



KU LEUVEN


**UNIVERSITEIT
GENT**

ILVO

Instituut voor Landbouw-,
Visserij- en Voedingsonderzoek

 hogeschool
VIVES

FF
FLANDERS'
FOOD

Introduction VeggieChain project (2020-2024)

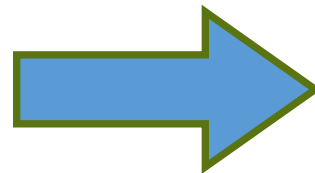
**cSBO PROJECT
(HBC.2019.0131)**

 **VLAIO**  **FF**
FLANDERS'
FOOD

Clusters for Growth

Maarten Uyttebroek
Flanders' FOOD
30/01/2023

Who we are and what we do



INNOVATION

STRATEGY

COLLABORATION



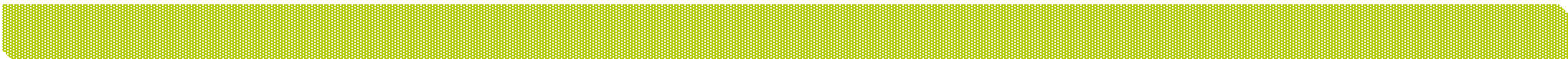
FLANDERS'
FOOD

Spearhead cluster Agrofood

- 300 industrial members
- 10 knowledge institutions
- 800 active companies in our network
- 70 ongoing projects



FLANDERS'
FOOD



4 programs



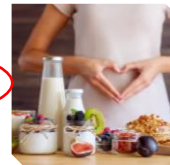
Resilient and sustainable agrifood systems

- Potato to fries
- Grain to bakery product
- **Vegetable to veggie**
- Pig to cold cuts



Personalised food and healthy diets

- **Nutrition**
- Healthcare



World class food production

- Food safety
- Towards the food factory of the future
- Food packaging of the future
- Eco-production



New and shifting resources

- Protein shift
- By-products

VeggieChain

From idea to new product, process, company

MicroWavePilot



Plant Protein Pilot



Belgian Fries Pilot



Pilot Bakery



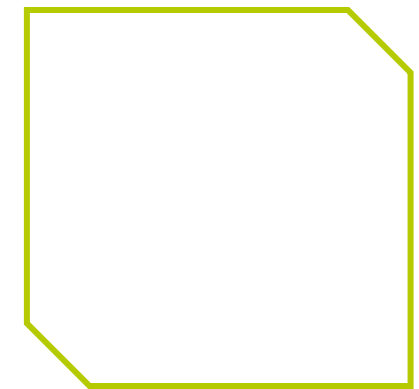
Food Pilot



FR&D Hall



Pilot Bakery





Project rationale (slides @Tara Grauwet, coordinator KU Leuven)



HOW DO WE GET MORE VEGETABLES ON THE PLATE OF THE CURRENT CONSUMER?

Project rationale





Strategic demarcation VeggieChain: quality attributes

(Off-)flavour
Colour
Structure



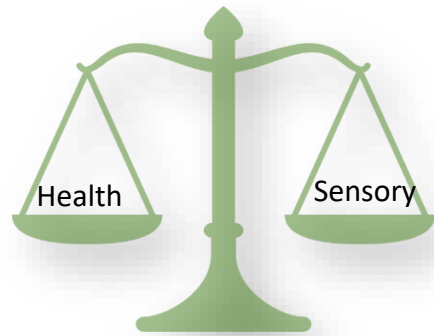
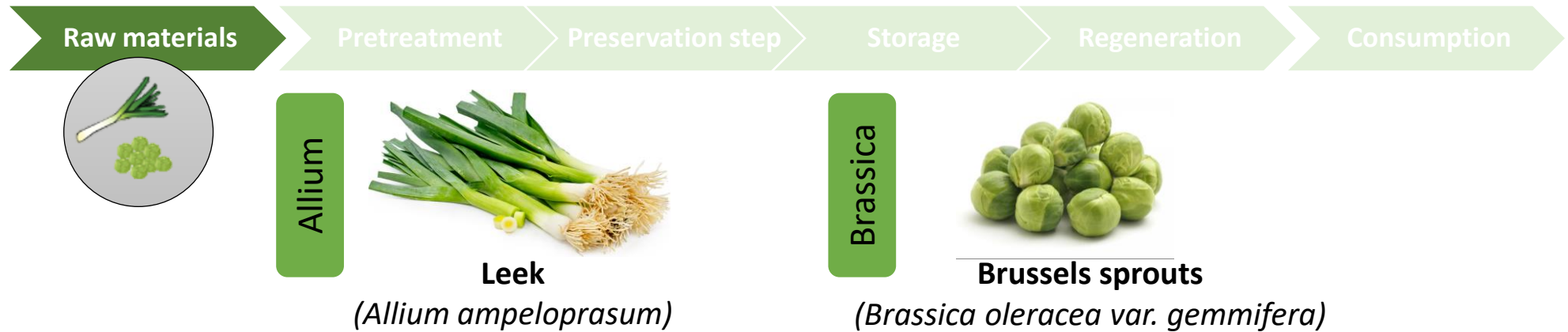
Sensory

