



Universitat de Lleida

DEGREE CURRICULUM
HYGIENE AND INSPECTION

Coordination: MOLINO GAHETE, FRANCISCO

Academic year 2022-23

Subject's general information

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|---|---|--------|------------|----------------------|
| Subject name | HYGIENE AND INSPECTION | | | |
| Code | 100374 | | | |
| Semester | 1st Q(SEMESTER) CONTINUED EVALUATION | | | |
| Typology | Degree | Course | Character | Modality |
| | Double bachelor's degree: Bachelor's Degree in Veterinary Medicine and Bachelor's Degree in Science and Production | 6 | COMPULSORY | Attendance- based |
| Course number of credits (ECTS) | 6 | | | |
| Type of activity, credits, and groups | Activity type | PRALAB | PRAULA | TEORIA |
| | Number of credits | 1.5 | 1.5 | 3 |
| | Number of groups | 4 | 2 | 1 |
| Coordination | MOLINO GAHETE, FRANCISCO | | | |
| Department | FOOD TECHNOLOGY, ENGINEERING AND SCIENCE | | | |
| Teaching load distribution between lectures and independent student work | 6/6 | | | |
| Important information on data processing | Consult this link for more information. | | | |
| Language | Castilian 50% Catalan 50% | | | |
| Distribution of credits | 3 credits de clases magistrales participativas 0.75 credits seminar type1 0.75 credits seminar type2 1,5 credits de laboratorial practices | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
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Subject's extra information

The mission of a veterinarian is not restricted to knowledge of the morbid states of the animal and the conditions that a farm must meet to achieve maximum productive performance, its responsibility extends to the processes of obtaining and transforming safe food to people (*Hygia pecoris, salus populi*) Hygiene, Food Inspection and Control (HFIC) is one of the classic fields of the veterinary profession and gives the veterinarian the knowledge and ability to perform the functions of guarantor of food safety both at the company level and the official exercise. The aim of HFIC) is to understand the measures that are carried out in the food chain to safeguard the safety of food intended for human consumption.

From the point of view of professional development, the knowledge, competences and responsibilities acquired by veterinarians in matters of hygiene, inspection and food control is regulated by European Directive 36/2005, Royal Decree 1837/2008 and Law 44/2003 . In the same way, these professional requirements are verified in the compulsory competences for the qualification of the exercise of the veterinary profession that appear in the Order 333/2008.

Learning objectives

The acquisition of competence in the "control of hygiene, inspection and technology of the production and processing of consumer foods from human production to the consumer", "the knowledge and application of the legal, regulatory and administrative provisions of all the areas of the veterinary profession of public health .. "and" the identification of emerging risks in all areas of the veterinary profession ".

The student to pass the subject must demonstrate that:

- Is able to know food bromatologically in order to discern its aptitude for consumption
- Is able of recognizing the causes of contamination and alteration of food, as well as proposing prevention and control measures.
- Is able of elaborating hygiene plans in the food chain and knows the prerequisites and good practices applicable to the chain, as the basis of the self-control system of the food industry (HACCP).
- Know the basics of food safety management through the risk assessment process.
- Know rules and sanitary hygienic control measures of food industries and processes, in order to advise and / or exercise the inspection on food and its aptitude for consumption.
- Know the systematics of the official control of the food industry, the food safety management systems applicable

to public health.

-Is able of handling food legislation, interpreting it and applying it

-Is able of advising, providing and auditing commercial and sanitary norms that avoid frauds and protect the consumer

Competences

General Competences:

- CG1: Hygiene control, inspection and technology for the production and processing of food for human consumption from primary production to the consumer.

- CG5 Knowledge and application of the legal, regulatory and administrative provisions in all areas of the veterinary profession and public health, understanding the ethical implications of health in a changing global context

- CG6 Development of professional practice with respect to other health professionals, acquiring skills related to teamwork, efficient use of resources and quality management

- CG7 Identification of emerging risks in all areas of the veterinary profession

The competences detailed below derive from the **specific competencies** of Order ECI 333/2008 which are included in the block of Hygiene, Technology and Food Safety in the memory of the Degree. Said Order indicates that the student upon passing the subject will be competent to:

-CE3 Identify and apply the principles and bases in Morphology, bionomy and systematics of animals and plants of veterinary interest

- CE12. Know the ethical principles of the veterinary profession, apply its rules and regulations as well as apply the principles and bases of Well-being, animal protection and bioethics.

- CE31 Know and identify the components and characteristics of food, technological processes for obtaining, processing, as well as the changes, alterations and adulterations that all foods of veterinary interest may undergo.

- CE32 Know the sanitary criteria and legal bases of the inspection as well as apply the ante and post mortem veterinary inspection regulations.

- CE33 Identify and apply good hygienic practices, hazard analysis and critical control points in the inspection of establishments and products of veterinary interest.

- CE34 Apply the bases of handling control and treatments in all establishments and products of veterinary interest, taking into account food safety and public health regulations.

- CE35 Know the bases of food risk analysis: Risk determination, management and communication

- CE36 Identify outbreaks of food poisoning, apply the bases of epidemiology, monitoring and surveillance protocols, as well as apply the dynamics and demographics of infection and poisoning.

Basic skills

CB1. That students have demonstrated to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge from the forefront of your field of study.

CB2. That students know how to apply their knowledge to their work or vocation in a professional way and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant issues of a social, scientific or ethical nature.

CB4. That students can transmit information, ideas, problems and solutions to both specialized and non-specialized audiences.

