Food microbiology

**Research Field and Subjects**

The major issues facing food microbiology can be summarised as follows. On one hand, how to reduce or prevent microbial infections, how to quickly and accurately recognise potential contamination and what strategies to use to avoid reiteration of microbial outbreaks? On the other hand, how to improve the use of microorganisms in food production processes? In order to face these issues more efficiently, the laboratories of Mycology and of Food and Environmental Microbiology, have developed complementary expertise in the fields of traceability, food quality and biosafety to match industrial quality requirements. Their activities include:

- Detection and characterisation of pathogenic or industrial bacteria to assess their presence and fate throughout the production, processing and distribution steps of food products.
- Genetic and genomic characterisation of virulence factors from the *Bacillus cereus* group.
- Molecular typing of food pathogens, with particular emphasis on *Escherichia coli* O157:H7, *Listeria monocytogenes* and *B. cereus*.
- Identification and biochemical studies on mycotoxins to prevent their production in food matrices.
- Screening of strains for the production of high added value compounds (flavours, enzymes, ...).
- Preservation of industrial strains for major application such as beer, wine or cheese production.

**Products and Services**

- Detection and enumeration of microorganisms in food and environmental matrices and production lines
- Identification of industrial process or food contaminants
- Molecular typing of food pathogens
- Targeted screening of bacterial and fungal strains
- Mycotoxin detection in food matrices
- Food quality consulting for SME

Food Microbiology reference laboratory in Requasud, a network providing advises and technical support to SME industries in the Walloon Region

**Main Equipment**

- Capillary Electrophoresis (CE)
- Gas Chromatography (GC)
- Pulse-Field Gel Electrophoresis (PFGE)
- L2 and L3 biosecurity laboratories
- Scanning Electron Microscope (SEM)
- DNA Sequencer
- Temperature Gradient Gel Electrophoresis (TGGE)

**Representative References**


**Partnership**

Requasud: a network providing advices and technical support to SME in Wallonia

**STAFF**

Total: 25

**KEY WORDS FOR R&D**

Bacillus spp., food quality and biosafety, molecular epidemiology, mycotoxins, opportunistic microorganisms, pathogens, quality consulting, secondary metabolites, transposable elements, vanillin, virulence factors

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