Metagenomic analysis as a tool to better characterize the bacterial flora of food and food products

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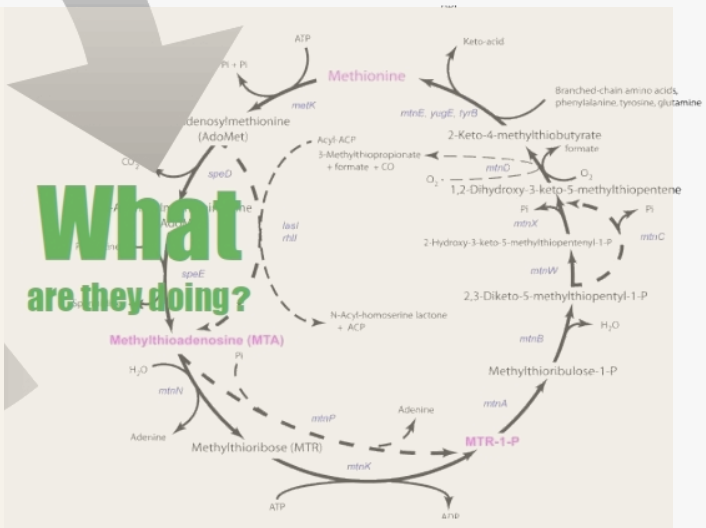
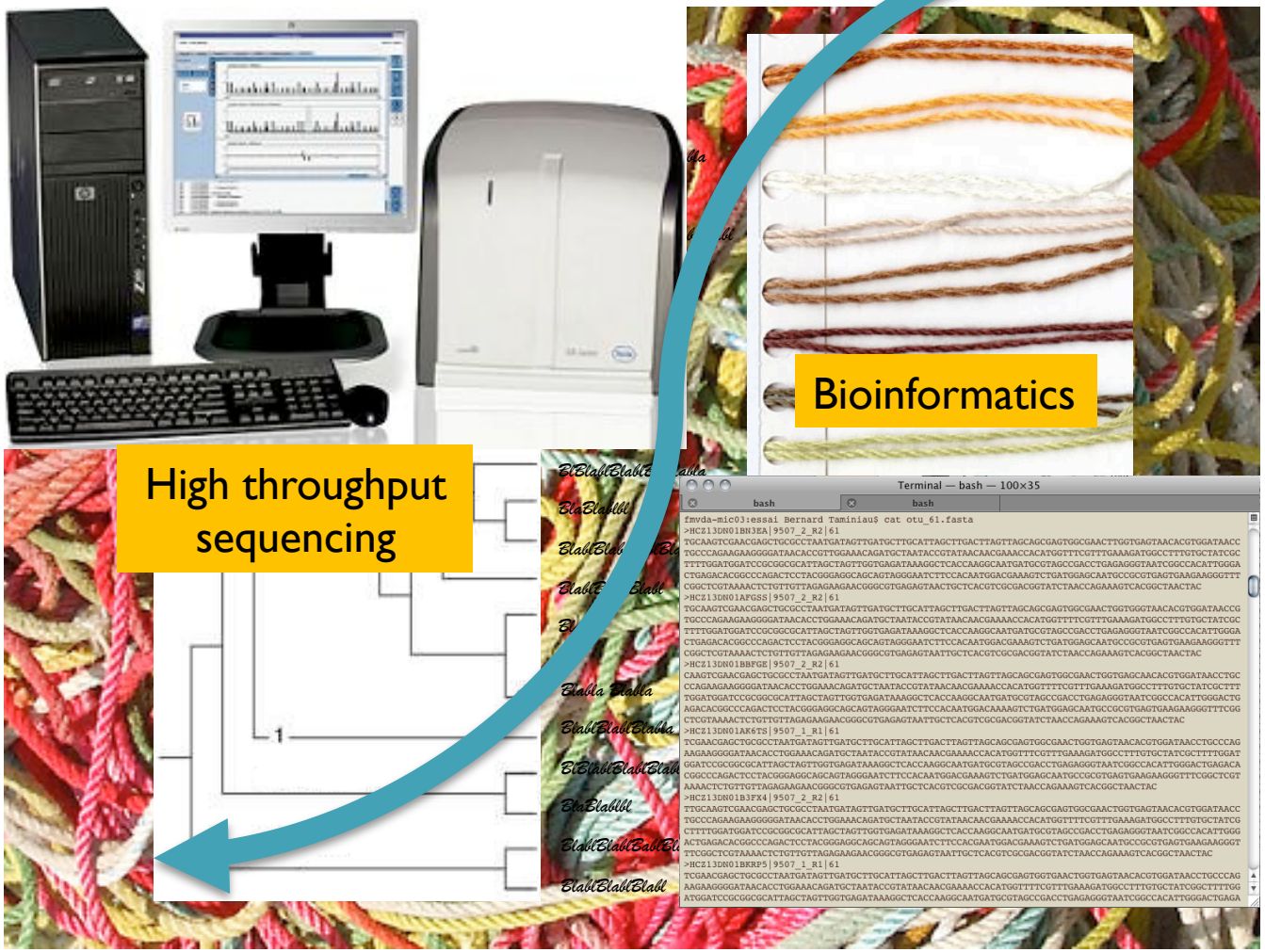
Metagenomics

