



GoToS3

BIOCOMPAL Wallonie west-vlaanderen



From biomass to lightweight and high performance composites: an integrated approach



Objectives and Strategy

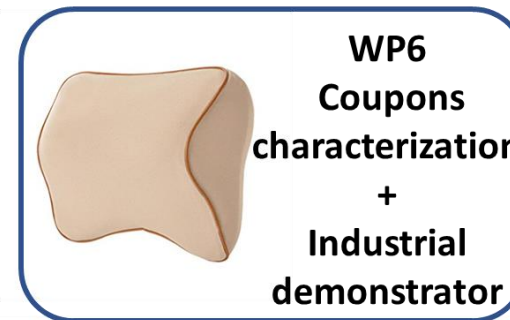
BIOCOMPAL project aims at developing **structural, lightweight, biobased and low carbon footprint composites made of flax technical woven fabrics** issued from renewable and agro resources and **innovative** bio-based thermoset resins (*elaborated from naturally occurring phenolic compounds*) exhibiting high mechanical, thermal, fire resistance and durability for **applications in transport (automotive, public transportation –bus, tramway-, railway, aeronautic, boatbuilding...)**



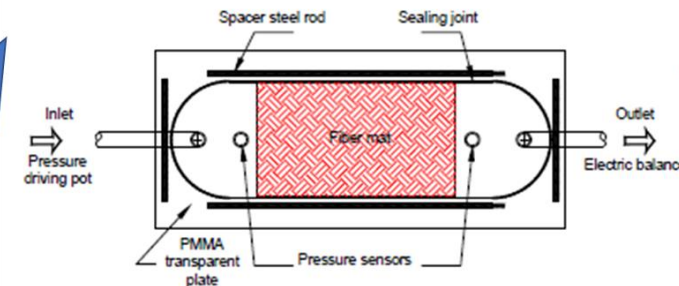
WP3
Flax fiber cultivation and textile reinforcement preparation



