

## **Module: One Health in Food Safety**

**Module coordinator: Artur Xavier Roig**

### **Module outline**

In this module, the fundamental elements of food safety and security will be taught under the One Health approach through theoretical and practical sessions or by doing practical cases. The main food borne zoonoses, the factors of its rise and the consequences in human health will be studied. The reservoirs, the most likely ways of contamination and its impact on the different types of food will also be presented. The main politics related to food safety will be discussed from national, European and global perspective. Finally, risk evaluation and contaminant detection from public health agents and food industry will be taught during the practices.

### **Topics**

Evolution of management and communication politics in food safety and security: principles and proceedings for risk assessment in food safety; management and communication of risk in food safety; the concept of “Food defense” in food borne zoonoses.

Evolution of food borne zoonoses in Spain, Europe and World: effect of globalisation in food borne zoonoses; control tools in primary production; on-line tools for food-borne outbreaks information.

Food borne bacteria zoonoses: Salmonella spp., Campylobacter spp, *Yersinia enterocolitica*, *Listeria monocytogenes*, *Escherichia coli* VT, *S.aureus* and other coagulase-positive Staphylococcus; consume of toxins from *Clostridium botulinum*, *C. perfringens* and *Bacillus cereus*.

Food borne parasitistic zoonoses: protozoa; trematodes and cestodes; anisakiasis, trichinellosis and other zoonoses caused by nematodes.

Other and new food borne agents: virus like hepatitis A, calicivirus and noroviruses; prions; mycotoxicosis and other biotoxines.

The three pillars of Food Safety and Security: food availability; food access; food utility and stability.

Practical sessions in informatics: tertiary predictive models for process validation and risk assessment in zoonoses; data assessment from “challenge tests”

Practical sessions in laboratory: protocols for the evaluation of the presence of pathogenic microorganisms in food; use of microbiological biomarkers.

### **Learning : 6 ECTS**

Lectures: 25h

Seminars: 10h

Practices: 5h

Independent work: 110h

### **Assessment**

75% Resolution of practical exercises

25% Review of a research paper