Targeted analysis

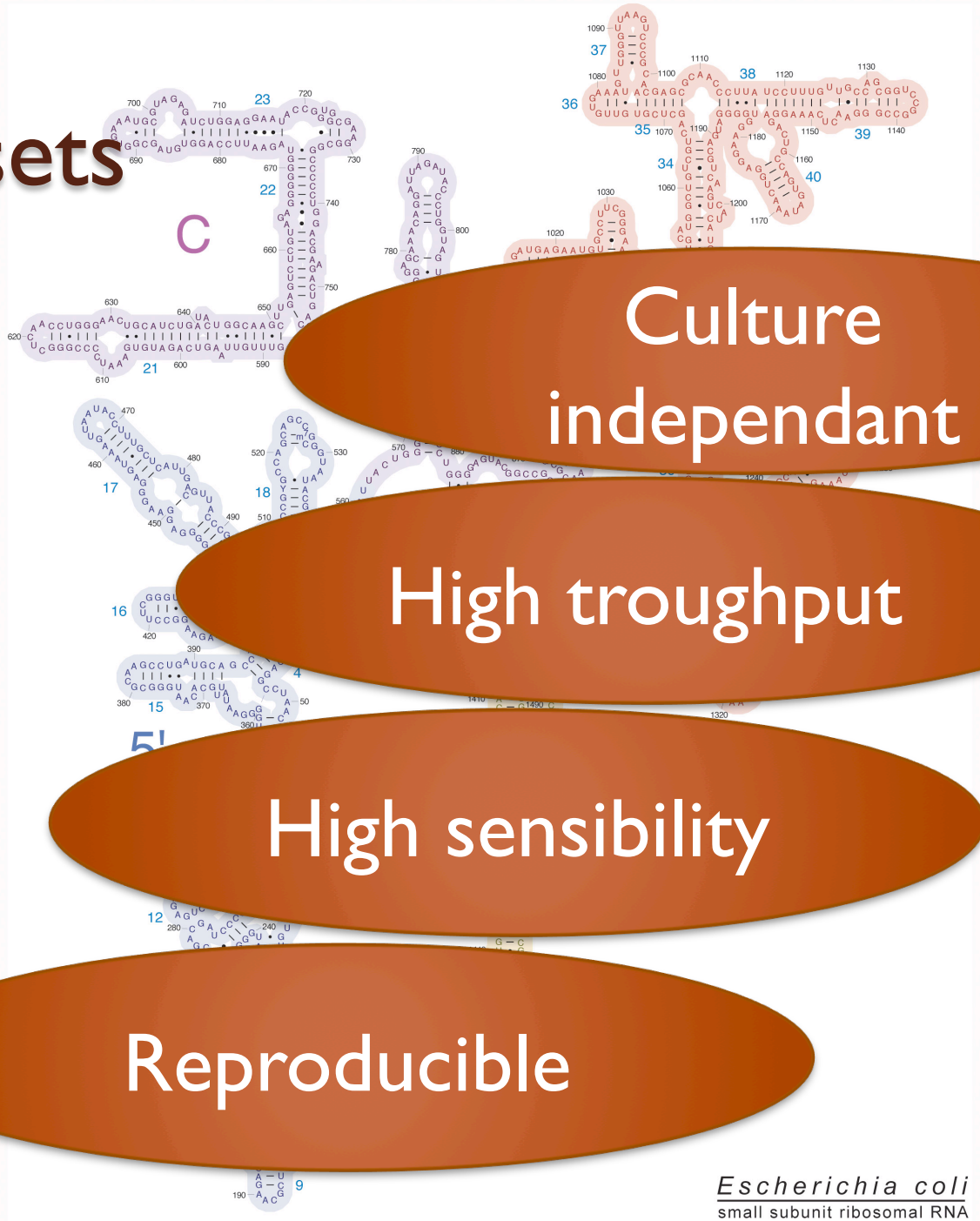
Functional analysis



Targeted Metagenomics



Assets



- Culture independant
- High troughput
- High sensibility
- Reproducible

Escherichia coli
small subunit ribosomal RNA

Durability Assay for two meat based matrices

Workplan

