

IDENTIFICATION

Course code : E3AG5QH3
ECTS : 3

DURATION

Lectures : 8
Tutorial classes : 28
Labs : 16
Total : 52

Project :
Personnal work :

ASSESSMENT

Individual knowledge assessment, group oral presentation, group lab report

TEACHING MATERIALS

Course materials, standards and regulatory texts

LANGUAGE

English

CONTACT

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UE : UE5-QHSE

COURSE : SDA : Pathogens and Spoilage

SCOPE OF THE COURSE

OBJECTIVES

Understand the main hazards related to the sanitary safety of a product

COMPETENCE AND SKILLS

Acquire scientific and technical knowledge related to food safety and spoilage — Understand hazards and the assessment of microbiological risks linked to food preservation — Learn hazard analysis methods and propose microbiological criteria — Understand microbiological spoilage and the microorganisms responsible for it

PROGRAM

Main parameters influencing microbial growth both qualitatively and quantitatively (redox potential, pH, water activity, temperature, medium composition, interactions between microbial flora) — National surveillance of infectious diseases, major pathogenic bacteria responsible for foodborne infections (*Salmonella* spp., *Listeria monocytogenes*, *Campylobacter* spp., *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus*, *Clostridium perfringens*, *Clostridium botulinum*), other agents potentially involved in foodborne outbreaks (*Trichinella* spp., Norovirus), spoilage flora (lactic acid bacteria, yeasts and moulds) — Food spoilage : microbial development based on matrices and preservation conditions, microbiological, chemical and biochemical spoilage — Analysis methods : detection, enumeration, identification using classical microbiology

BIBLIOGRAPHY

ANSES fact sheets (fact sheets describing biological hazards transmitted by food) — Regulation (EC) No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs — Santé Publique France (list of notifiable diseases)

REQUIREMENTS

Basic knowledge of cells and microorganisms : microbial growth and trophic types — Food constituents