WP4
Preparation of high performance resins from renewable feedstocks



WP6
Coupons characterization + Industrial demonstrator



WP5
Manufacturing process

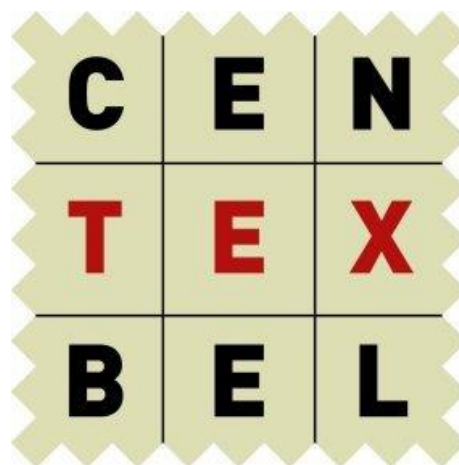
+ WP1: Management
+ WP2: Communication



Consortium

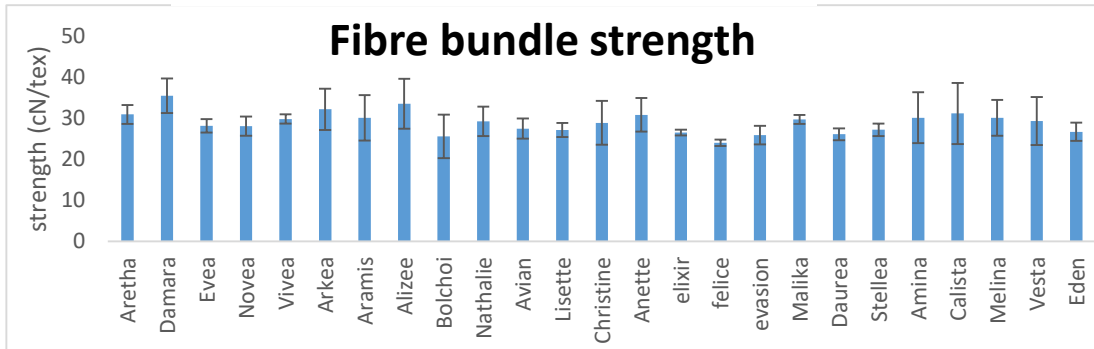
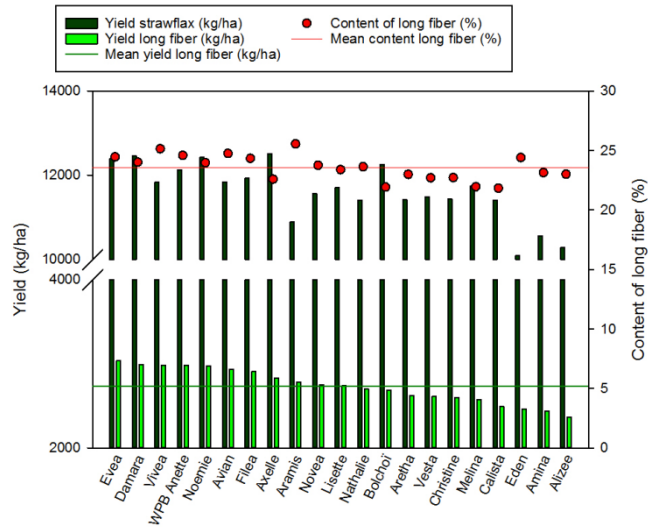


ONDERZOEK & ADVIES IN LAND- & TUINBOUW



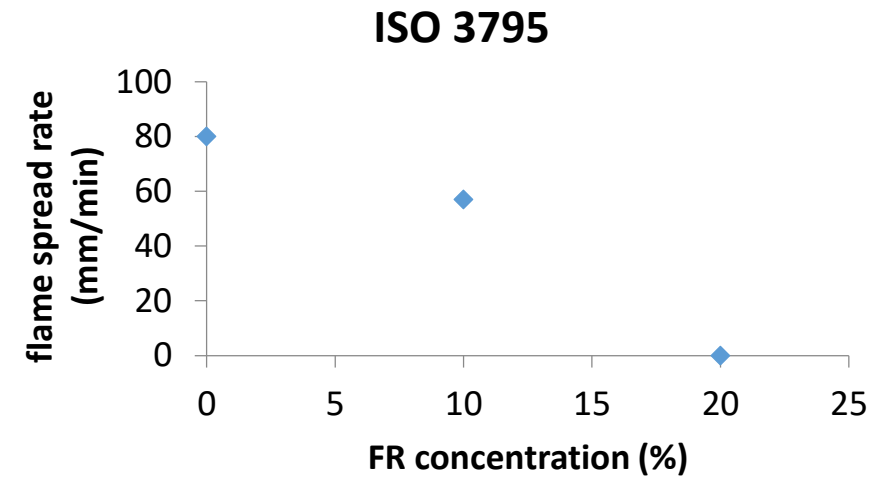
WP3 - First results

Fibre selection and characterization



Fibre modification

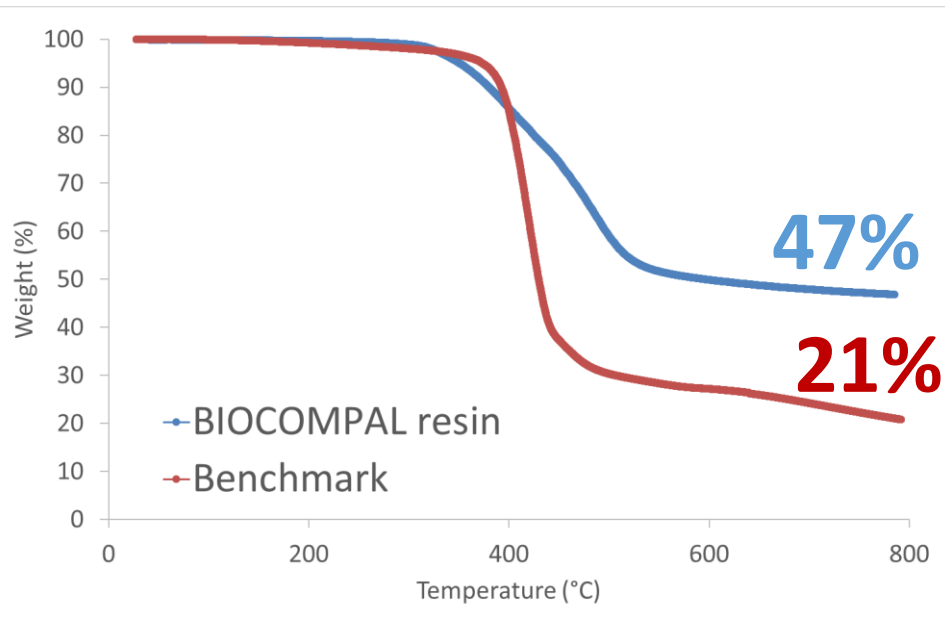
- Fibre treatments with flame retardant additive
- Flame test ISO 3795 (Road vehicles, and tractors and machinery for agriculture and forestry -- Determination of burning behaviour of interior materials)