WP_D0

AIR - 4°C → WP_FW_D6

30% CO2 70% N2 – 4°C → WP_MAP30_D21

50% CO2 50% N2 - 4°C → WP_MAP50_D21

MM_D0

AIR - 4°C → MM_FW_S4_D3

AIR – 4-8°C → MM_FW_S4-8_D3

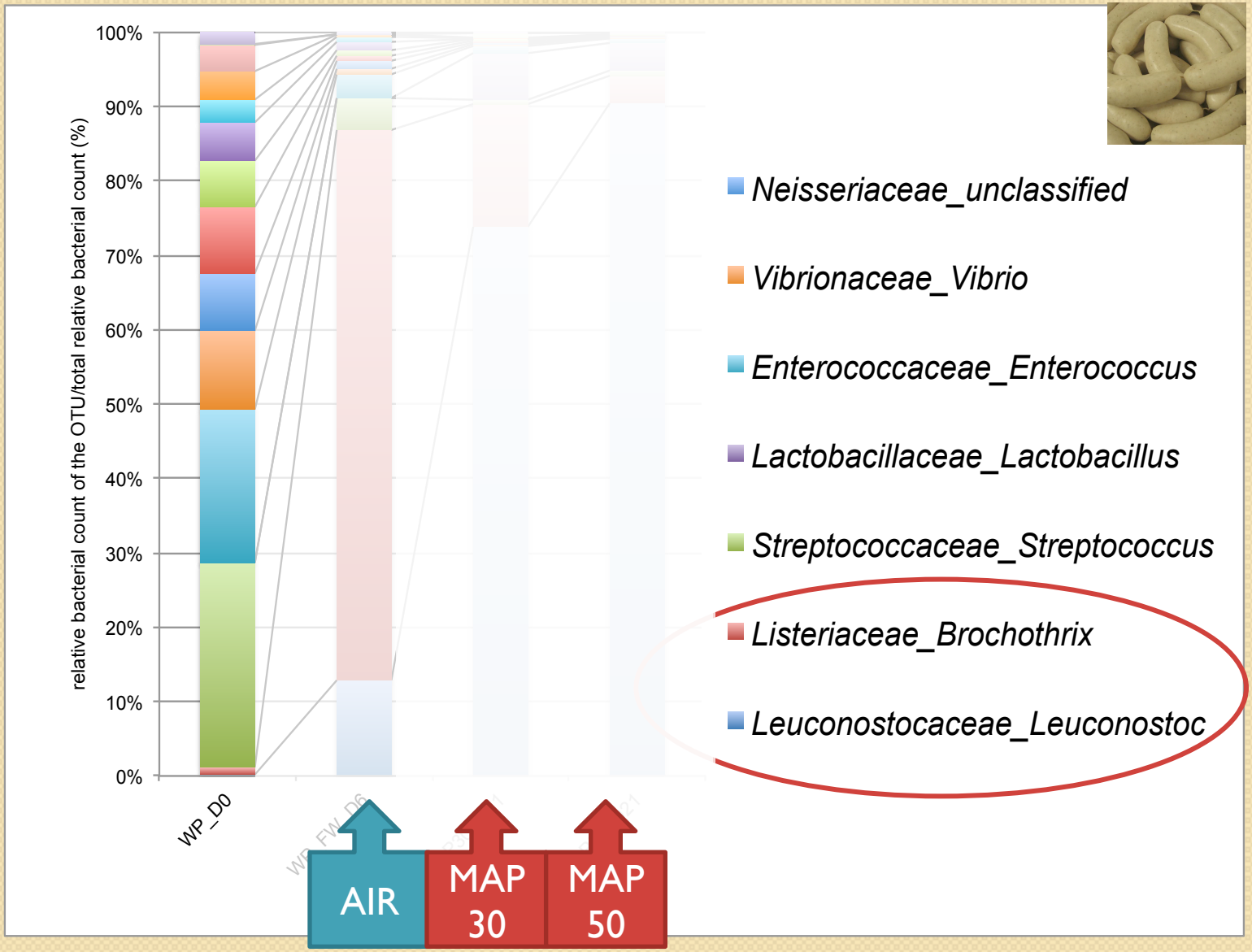
AIR – 12°C → MM_FW_S12_D3

30% CO2 70% O2 – 4°C → MM_MAP_S4_D6

30% CO2 70% O2 – 4-8°C → MM_MAP_S4-8_D6

