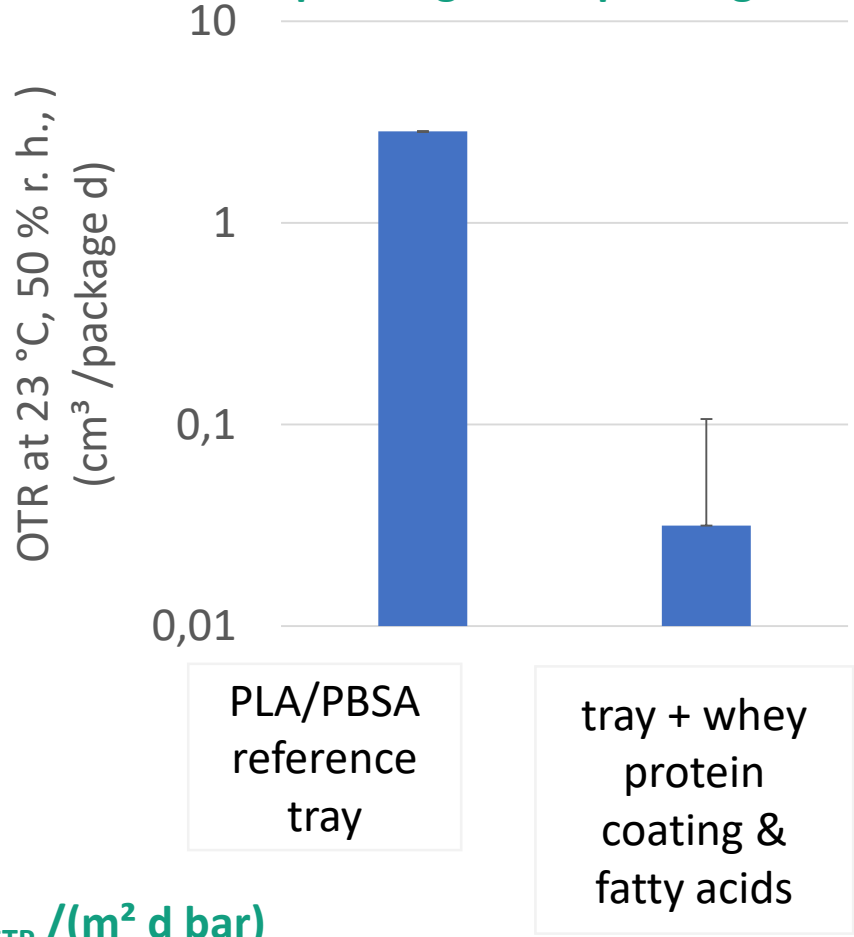


Fruits, Vegetables, fresh salads
Adapted and modified according to Detzel et al., 2018