Health

Phytochemicals
Micronutrients



Strategic demarcation VeggieChain: matrices



COMMODITIES IMPORTANT FOR FLANDERS

Production in 2019 for industry

Leek	43 kton
Brussels sprouts	47 kton



UNDERSTUDIED

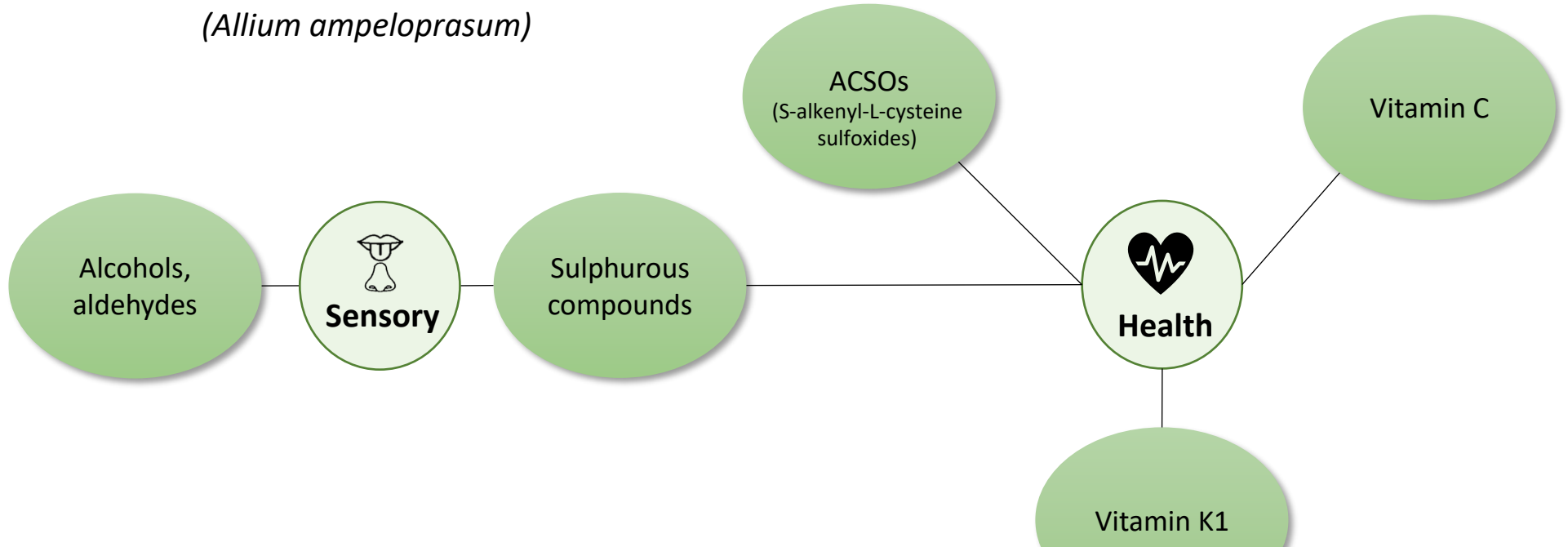


Strategic demarcation VeggieChain: matrices



Leek
(Allium ampeloprasum)

