What do we mean for “Agri-Food”?

Basically - Food of non-animal origin, as:

- Fruits and Vegetables
- Roots and Tubers
- Cereals
- Herbs and Spices
Integrating food safety and nutrition in agri-food systems by:

- Guidelines and regulations on safety and sustainability of agri-food production;
- Knowledge on risks, their mitigation and management;
- Design of agri-food production systems to reduce losses and increase nutrition;
- Evaluation of consumers’ perceptions and awareness and development of correct communication strategies;
- Ensuring fair-trade practices, market access and income generation across agri-food value chains.

WHAT IS THE AGRI-FOOD SAFETY?
01 CHALLENGES

- Develop **sustainable** production systems
- Produce **nutritious food** and contribute to **healthy diets**, especially in low income countries
- Ensure **quality and safety of raw material** and protect consumers’ health
- **Avoid losses** in post-harvest
- Ensure **traceability** and avoid frauds along the agri-food markets
LIST OF CLASSES, 2nd Year

01 Good agricultural practices and identity preservation
   3 CFU
   Prof. Enrico Francia

02 Animal pests in stored agri-food products and their management
   6 CFU
   Prof. Lara Maistrello

03 Biotechnology and safety aspects of vegetable-based foods
   3 CFU
   Prof. Maria Gullo

04 Post-harvest losses and their management
   6 CFU
   Prof. Emilio Stefani

04 Mycotoxigenic fungi in agri-food and pesticide contamination: analysis and risk management
   6 CFU
   Prof. Emilio Stefani and Prof. Antonio Prodi
LIST OF CLASSES, 2nd Year - free choices

05  Chemometrics
    6 CFU
    Prof. Marina Cocchi

06  Coding in R for data analysis
    3 CFU
    Prof. Anna Maria Mercuri

07  Ethnobotany: the role of plants in our life
    2 CFU
    Prof. Anna Maria Mercuri
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Who will be the Agri-Food specialist?

- **A professional** involved in the development and implementation of **international regulatory issues** concerning agri-food safety.
- **A skilled coordinator** of technical personnel that supervises production, supply and handling of raw materials.
- **A risk manager** able to **address problems and emergencies** that may arise along any step of the agri-food production chain.
- **An excellent communicator** that will play a key role in the **dialogue** among policy makers, companies, farmers, consumers.
Myth Busting: A recent survey from the Consumer Reports National Research Center of 1,050 Americans found that consumers have some misconceptions about pesticides and organic produce.

- 43% believe that it’s more important to buy local than organic.
- 37% are concerned about pesticides getting into the water supply.
- 47% believe that peeling can reduce or remove pesticides.

Source: Consumer Reports Inc., USA
Post-harvest losses and their management

"Do you not understand that one needs a little more than nothing in order to exist? " - Jean Baudrillard, La société de consommation, Paris, 1970 (free quoting of Shakespeare, King Lear, Act 2, scene 4)

The issue

The post-harvest system should be thought of as encompassing the delivery of a crop from the time and place of harvest to the time and place of consumption, with minimum loss, maximum efficiency and maximum return for all involved. (D. Spurgeon: The Hidden Harvest, 1976).

Course outcomes

Knowledge of the value chain for Agri-Food produce: quality indicators and safety issues.

Knowledge on factors and reasons for post-harvest losses and approaches for their mitigation and management.

Introduction to crop physiology as a subject to ensure agri-food safety and prevent loss reduction.

Knowledge of some important disorders and diseases affecting fruits and vegetables in post-harvest and methods for their management.
Mycotoxigenic fungi in agri-food and pesticide contamination: analysis and risk management

The issue

Mycotoxins? What are they? Consumers’ awareness and perception say: they do not exist.

And Pesticides? Oh my good Lord, they are killing us all.

Do you really know how many and how much pesticides we introduce through each meal?

Multiresiduality: the real challenge.

Course outcomes

Knowledge of the mycotoxigenic fungi, their epidemiology, and their control.

Knowledge of the most important mycotoxins, their detection and indications for their management in food and feed.

Knowledge on the “real” nature of pesticides: toxicology and risk matrix.

Introduction to the environmental toxicology.

Cumulative risk assessment of pesticides.

Consumers’ perception and indications for a correct communication strategy to face mycotoxins and pesticides risks in food and feed.

Knowledge of the RASFF: the European Alert System for Food and Feed.
Biotechnology and agronomy for safety and identity preservation of agri-food products

The issue

Agri-Food Security and Safety: Combining good agricultural practices (GAP) and identity preservation (IP) in the different agricultural systems is essential. Additionally, biotechnology and safety aspects are crucial when applied to plant-based foods along the value chain. A comprehensive approach is needed.

Course outcomes

Knowledge of GAP for the management of phenotypic and genotypic variability in different agricultural production chains.

Knowledge of the main methods of traceability and identity preservation of agri-food products in the value chains.

Knowledge of different vegetable fermented foods/beverages and the main microorganisms responsible for fermentation processes.

Knowledge of bioprocesses management considering raw materials, microorganisms, propagation methods and process parameters.
Animal pests in stored agri-food products and their management

The issue

Animal pests infest stored agri-food products, causing serious quantitative and qualitative damage and specific health issues. The protection of food from pests is largely underestimated. Producers are discredited. Chemical control is NOT a viable/sustainable option.

Course outcomes

Knowledge of the main animal pests of stored foodstuffs, the damage they cause, the main factors affecting pest presence, pest prevention, control and monitoring techniques.

Ability to detect infestations in products and facilities, correctly recognizing the pests; evaluate and prepare appropriate prevention and monitoring plans; choose the most appropriate management strategies.

Awareness raising on the risks (economic impact and health issues) associated with agri-food infestations and the importance of integrated sustainable management.
The Campus in Reggio Emilia

Lab premises in via J.F. Kennedy

Lab premises at the Technopole

Besta building: The teaching premises
THANKS!

Do you have any questions?
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