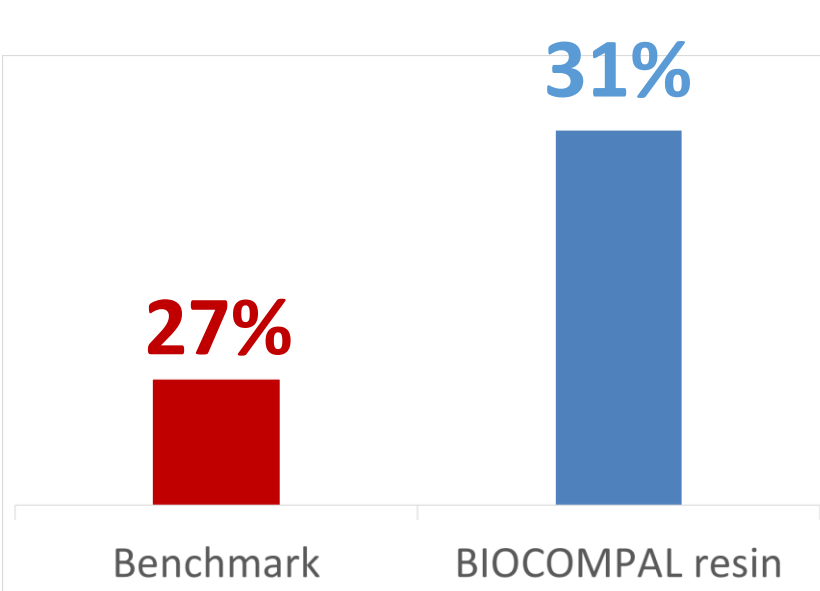
WP4 - First results

Synthesis of bio-based resin with intrinsic fire resistance and high compatibility with flax fibers

