Control of the quality of food products of animal origin (YEAR IV, SEMESTER VII)

No. of transferable credits: 5

Course status
Specialized (compulsory)

Course coordinator
Assoc. Prof. Ionel BONDOC

Course goals (course and applications)

The course goals are general and operational. General goals refer to the presentation, knowledge and assimilation of the concepts related to the quality of food products of animal origin that are being currently applied in our country and in the other countries of the European Union.

Specific/operational goals refer mainly to the description, knowledge and skill development in techniques specific to actions of quality assessment and control in food products of animal origin, focusing on the categories of exams applicable when verifying the conformity, quality and hygiene of products and food products of animal origin, both raw and processed. Specific goals are directly correlated to the requirements of the current legislation related to the field of quality and safety of food products of animal origin.

Course contents (syllabus)

<table>
<thead>
<tr>
<th>Course (Chapters/subchapters)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food product quality</strong>: definitions, reference terms and concept evolution. European and national institutions with prerogatives in the field of food product quality management. European and national regulatory acts applicable to the field of quality food products of animal origin.</td>
</tr>
<tr>
<td><strong>Overall quality of food products</strong>: definition, components, assessment modalities.</td>
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<tr>
<td><strong>Nutritive/nutritional quality of food products</strong>: basic components of food products of animal origin – water, proteins, lipids, carbohydrates, minerals, vitamins and enzymes.</td>
</tr>
<tr>
<td><strong>Hygienic quality/innocuity of food products of animal origin</strong>: description, examples of microbiological and physico-chemical indicators in food products.</td>
</tr>
<tr>
<td><strong>Sensorial quality of food products</strong>: general organization of the analyzers, analyzer function and factors influencing the sensorial qualities of food products.</td>
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<tr>
<td><strong>Nutritional/nutritive quality of the main groups of food products of animal origin</strong>: meat and meat products, milk and dairy products, honey, eggs, fish and fishery products.</td>
</tr>
<tr>
<td><strong>Physico-chemical and microbiological processes that impact food product quality</strong>: main alterations, quality losses and degradations in food products of animal origin.</td>
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</tbody>
</table>

Laboratory courses

| Analysis methods used in the quality control of food products. |
| Control of the quality of milk and main groups of dairy products. |
| Control of the quality of meat products. |
| Control of the quality of fish and fishery products. |
| Control of the quality of table eggs. |
| Final semester assessment (assessment of the competencies gained during laboratory courses). |
Bibliography

## Final assessment

<table>
<thead>
<tr>
<th>Forms of assessment</th>
<th>Assessment modalities</th>
<th>Percentage of the final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam</td>
<td>Oral assessment</td>
<td>60%</td>
</tr>
<tr>
<td>Evaluation of the activity during the semester</td>
<td>Oral assessment during the semester, final semester assessment (practical test)</td>
<td>40%</td>
</tr>
</tbody>
</table>

### Contact person

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Quality control of vegetable food products  
(IVth Year of study, VIIIth Semester)

Credit value (ECTS) 5

Course category  
Specialized discipline (Imposed)

Course holder:  
Lecturer Dr. Elena Ișan

Discipline objectives (course and practical works)

The course aims to make students to acquire theoretical knowledge necessary for future professional activity, regardless of link/location to its profession: control activity, technical audit or quality audit, engineering technology, legislative area, etc. Knowing the main features of the normal raw materials and products in order to have the expertise capacity to notify the suspect products, with defects or substandard in terms of composition/quality or sanitation. Possession of all the necessary information to make proper harvest samples, to request laboratory tests in correlated with legislation programs or situation in the field at a time, including in crisis situations (suspicion, alerts, complaints, food poisoning, etc.).

In practical work is intended to familiarize the students with the working in the special microbiology domain, knowledge concepts relating to taxonomy, morphology, physiology and particularities of the main groups of organisms with implications in hygiene and healthiness of vegetable food products, and some biotechnology elements. It also will study the techniques of isolation, identification and confirmation by establishing biochemical behavior of the main groups of microorganisms known to be involved in special food microbiology - vegetable area.

