BioEcoAgro

Joint Research Unit

AG Adebiotech

17 Janvier 2022

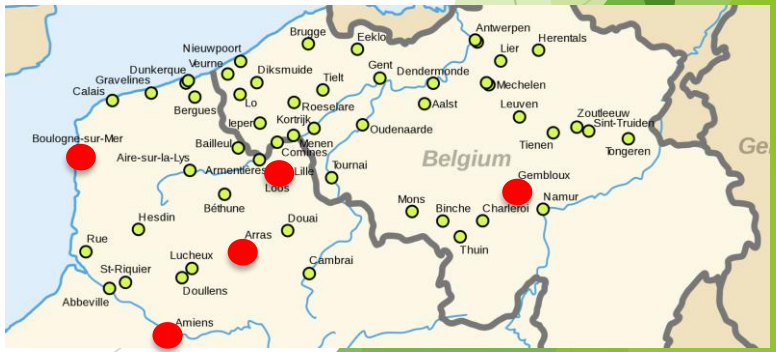
Cross-border BioEcoAgro UMR

- New structure
  - 300 researchers and techniciens from booth sides of the Franco-Belgian Border
  - develop an international center of excellence in the field of biological engineering applied to agriculture, biotechnology, agri-food and the environment.

- A laboratory without walls bringing together researchers from INRAE, the University of Liège, the University of Lille and the University of Picardie Jules Vernes

- Focuses on the combination of (eco) systemic approaches and molecular for:
  - understanding the functioning of plants and ecosystems in natural or controlled environments and in the context of climate change
  - decryption and control of the synthesis or the bioproduction of active biomolecules (specialized metabolites and polymers of plant origin, enzymes and secondary metabolites of microbial origin, active peptides from the hydrolysis of food proteins)
  - biopreservation and food formulation.

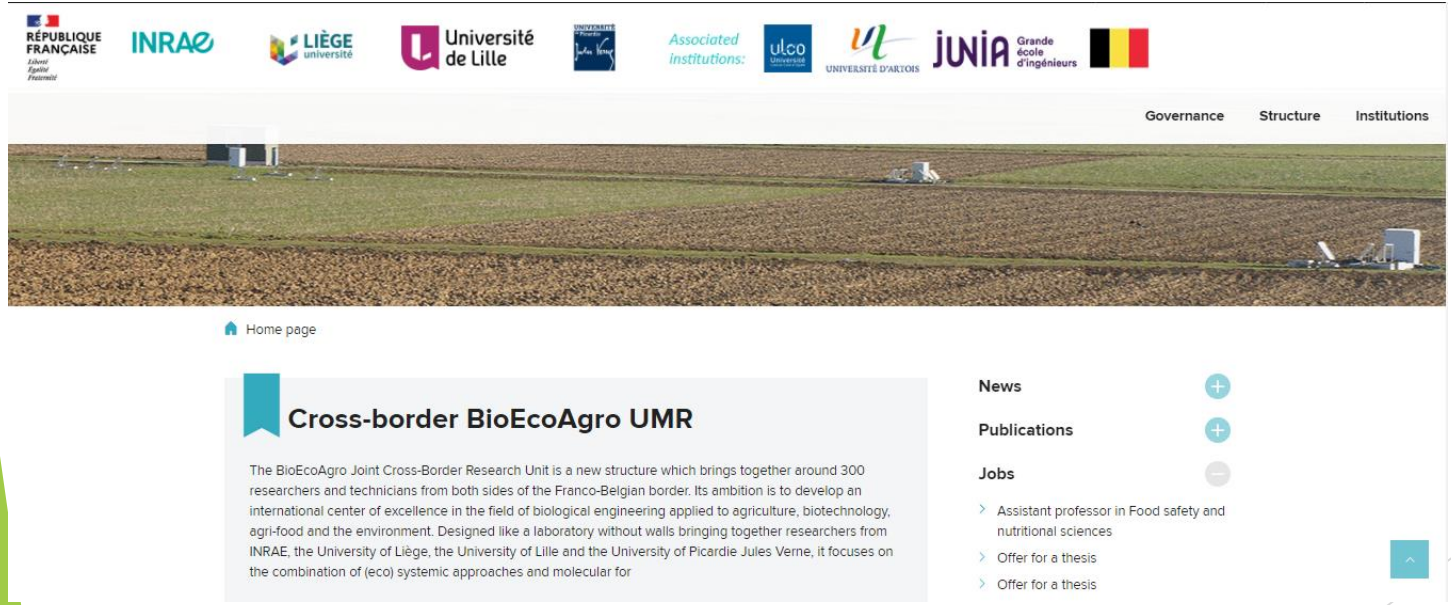
Institutions associées :