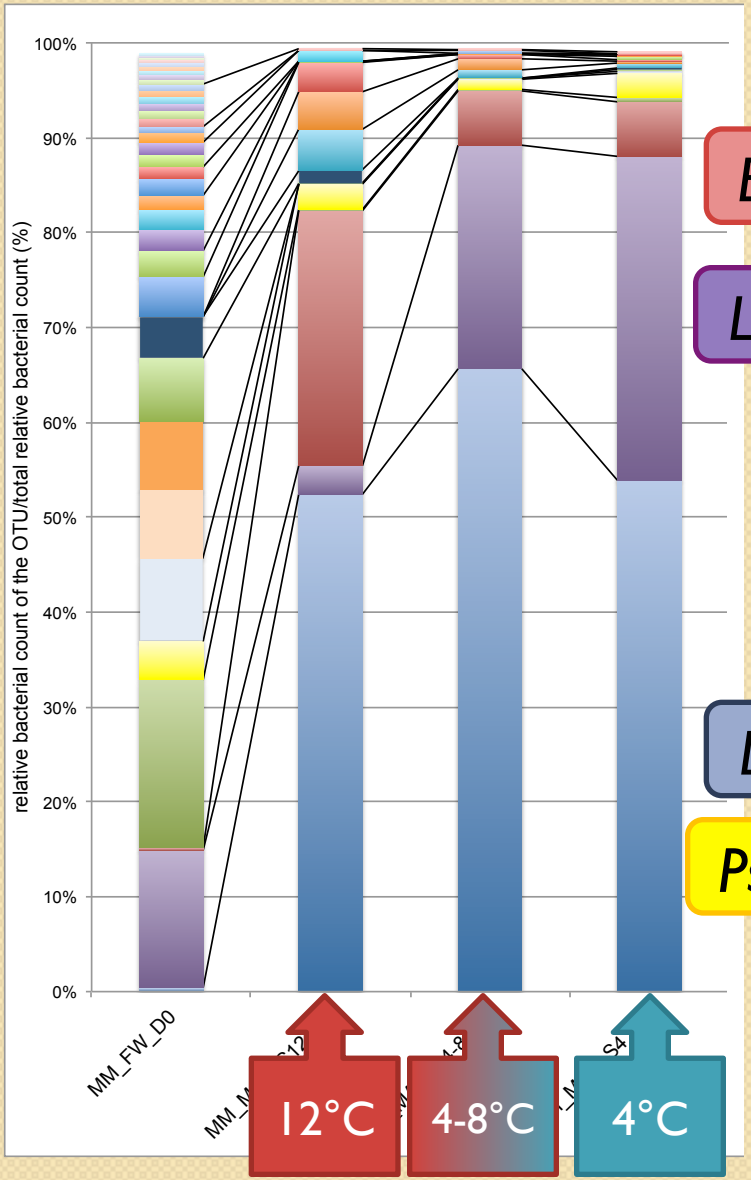
30% CO2 70% O2 – 12°C → MM_MAP_S12_D6

WHITE PUDDING : POPULATIONS > 1%



MINCED MEAT : POPULATIONS >1%

MAP



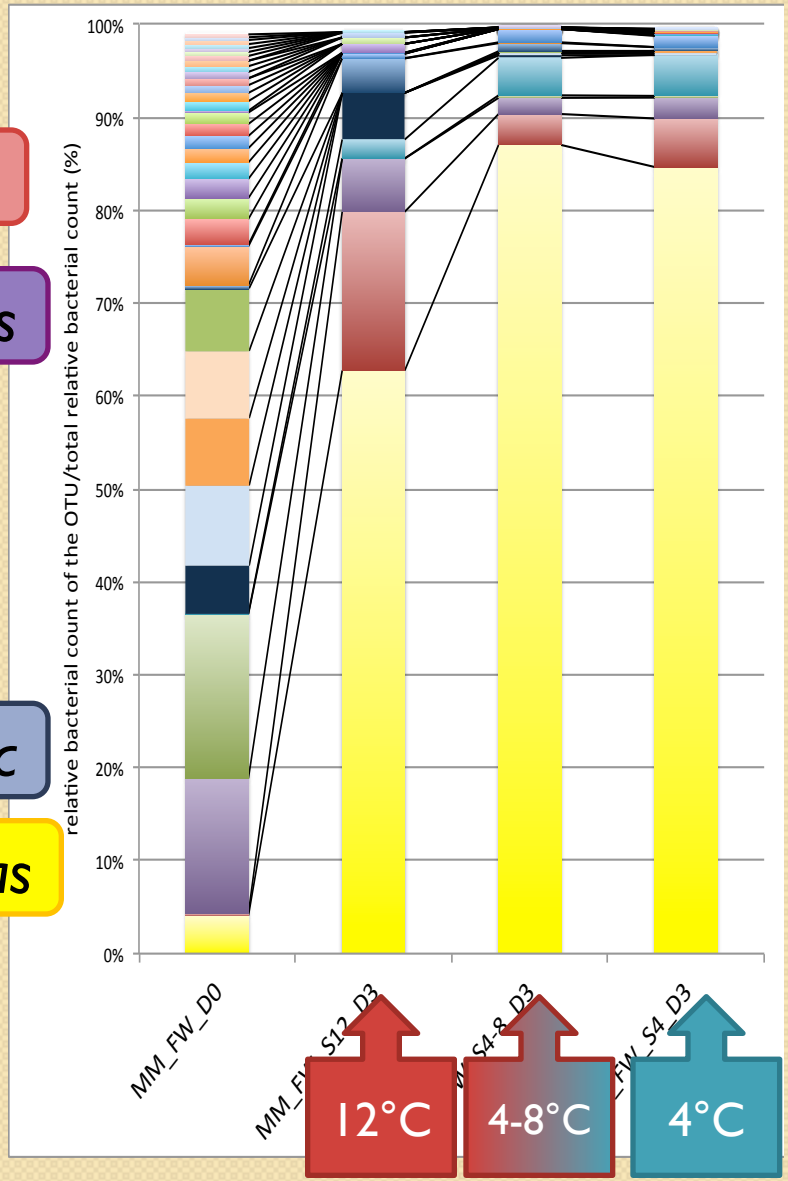
Brochothrix

Lactobacillus

Leuconostoc

Pseudomonas

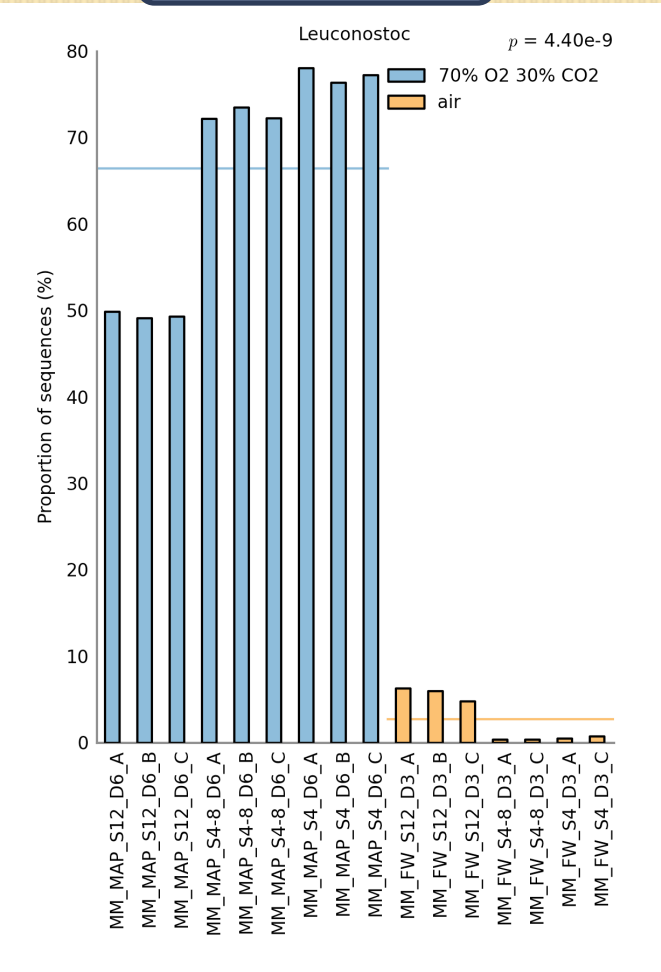