Contents (syllabus)

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<tr>
<td>The object of study - Quality control of vegetable food products</td>
</tr>
<tr>
<td>Official control. Control techniques and procedures. The legal implications of the controls. Devices, Equipment and statements used. Types and ways of controls performing.</td>
</tr>
<tr>
<td>Official control. European Union law and national legal provisions regarding the authorization/registration of establishments, implementation and application of the evaluation methods, the units employment and controlled products.</td>
</tr>
<tr>
<td>Official control. Assessment of units that operate in food industry – vegetable domain. Results of controls. Monitoring. Inspection.</td>
</tr>
<tr>
<td>Quality control and quality characteristics of the vegetable food products. Quality control and supply characteristics of cereals and flours. Bread and bakery products, pasta, expanded products.</td>
</tr>
<tr>
<td>Quality control and quality characteristics of the vegetable food products. Vegetables, fresh fruit, frozen, canned, dried, flakes, etc., mushrooms, broth and tomato paste. Jams, marmalades, candied fruits, etc.</td>
</tr>
</tbody>
</table>


**Practical works**

General rules of labor protection; Laboratory equipment and utensils ; correct working practices in microbiology laboratory. Introduction to general laboratory techniques. Techniques for growing microorganisms. Media culture. Classification.

Methods of assessing the hygiene state of the production / processing units. Evaluation of the air hygiene state - microaeroflora.

Methods of the hygiene state evaluation of the units using sanitation tests to assess the state of hygiene of work surfaces. Evaluation of the hygiene state of work equipment, personnel hands and containers/ packaging.

Determining the total mesophilic aerobic plate - NTG.

Determining the number of yeasts and fungi - NTF.

General characteristics, role and importance of coliforms. Methods of analysis for determining the number of coliform bacteria in vegetable food products.

General characteristics, role and importance of *Enterobacteriaceae*. Methods of analysis for determining the number of *Enterobacteriaceae* in vegetable food products.

General characteristics of the *Escherichia coli* species. Contamination of vegetable and mixed products with *E. coli*. The role and importance of *E. coli* in food microbiology. Methods of analysis for isolation and confirmation of *E coli*. Determining the number of *E. coli* in vegetable products.

Quick determinations and classical microbiological quality of drinking and technological water. IDEXX rapid analysis method and membrane separation technology.

Contamination of vegetable and mixed food products with *Salmonella spp.* and *Listeria spp.*. The role and importance of *Salmonella spp.* and *Listeria spp.* in food microbiology.

Determination of nitrites / nitrates in drinking water used or intended for public consumption processes.

Using ELISA for the determination of mycotoxins in food of non-animal origin. Determination of sulphites in wine.

**Bibliography**

- Apostu S. 2006 - Food Microbiology , vol. I, II and III. Publisher Risoprint , Cluj -Napoca ;
- O. Bazgan 1999 - Diagnostic laboratory and hygiene of food of animal origin. Publisher " Moldogrup ", Iasi ;
- Cecilia Pop , Ducu rev. , Pop M., 2009 - The management of food quality . Publisher Edict , Iasi ;
• Ştetca Gh., N. Mocuţa, Anamaria Pop, 2012 - Management Strategies food quality , Risoprint Publishing House , Cluj -Napoca ;
• Ulea E., Lipşa F.D. , 2012 - Practical Guide microbiology , Ed . Ion Ionescu de la Brad , Iaşi ;
• Regulation C.E. no. 178/2002 of the European Parliament and of the Council of Europe - The determination of Principles, general requirements for legislation, training European Food Safety Authority and laying down procedures in matters of food safety
• Regulation C.E. no. EC 852/2002 - establishing hygiene conditions
• Regulations EC / EU 882/2004 - on official controls to ensure verification of compliance with legislation;
• Commission Decision / 2006 - guidelines laying down criteria for the conduct of audits;
• Order 111/2011 ANSVSA filled with Ord. A.N.S.V.S.A. no. 122/2010 - approving the sanitary veterinary and food safety of the procedure for registration of veterinary food establishments.
• SR ISO - field mode, bacteriological techniques, etc.

Evaluation

<table>
<thead>
<tr>
<th>Evaluation form</th>
<th>Evaluation Methods</th>
<th>Percentage of the final grade</th>
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<tr>
<td>Exam</td>
<td>Oral examination</td>
<td>60%</td>
</tr>
<tr>
<td>Appreciation of the activity during the semester</td>
<td>Oral assessment during the semester, verification tests and final laboratory colloquium.</td>
<td>40%</td>
</tr>
</tbody>
</table>

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