Improved Thermal stability by TGA-N2



Enhanced Flame Retardancy by LOI test



Good impregnation of flax fibers

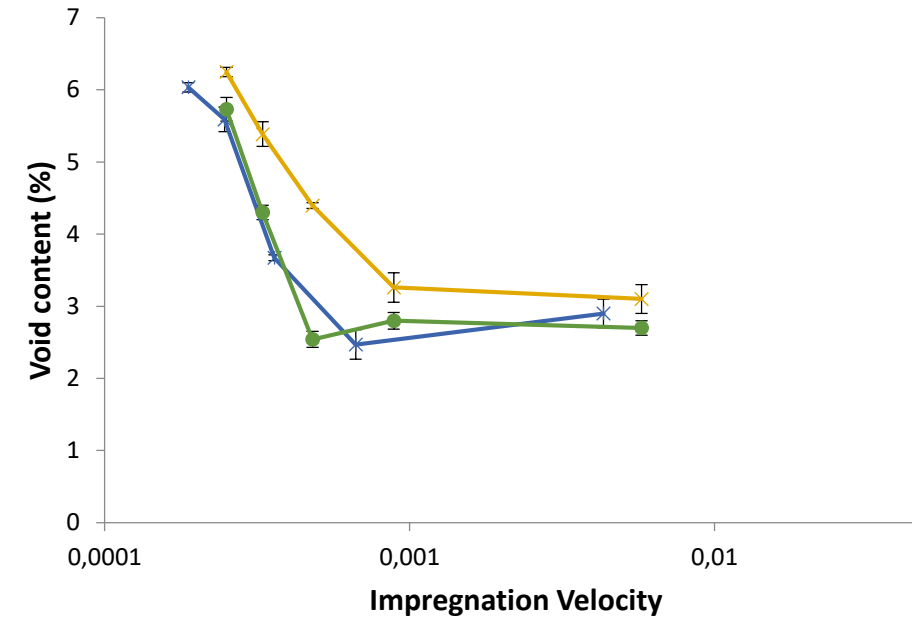
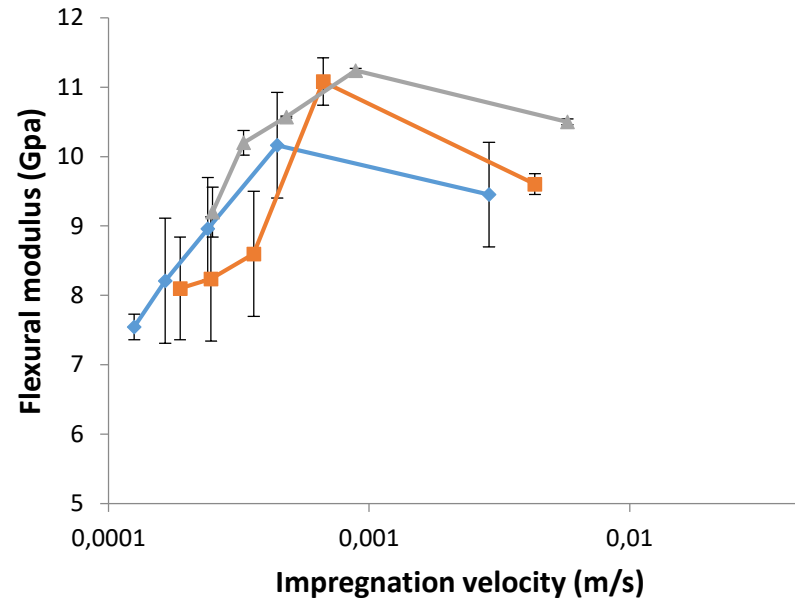
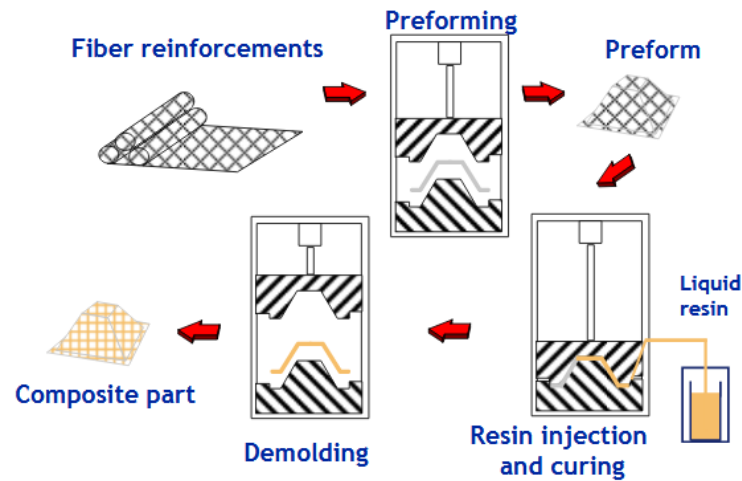


WP5 - First results

Identification of optimal process condition for manufacturing of flax fiber reinforced composite materials

Composites manufacturing by resin transfer molding

Identification of optimum resin velocity to maximize the mechanical properties by minimizing the void content



Financial support

Projet soutenu par
Project ondersteund door

Interreg
France-Wallonie-Vlaanderen



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