AIR



THE RESULTS ARE REPRODUCTIBLE

Population percentage

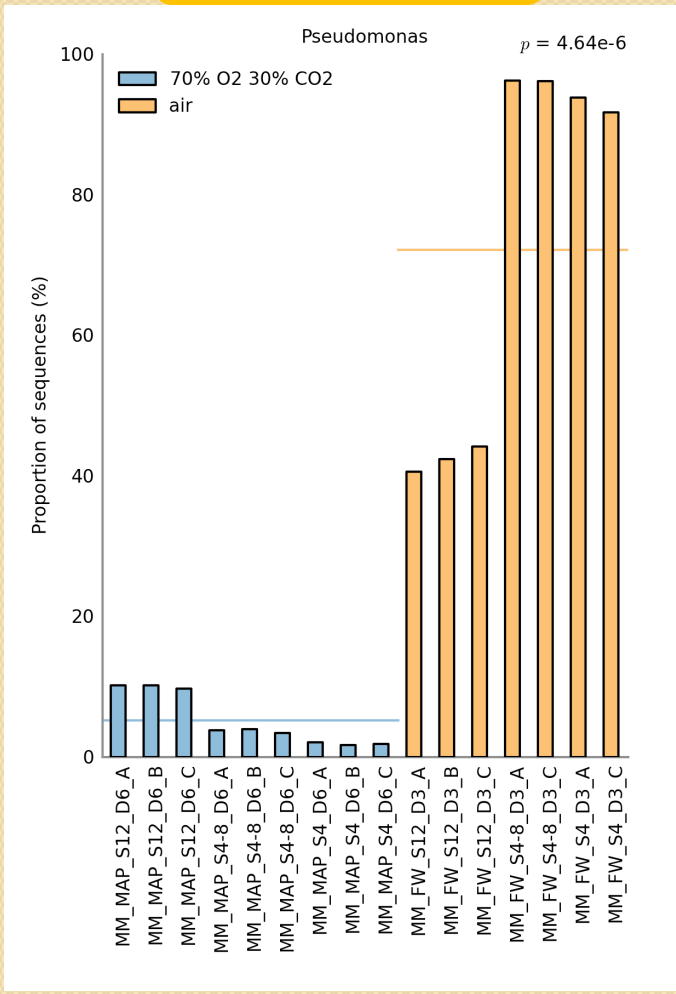
Leuconostoc



MAP

AIR

Pseudomonas



Quality evaluation of vacuum packed beef meat in Belgium

- « Ready to be sliced » reconditioned in sell units
- Logistic asset for distributors