INTERESTING COMBINATION OF HEALTH RELATING AND FLAVOUR COMPOUNDS



NATURALLY PRESENT, PROCESS-INDUCED FORMATION OR DEGRADATION (ENZYMATIC, CHEMICAL, PHYSICAL LOSS)

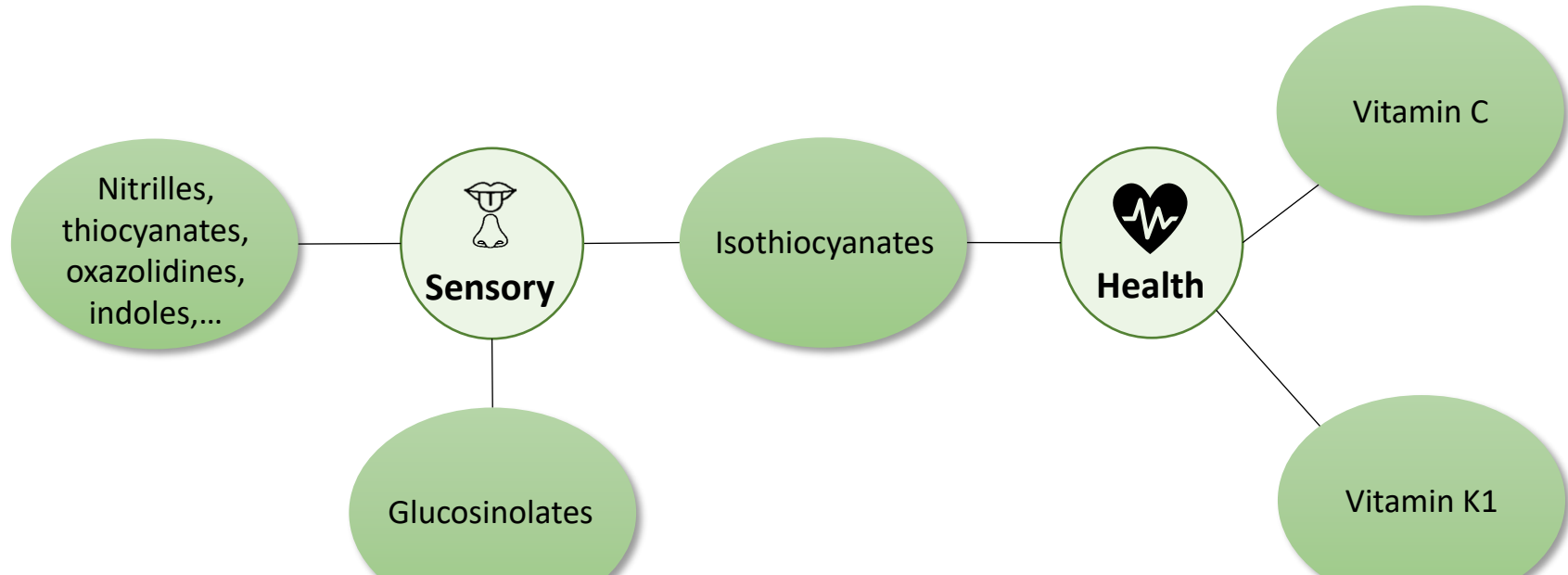


Strategic demarcation VeggieChain: matrices



INTERESTING COMBINATION OF HEALTH RELATING AND FLAVOUR COMPOUNDS

Brussels sprouts
(Brassica oleracea var. gemmifera)



NATURALLY PRESENT, PROCESS-INDUCED FORMATION OR DEGRADATION (ENZYMATIC, CHEMICAL, PHYSICAL LOSS)