Communication Tools

Website

https://www.bioecoagro.eu/



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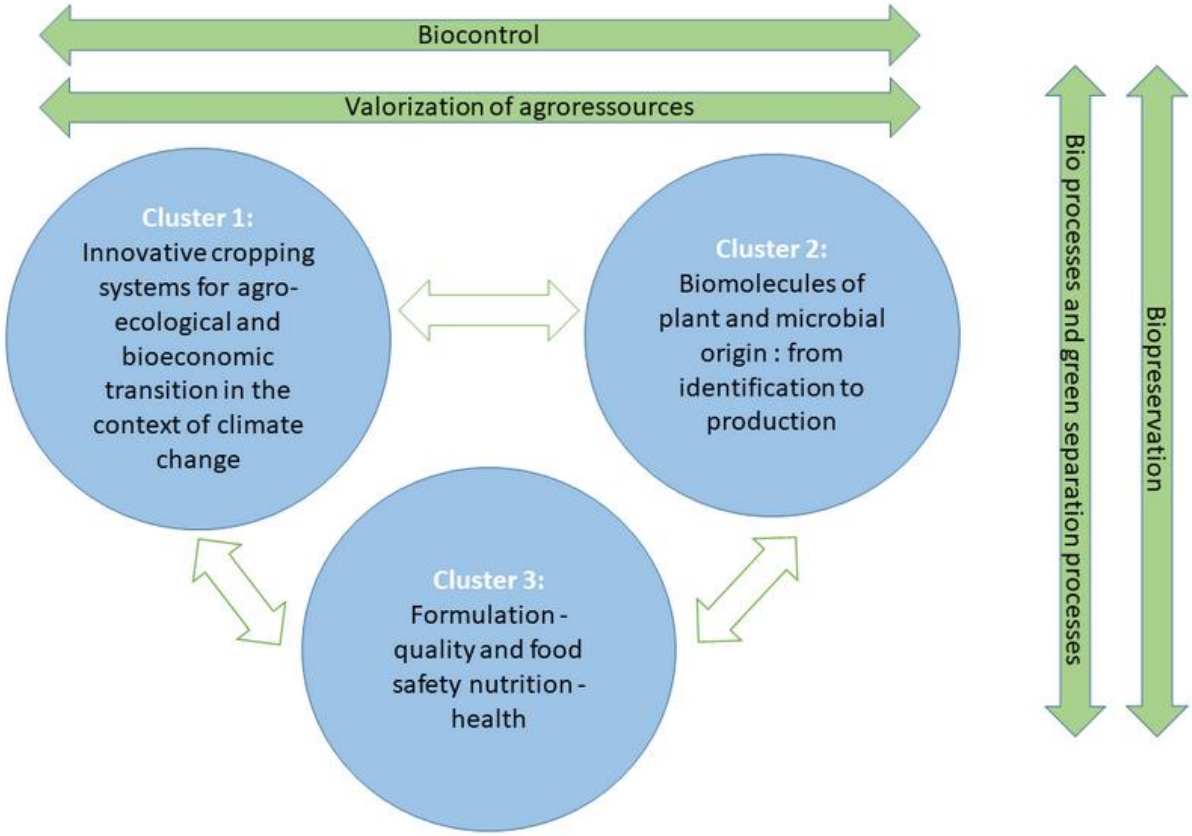

