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LGP2 (A. BOYER)

BIO-4-INKS: Life Cycle Assessment (LCA) of 100% bio-based inks for newspaper offset printing

Analyse de cycle de vie d'encre 100% bio-sourcées pour l'impression offset de la presse

BioChip
FunPrint

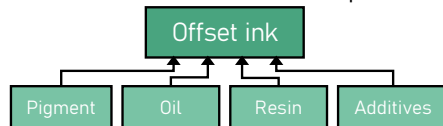
Context / Objectives

Context

- Limited recent available LCA data to guide industrials in their eco-design approach
- Environmental impacts of newly-used bio-based vehicles are little studied
- Bio-based pigments are being studied as substitutes for conventional petroleum-based colorants

Objectives

- LCA modeling of both conventional and 100% bio-based inks formulations in the European context



- Calculation of the environmental weight of pigment in current industrial offset ink formulations
- Impact transfer assessment through comparative LCA
- Identification of possible future improvements

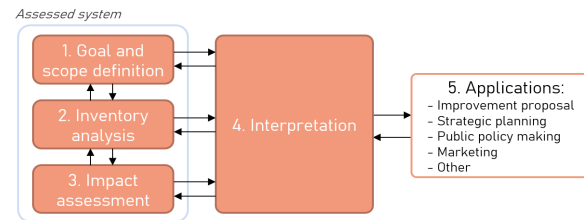
Funded by:



In collaboration with Écograf, SunChemical, Grakom

Methods

System definition



LCA framework (ISO 14044)

Data collection

Primary data

- Industrial partners

Secondary data

- Ecoinvent
- Literature review



Conjunction with lab work and choice of FU

- Bio-based pigments: technical relevance of assessed solutions are validated in lab environment
- Functional Unit (FU) is linked with the optical performances (contrast, color, i.a.) of the formulated inks.

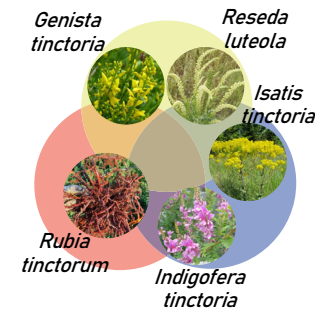
Need for multi criteria approach

LCA method: Environmental Footprint V3.1

Results

Color pigments: LCI modeling and impact assessment comparison of CMY pigments

Bio-based pigments



Synthetic pigments