Marked difference between **belgian blue meat** and **imported meat**

	Belgian Blue	**Australian beef meat**
Shelf life	60 days	> 120 days

Belgian Blue Meat

australian Meat

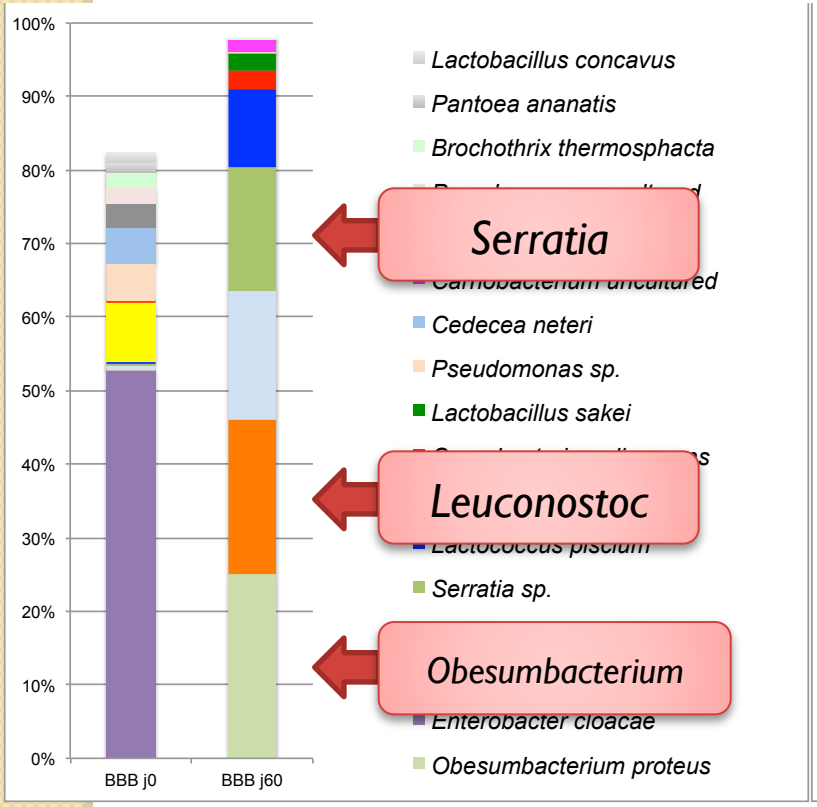
Day 0

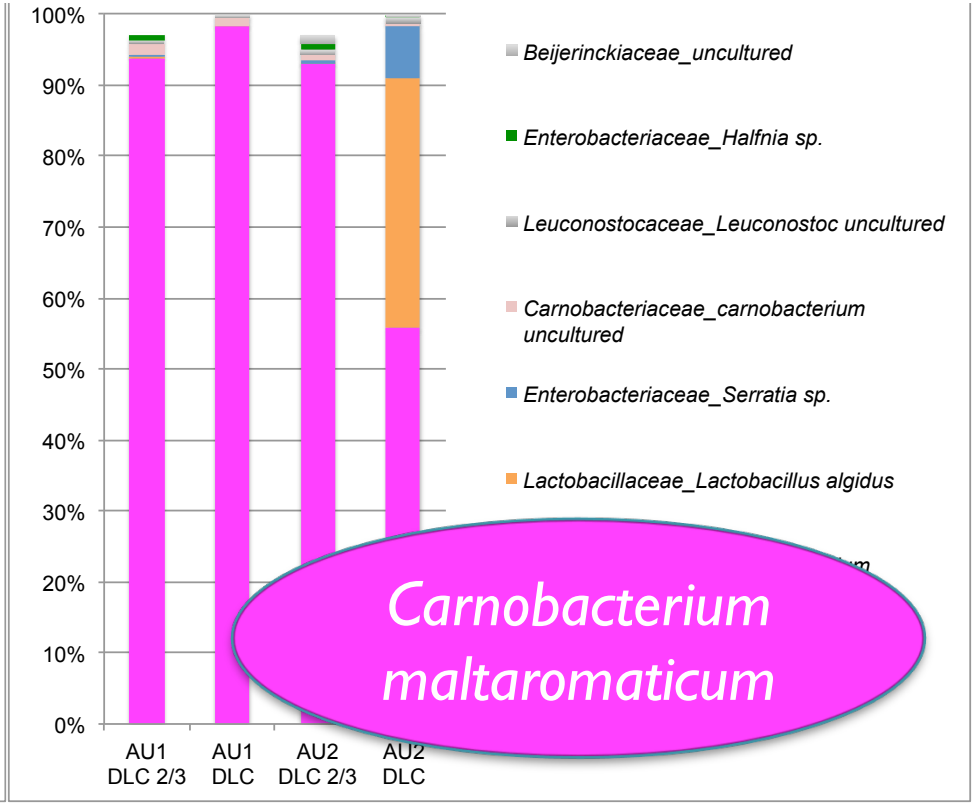
Day 60

Day 80

Day 120

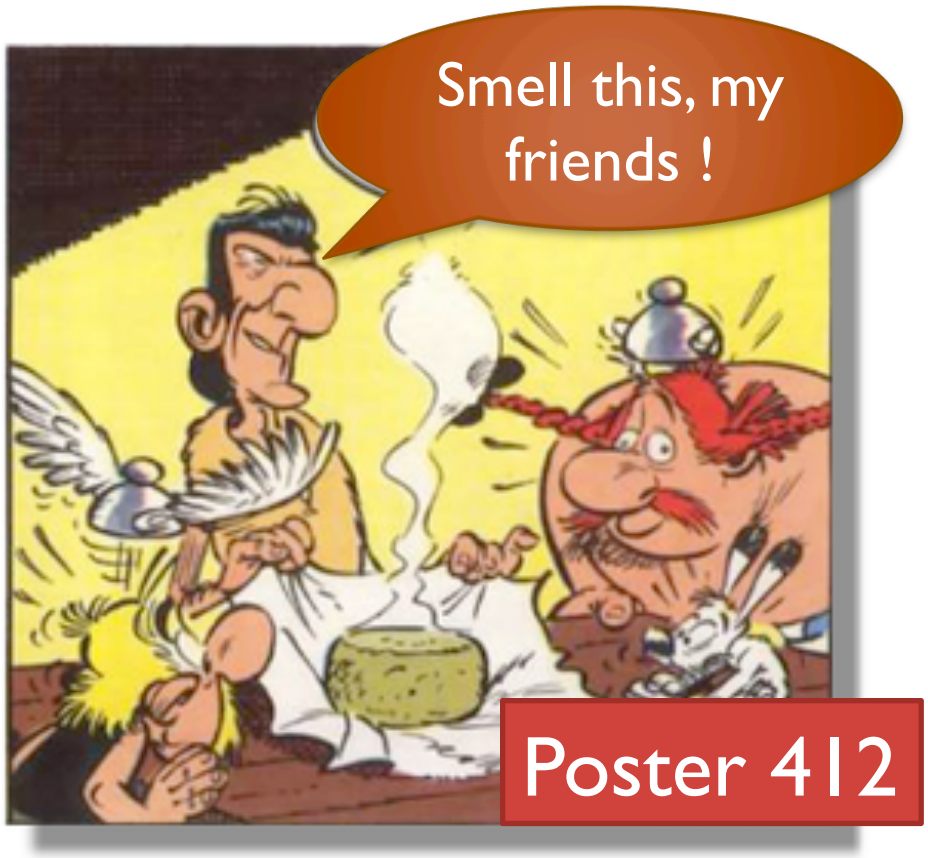