Structure : 3 clusters and 4 intersections

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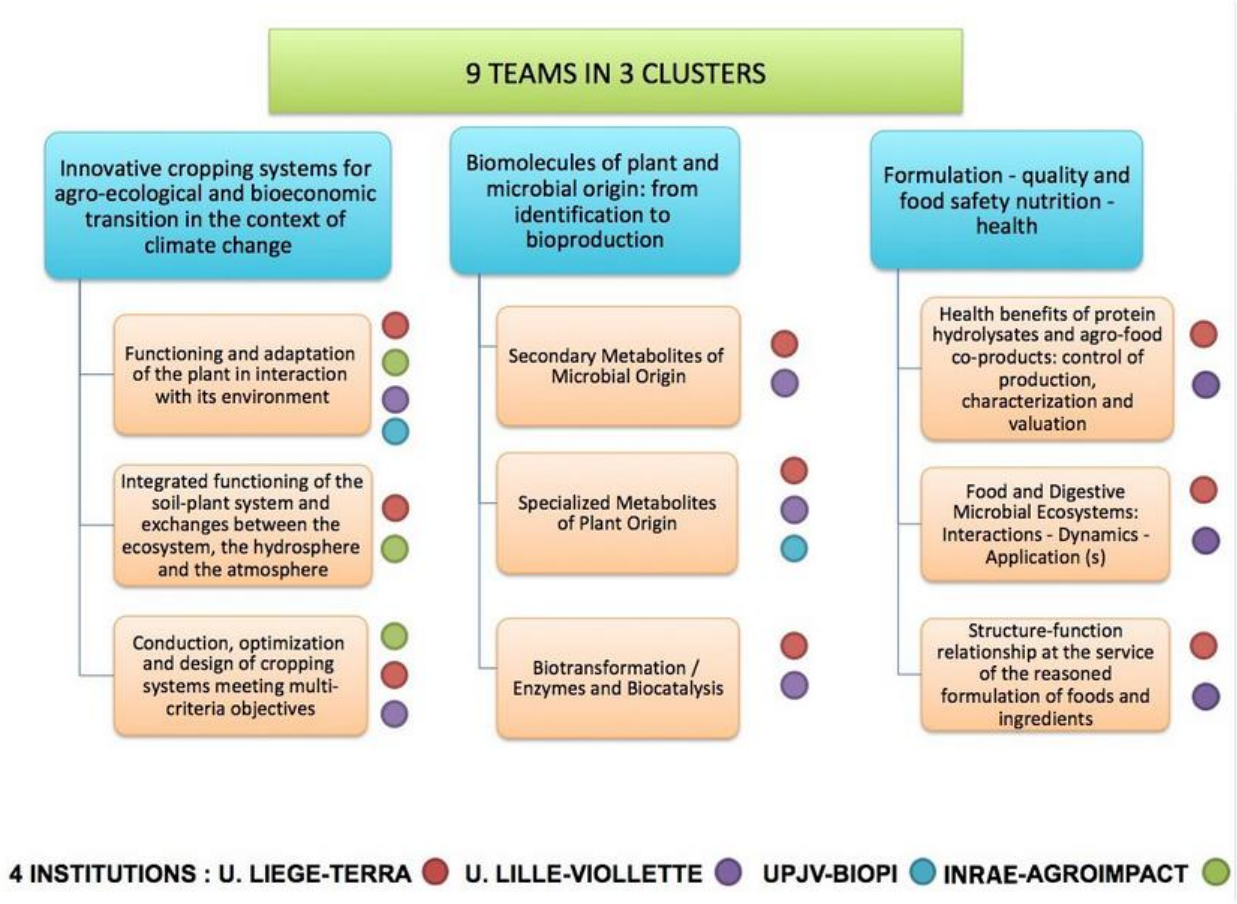

