

# INTERFACES

## The interfaces between agricultural raw material and processing, a key point for bridging variability of raw materials and versatility of processing for innovative food systems.

### ABSTRACT

Support for the Interfaces project, the objective of which is to create a research continuum between the development of agricultural raw materials and their transformation in order to define the margins of flexibility (technological and economic) that exist with regard to the variability of the raw material.

Two main questions are posed:

- What are the responses of fruits to processing operations?
- How can these processing operations be characterised in order to use them for specific fruits or to refine unit operations?

Knowledge is generated on six points:

- Effect of fruit microstructure on processed fruit characteristics and interactions with unit operations.
- Identification and quantification of variability and heterogeneity through the development of indicators and tools for rapid qualification and integration of operator knowledge from field to plant (WP1)
- How does the interaction between the environment and cropping systems modulate fruit quality at harvest? Study of the impact of carbon and water content on fruit growth and composition. How will this information allow the estimation of fruit variability at harvest and allow the design of agronomic practices to obtain the desired processed fruit? (WP4)
- Effect of the microbial ecosystem as a major cause of unseen variability on the tree-to-plate production chain (interest in microbial communities producing toxic compounds as well as protective species for biopreservation and fermented food production (WP3)
- Consideration of variability in the fruit value chain. What are the issues for the different stakeholders and how can the market be regulated? Are there generic questions that could be used to guide quality identification? (WP5)
- Linking ecophysiology and processing models (WP4)

The project focuses on three fruits subjected to three different types of processing:

- Mango => Drying
- Apple => Puree
- Grape => Wine

Grapes are only concerned by WP1 and 2

The fruits chosen in INTERFACES are examples of typical behaviour:

- Soil and climatic conditions have an impact on fruit quality
- Major impact of fruit characteristics on the finished product
- Possibility of setting up a sorting/reassembly strategy
- Sensitive and known physiological evolution during storage

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**Project type :** PE

**Research units in the network :** HORTSYS MOISA PSH SPO

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**Flagship project :** no

**Project leader :** Catherine Renard Dominique Pallet

**Project leader's institution :** INRA-INRAE CIRAD

**Project leader's RU :** SQPOV QUALISUD

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**Funding :** Labex