Oxygen barrier by thin alginate or whey protein coating

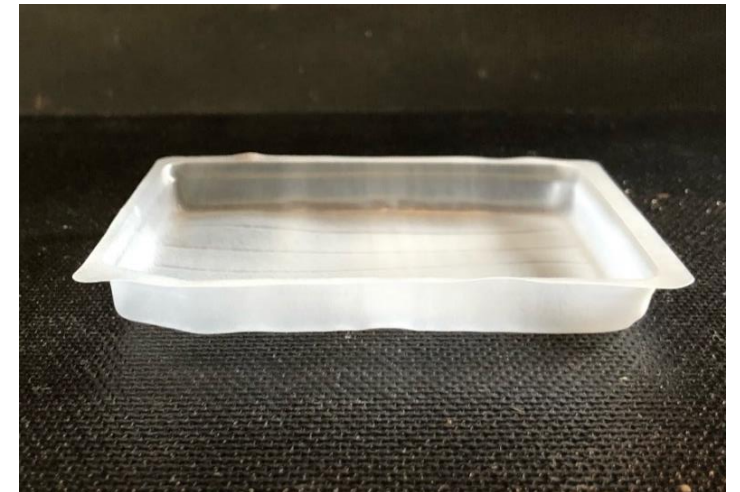


Up-scaled technique via gravure printing



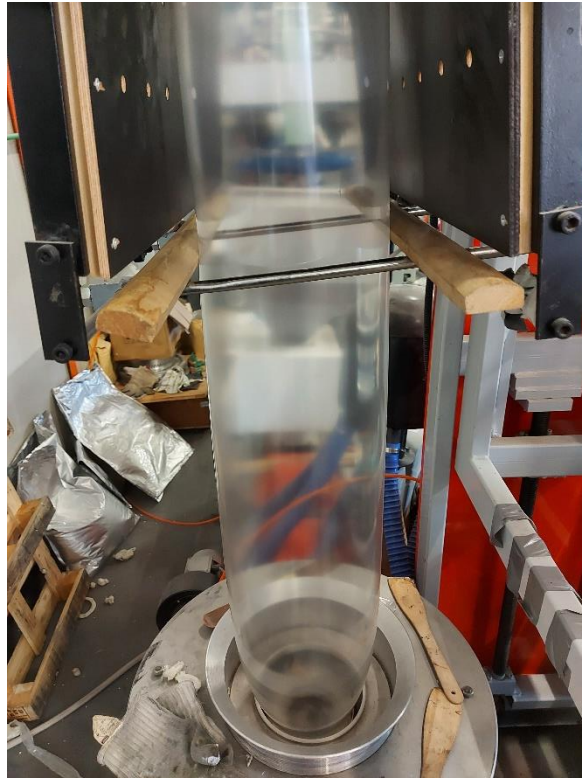
Meat MAP packaging:
 Oxygen permeability 2-11 cm³_{STP} / (m² d bar)

- Application scenarios:**
- Trays for sensitive food
 - Alternative to conventional polyamide



Thermoformable biobased composites

Upscaling Cast and blow extrusion of PLA/PBSA



Up-scaling and processing successful
Sample is compliant with the total migration limit

Upscaling Film with natural filler for trays

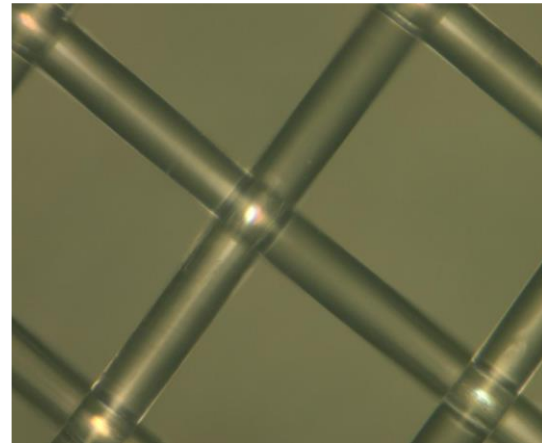


Upscaling and processing successful

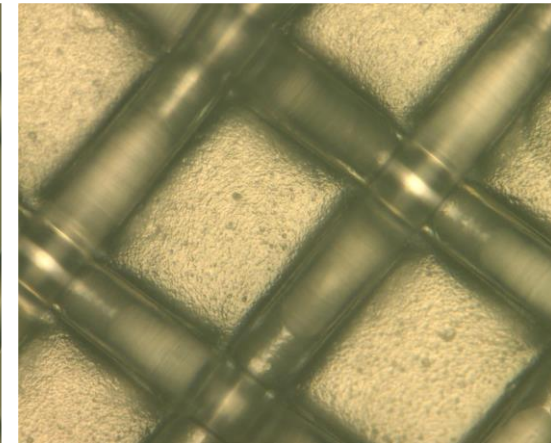


Tea bag made of PLA with alginate coating as aroma barrier

Future scenario: tea bag made of PLA/PCL fabrics with home composting properties



Reference PLA textile



+ alginate coating

Thank you!



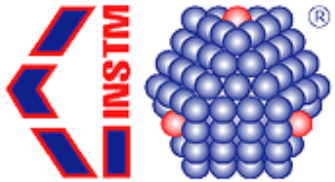
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<https://biontop.eu/>



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