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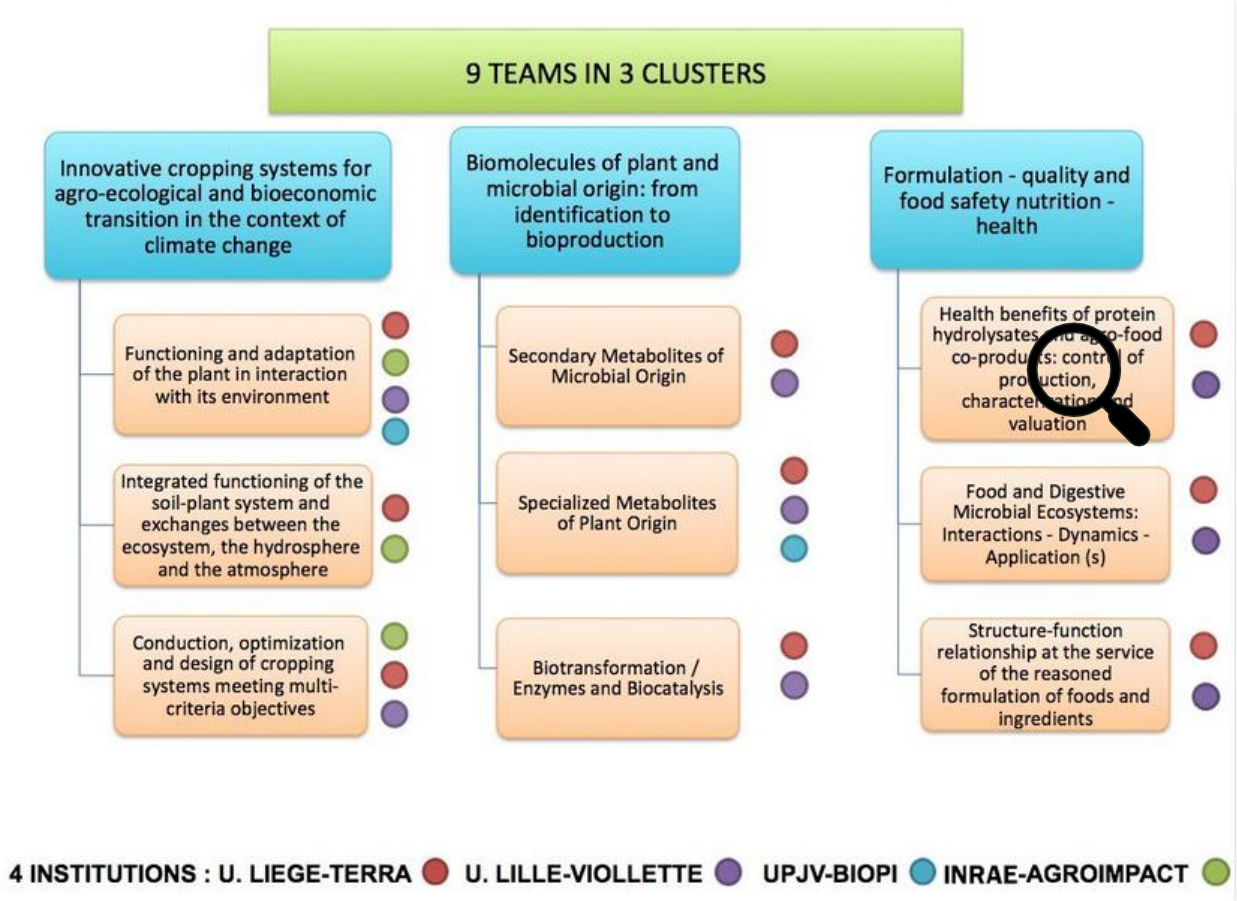

Cluster 03 team 07 : The scientific question

The **understanding** of the **mechanisms** that lead to the health benefit of food proteins and byproducts

Proteins, byproducts

Hydrolysis concept,
GID (from mouth to colon)
Sources, structure

Probiotics

Health

Inflammation, T2Diabete, Obesity, hypertension, MS

Intestinal environment

Intestinal microbiota

Pole 3

- ***Health benefits***

Inflammation
Food intake regulation
Glucose homeostasis
Type II Diabete
Hypertension
Stress
Gut health
Gut barrier
Microbiota (SHIME)

