Campus AgroParis-Saclay, Palaiseau (91120)

www.linkedin.com/in/juan-sebastián-rodríguez-flórez-94011446/

Juan Sebastián Rodríguez Flórez

PhD student

juan.rodriguezflorez@agroparistech.fr

Début du projet : 2024

A PROPOS DE MOI

Chemical Engineer and Master of Engineering of the Universidad Nacional de Colombia. Experiencie in process modelling and simulation through the implementation in programming languages and process simulation software.

Équipe IHAC

Interactions Homme – Aliment pour la Conception

Superviseurs : Gwenola Yannou-LeBris, Sandra Domenek, Juliana Serna

Mots-clés

Supply chian, Codesing, Packaging, Sustainability, Multiple Objectives

Methodological contribution to the co-design of packaging reuse loops

Graphical abstract

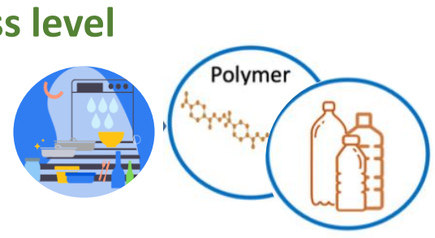
How can a decision support tool facilitate the generation and evaluation of reusable packaging systems across environmental, economic, and social criteria?

Industrial and commercial packaging (ICP)

7 million tones of ICP (reusable and nonreusable)
600 000 tones of plastic ICP through distribution

The implementation of a reusable packaging system requires:

Process level

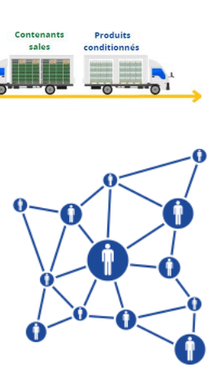


Optimization washing, sanitary controls, number of usage cycles

Logistic level

Creation of a closed-loop logistics network to manage the package.

Stakeholders level



Coordination among different stakeholders (e.g., collectors, washers, poolers, eco organizations)

Create a software tool that helps on these decisions.

Issues/ Challenges

Reduce CO2 emissions, water consumption	Economic performance	Standards	Accessibility	Health security	Traceability

Objectifs

- To develop a decision support tool that enables the creation of reusable packaging scenarios, considering process variables and closed-loop logistics. The tool should enable the evaluation considering multiple criteria
- To develop a methodology, using the previously proposed decision design tool, to enable actors to collaboratively implement a reusable packaging system

Techniques utilisées

- Participative approaches
- Co-design
- Logistics
- Programming
- Process analysis
- LCA

Financeurs & Collaborateurs