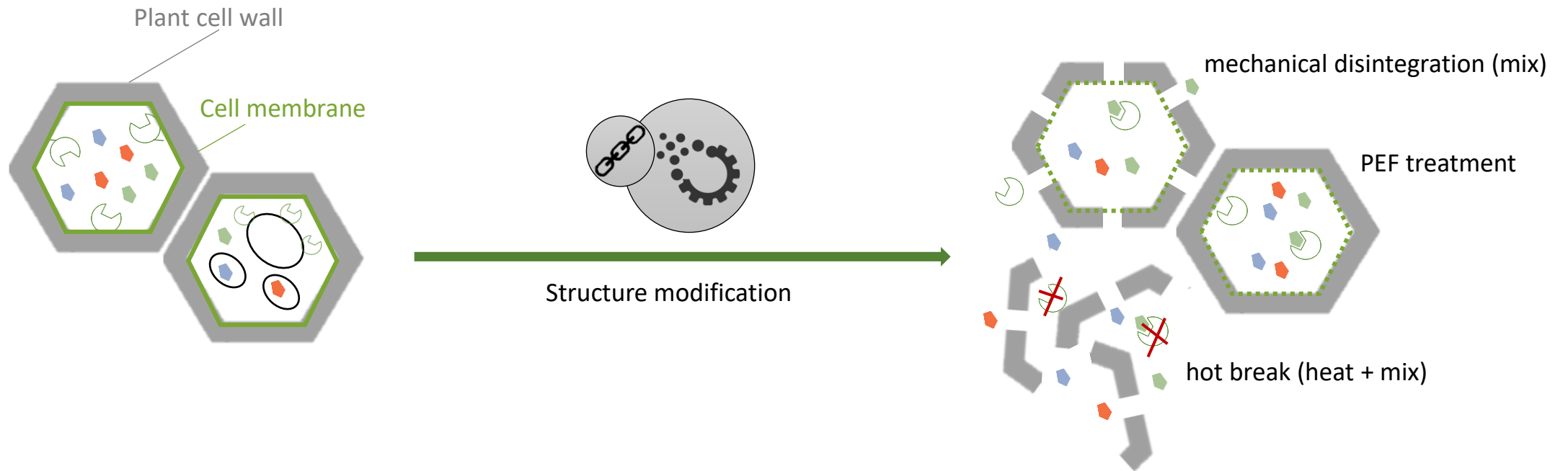


Strategic demarcation VeggieChain: structure importance



GOAL: to control (bio)chemical reactivity

@Sophie Delbaere, KU Leuven: PEF-induced membrane permeabilization to steer the volatile profile in vegetables

