



Hellenic Agricultural Organization - DEMETER

Institute of Technology of Agricultural Products

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The **Institute of Technology of Agricultural Products (ITAP)** is the only public research Institute in the broader public sector that deals with the quality, safety, processing and preservation of foodstuff. A significant number of research programs have been funded by the European Union and by the GSRT and have been implemented at the Institute or are in progress. Three of its laboratories are ISO 17025 accredited: Microbiological analysis laboratory, Physico-chemical analysis laboratory and Genetic Identification laboratory.



MICROBIOLOGICAL & MOLECULAR LABORATORIES

■ MICROBIOLOGICAL ANALYSIS LABORATORY

The laboratory of Microbiological Analysis of ITAP is a contemporary laboratory, fully equipped, where microbiological analysis of foodstuffs is undertaken in order to implement the Institute's research programs and to provide analytical support services to companies and individuals. The support services include microbiological analysis of food samples, small scale research projects (e.g. shelf life determination) and risk assessment according to EU 2073/2005 (Anex II). Since November 2008, the laboratory has been accredited by the ESYD in accordance with ISO 17025.

■ MOLECULAR MICROBIOLOGY LABORATORY

The laboratory of Molecular Microbiology of ITAP covers research needs on the assessment of food quality and safety using molecular biology and genomic analysis. The study of microbial ecology of foods allows the monitoring of microorganisms in food and food chain, while the response of specific species regarding the stress conditions, the pathogenesis of microorganisms and the survival of a starter culture during the production and maintenance of a food can be studied could be also be evaluated. The aforementioned information allow the better understanding of adaptation and behavior of microorganisms in food and food related ecosystems, as well as the most appropriate method to control food contamination. The laboratory could also provide these analyses to individuals and food industries.

PERSONNEL

RESEARCHERS

- Dr Chrysoula Tassou – Research Director
- Dr Nikos Chorianopoulos – Senior Researcher
- Dr Aspasia Nisiotou – Senior Researcher
- Dr Anthoula Argyri – Assistant Researcher
- Dr Agapi Doulgeraki – Assistant Researcher
- Dr George Katsaros – Assistant Researcher
- Dr Pantelis Natskoulis – Assistant Researcher

LABORATORY STAFF

- Georgia Charvourou
- Elisavet Mitre
- Patra Sourri

RESEARCH AREAS & ACTIVITIES

■ FOOD QUALITY & SAFETY

This research sector focus on the study of factors that affect the quality and safety of foods during production, processing, handling and storage. The research activities of the sector revolve around the following subjects:

- ✓ Food microbiota (e.g. behavior – physiology, kinetics, survival, safety)
- ✓ Determination of microorganisms of food
- ✓ Predictive food microbiology
- ✓ Chemical composition of foods
- ✓ Development of new and rapid techniques to determine food quality and safety
- ✓ Methods of producing, processing and storage of foods
- ✓ Technology of fermented products and use of pure cultures for their production
- ✓ Hygiene of food industries
- ✓ Risk analysis of biological hazards with emphasis on pathogenic bacteria and their metabolic products (toxins, mycotoxins, biogenic amines)

■ FOOD MOLECULAR MICROBIOLOGY

The sector of food molecular microbiology deals with quality and safety of foods, food microbiota, diversity and taxonomy of microorganisms, mycology, interactions of microorganisms, foods and equipment of food industries, genetics, genomics, proteomics and metabolomics, physiology of microorganisms and the application of microorganisms to develop new products.

• ENOLOGY

The scientific subject of the “Wine and Spirits” Sector (former Wine Institute of Athens) includes research on wines, alcoholic beverages and by-products of alcoholic fermentation and winemaking. The research activities of the “Wine and Spirits” Sector revolve around the following main axes with individual objectives:

- ✓ Composition and analysis of musts, wines and spirits
Chemical composition of native, foreign and new grape varieties, Chemical composition and sensory analysis of wines, Determination of primary and secondary wine aromas
- ✓ Winemaking technology
Improvement of technological practices, Alcoholic and malolactic fermentation (indigenous yeasts and bacteria, non-Saccharomyces species, collection of microorganisms of the former Wine Institute of Athens), Aging potential
- ✓ Safety of wines and wine-products – Health and wine
Biogenic amines, Ochratoxin A, Resveratrol and related stilbenes, Wine with reduced levels of alcohol