Populations >1%





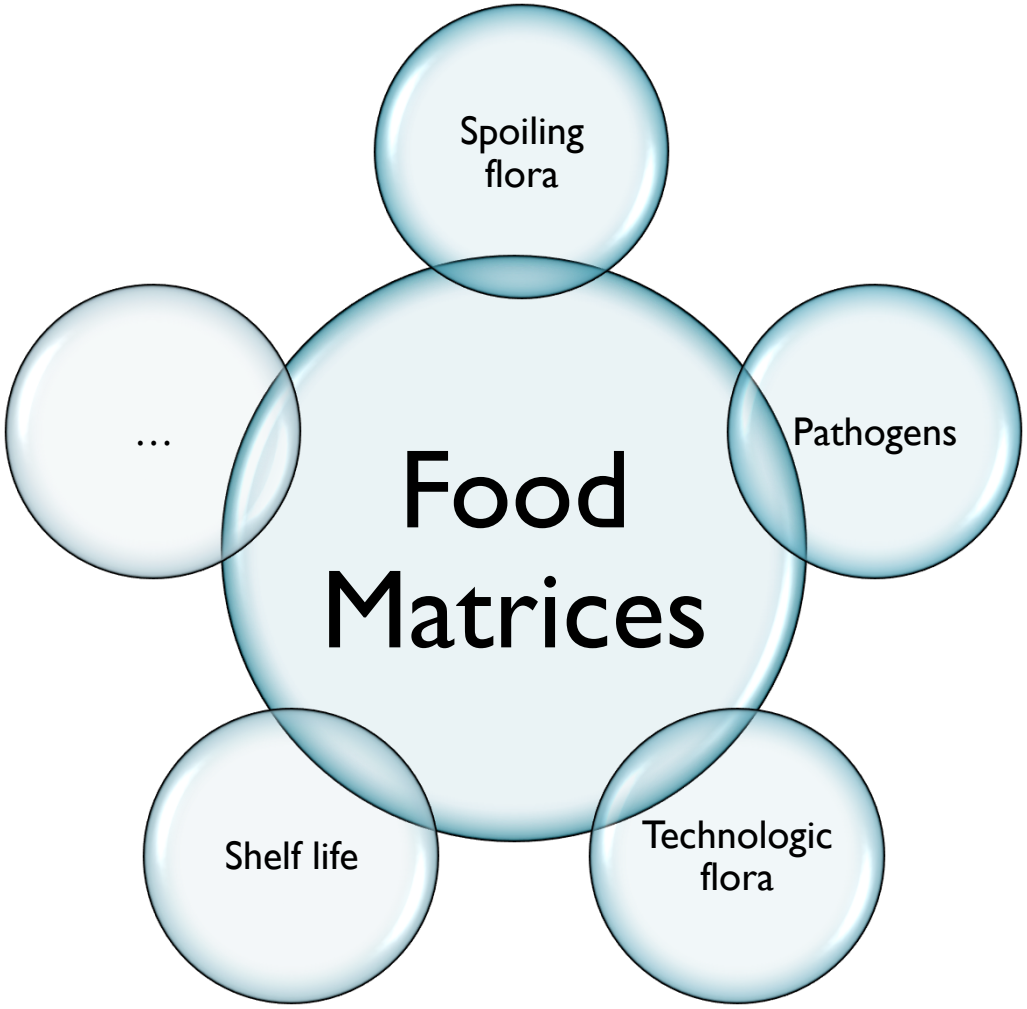
We investigated other matrices…

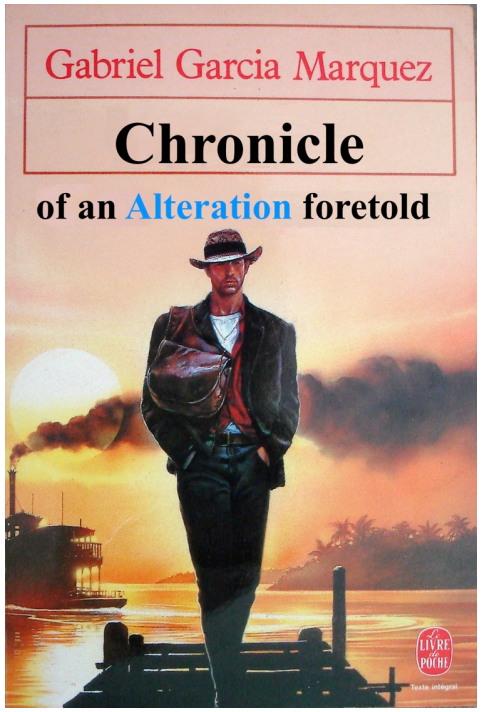
Poster 413



Poster 412

Large prospects





Technical and analytical aspect

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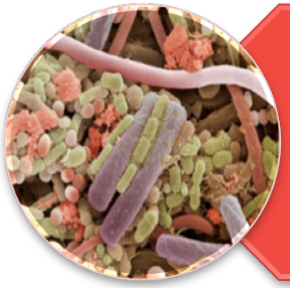