Rozenn RAVALLEC
rozenn.ravallec@univ-lille.fr

Benoit CUDENNEC
benoit.cudennec@univ-lille.fr

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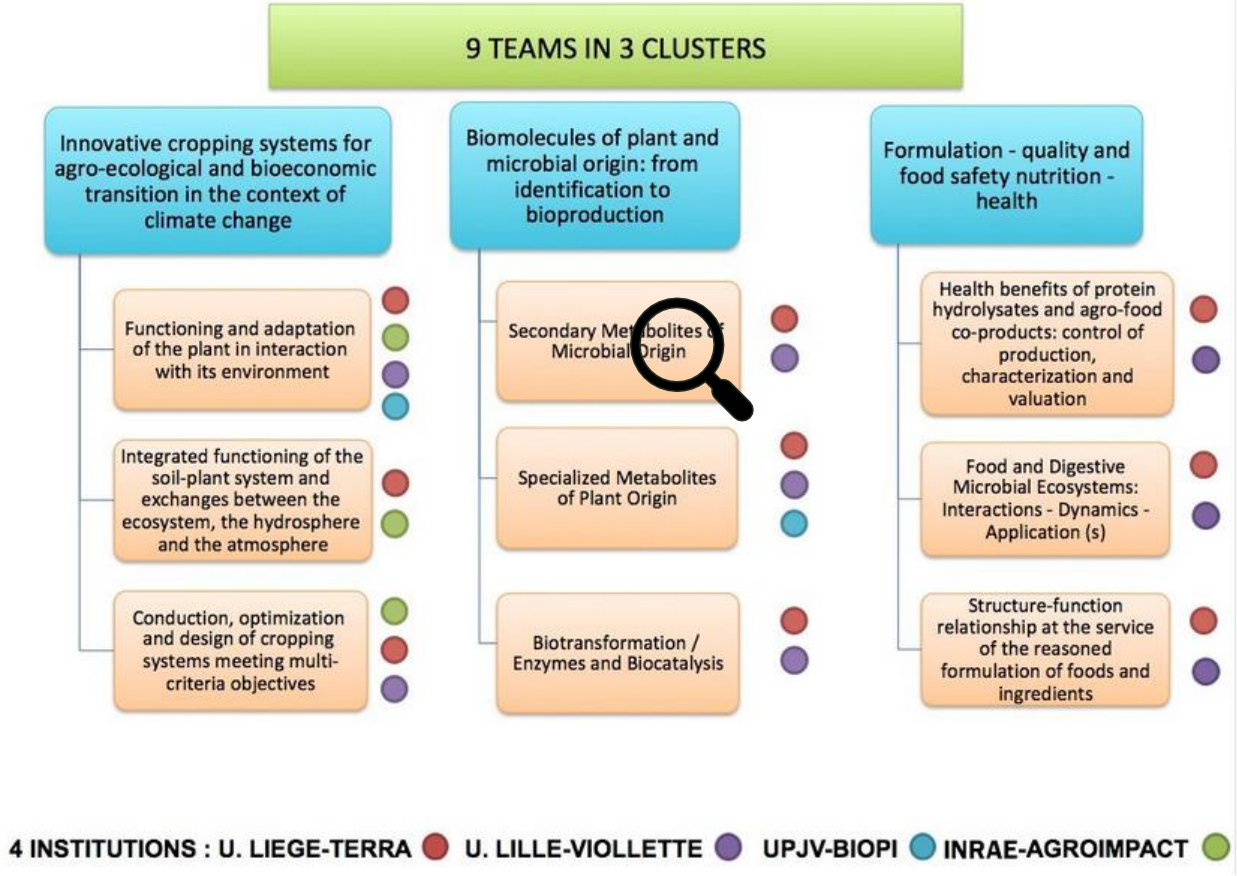
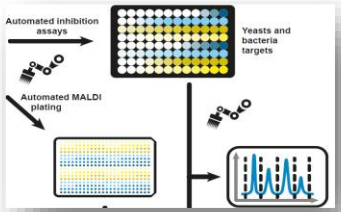


Cluster 02 team 04 : The scientific question

Identification and characterization of microbial secondary metabolites. Control and optimization of their production for the development of applications