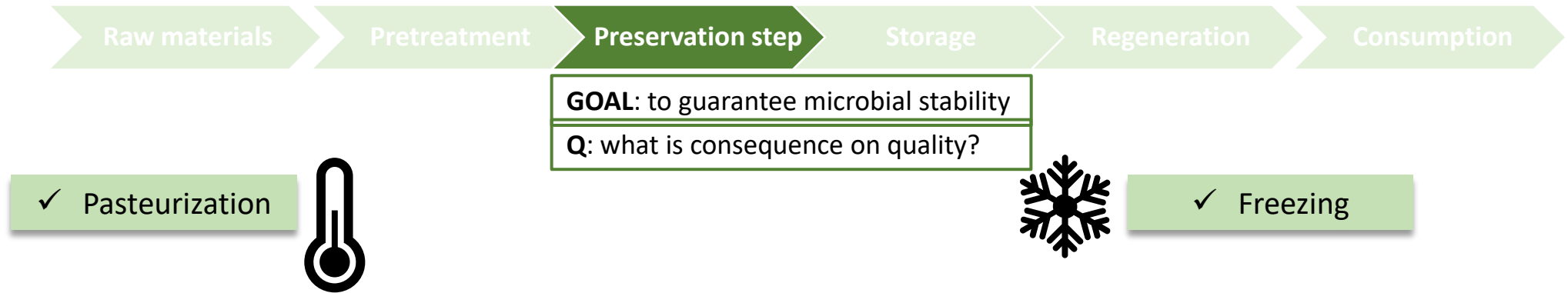


STRUCTURE AS A TOOL TO STEER REACTIVITY



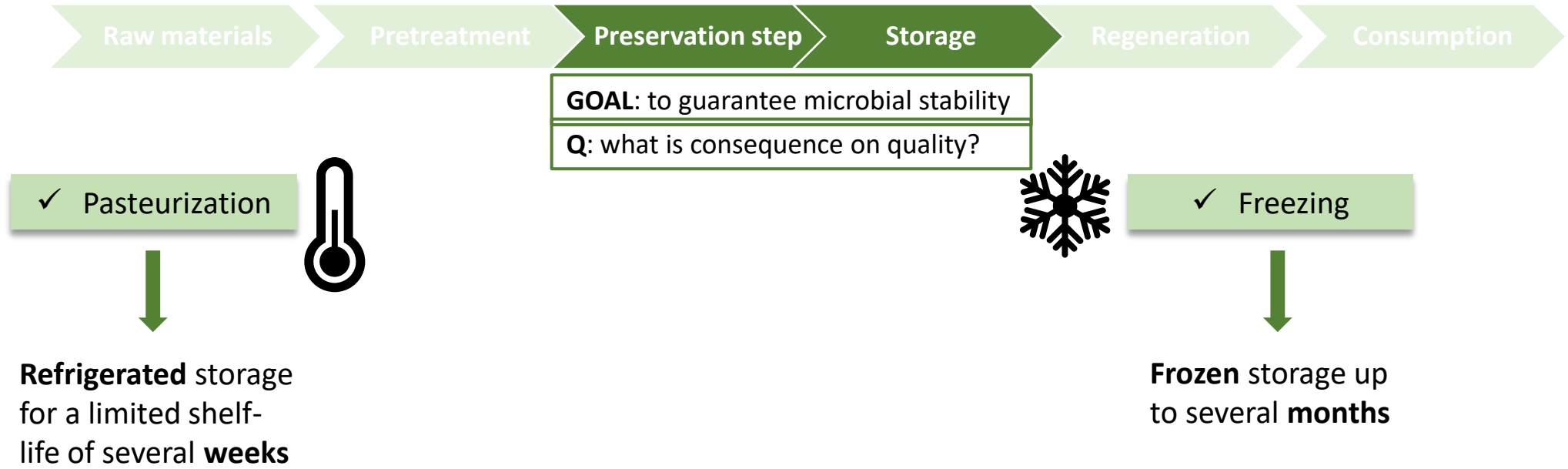


Strategic demarcation VeggieChain: processing steps





Strategic demarcation VeggieChain: processing steps

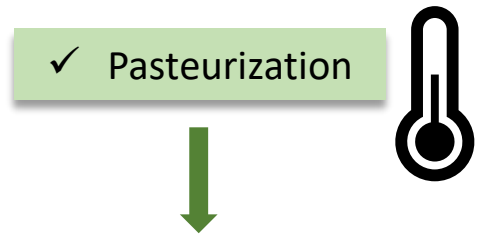




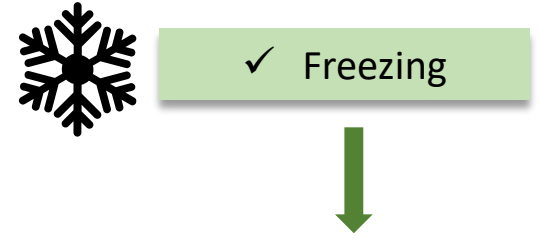
Strategic demarcation VeggieChain: processing steps



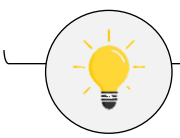
GOAL: to prepare for consumption



Refrigerated storage for a limited shelf-life of several **weeks**



Frozen storage up to several **months**



✓ Conventional heating

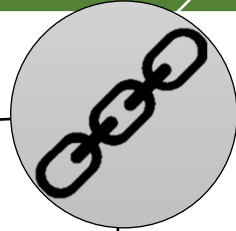


✓ Microwaving

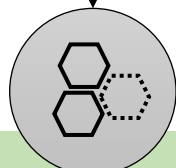




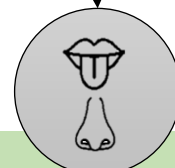
Strategic demarcation VeggieChain: processing steps



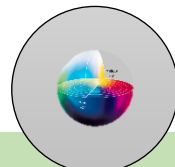
Health



Structure



Flavour



Colour

QUANTITATIVE

- ✓ Quality attributes
- ✓ Multivariate approach
- ✓ Chain variables

→ up-scaling challenge



Sensorial aspects





Validation @ pilot scale





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Thank you for your attention!

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