Microbiological interpretation

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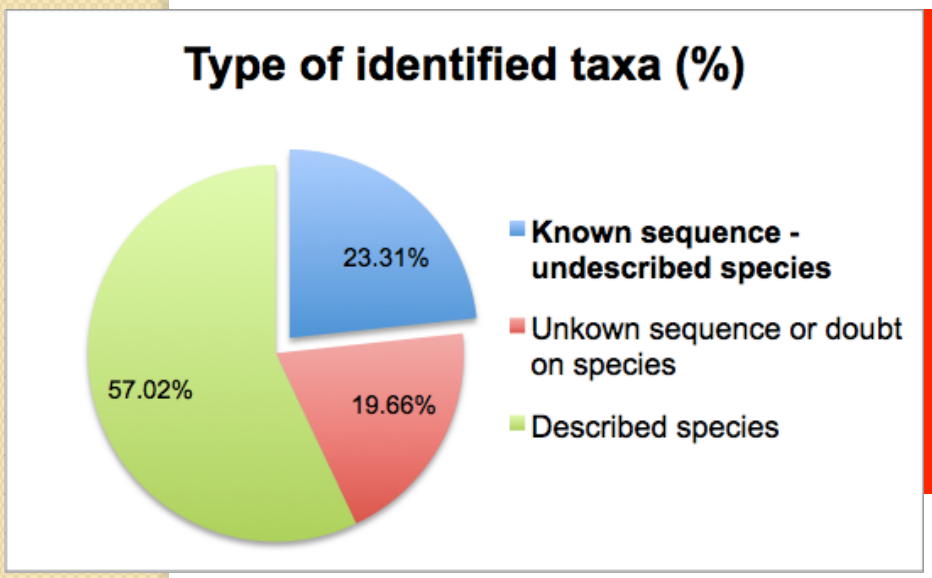

- Lack of knowledge on microbes
- Bright future for characterization of yet unknown bacteria
- Crucial need of specialists of the identified bacterial taxa

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