Bioprocess optimization and scaling-up



Strain screening, genetic engineering and culture optimization

BioEcoAgro

François COUTTE
francois.coutte@univ-lille.fr

Applications

- ***Biocontrol***

Biofungicide
Antimicrobial
Elicitor

- ***Cosmetic***

Biosurfactant
Antimicrobial
Antiaging

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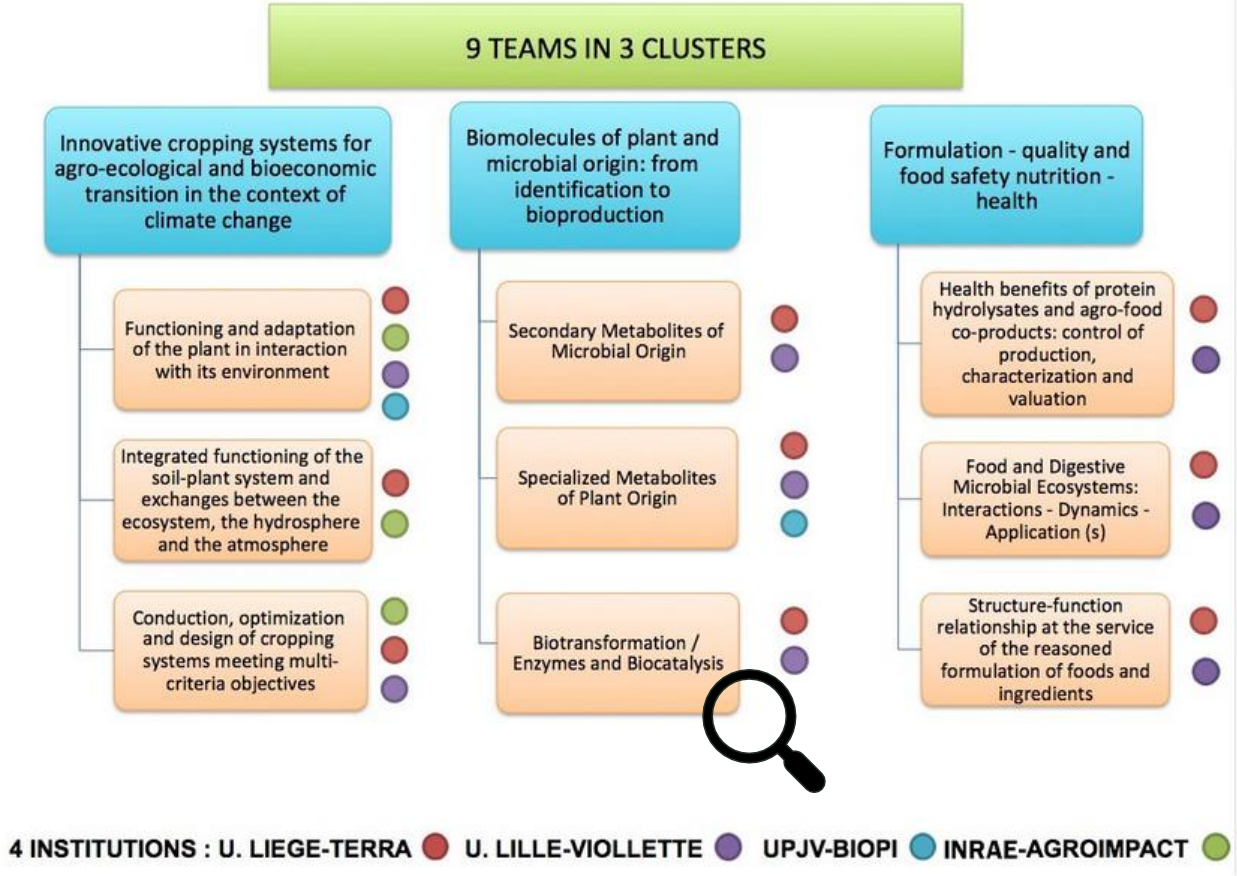
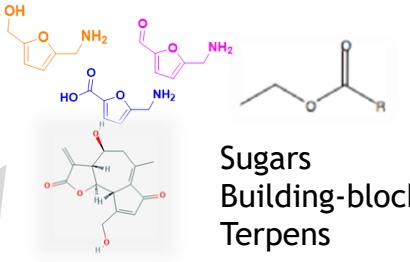


Cluster 02 team 06 : The scientific question

Screening (or conception of), characterization and implementation of biocatalysts (enzymes)

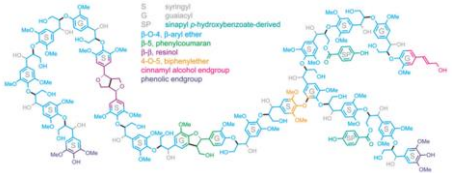
Biotransformation/
Enzymes et Biocatalyse

Biodiversity screening
Enzyme biocatalysis
HT activity measurements
Process optimization



Sugars
Building-blocks
Terpens
…

By-products
(industry and agriculture)



Lignin

Applications

- ***Co-products valorization***
- ***Green chemistry***
- ***Cosmetics***
- ***Energy***

Vincent PHALIP
vincent.phalip@univ-lille.fr

Rénato FROIDEVAUX
renato.froidevaux@univ-lille.fr