CB5. That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Transversal competences:

CT1. Acquire an adequate oral and written comprehension and expression of Catalan and Castillian.

CT2. Acquire a significant command of a foreign language, especially English.

CT3. Acquire training in the use of new technologies and information and communication technologies.

CT4. Acquire basic knowledge of entrepreneurship and professional environments.

CT5. Acquire essential notions of scientific thought.

Likewise and in connection with other subjects, you will be more competent to:

- To base the aptitude for the consumption of a food.
- Identify the causes of contamination and food alteration.
- Apply risk analysis and evaluation tools.
- Apply hygiene measures in the food chain.
- Prepare and establish self-control plans in the food chain (HACCP).
- Advise on traceability, hygiene, control and inspection.
- Advise on food legislation, labeling, quality and health standards that protect the consumer.
- Participate in the system of self-control and official control in the food industry.
- Appropriately and successfully address pre-professional practices related to rotary inspection of slaughterhouses and food industries, stays in veterinary establishments and agencies of the official veterinary field.
- Prepare professional opinions on HICA.
- Identify hygiene problems and propose measures to solve them.
- Advise on communication and training in hygiene and food safety.
- Intervene in activities to promote health and rational consumption of food.

CE12. Know the ethical principles of the veterinary profession, apply its rules and regulations as well as apply the principles and bases of Well-being, animal protection and bioethics.

Subject contents

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|-----|---|
| L1 | Presentation, teaching guide, importance of the subject in Public Health, professional skills (0.5h) |
| L2 | Basic concepts: hygiene, inspection, control, fraud, safety, food safety, traceability, food contamination factors, danger, risk. Causes of loss of fitness for consumption. Food crises, Agencies, authorities, norms, sampling and current programs. (5.5h) |
| L3 | Food legislation, hygiene package, standards, legislation on labeling (4h) |
| L4 | General Hygiene Plan, Hygiene in primary production and in the food industry. (Farm, transport, premises, equipment, by-products, waste, water, personnel, products, packaging, training, heat treatments) (2h) |
| L5 | Self-control plan in the food industries. HACCP, prerequisites, flow chart, analysis and evaluation, critical control points, surveillance, corrective measures, verification and registration. (6h) |
| L6 | Animal welfare, hygiene of slaughterhouses and cutting rooms. Hygiene in carnation and postcarnization. Traceability (2h) |
| L7 | Hygiene, inspection and control in the meat transformation chain. Official veterinary control. |
| L8 | Aptitude criteria for fish consumption. Identification. Risk management (2h) |
| L9 | Official inspection and control of fishery products. (2h) |
| L10 | Aptitude criteria for milk consumption, hygiene in the production chain. Official inspection and control of dairy products. (4h) |
| L11 | Aptitude for consumption, risks associated with the consumption of eggs. Hygiene, inspection and control of eggs and egg products. Honey. (2h) |
| L12 | Hygiene, inspection and control in collective catering (2h) |
| S1 | Seminar on the functions, competences and responsibilities of the veterinarian as guarantor of public health and safety (talk with the participation of Public Administration). (1h) |
| S2 | Seminar on the interpretation of food legislation, database management, practical cases of application of fraud and labeling legislation. (2h) |
| S3 | Seminar on the study of outbreaks of toxic infections. (2h) |
| S4 | Type 2 Seminars: Development of a HACCP applied to the elaboration of a product and its presentation. (4h) |
| S5 | Fish identification seminar. (2h) |
| | Practical (15h) |
| P1 | Practice: Control of hygiene in the food industry, analysis of surfaces, utensils, equipment, manipulators and disinfecting capacity |
| P2 | Practice: Microbiological analysis of food, hygiene and safety criteria. Application of current legislation |
| P3 | Practice: Determination of the official method of trichina and visit to the Animal Health Laboratory of Cataluña |
| P4 | Practice: Determination of parasites in fish, degree of freshness and identification. |
| P5 | Practice: Water analysis. |

Methodology

The teaching of the subject is distributed in 32 hours (3,2 ECTs) of 16 participatory lectures of two hours duration, where students have previously the documentation. At the end of each session, questions will be made regarding the most outstanding topics of the session. The seminars are divided into two types: type 1, aimed at the search, interpretation and application of food legislation and labeling (0.4 ETCs), shelf life, study of outbreaks of food intoxication, identification of fish (0.6 ETCs)) and type 2 seminars (0.6 ECTs) where the elaboration of the self-

control plans of the agro-food industry, HACCP will be addressed. The practical teaching will be taught in 15 hours divided into several sessions for 1 continuous week (1.5 ECTS).

In the case that for exceptional reasons the teaching has to be taught in a non-face-to-face way, the methodology will consist of virtual classes through the videoconference tool of the virtual campus (theoretical teaching, type 1 and 2 seminars and the practices will be solved with the projection of some videos where you can see in a detailed way the practical contents that appear in the program of the subject.

Development plan

The participatory master classes and the type 1 seminars will be interspersed throughout the teaching sessions from November until february. the presentation of the work related to the HACCP elaboration of a food industry will be evaluated the day of its presentation (first week in January). The practices and visits are not obligatory and will be evaluated with the reports that are made of them in the subsequent practical sessions.

The subject during this course and in an exceptional way will be taught from 15 to 17 every day of the week except Friday. The estimated start of the 16 theory sessions and seminars is in November and the practices will be held in the morning from 10h to 14h, in 4 groups during a week each group from the 3rd week of November to the December stop.

Evaluation

A written test will be carried out in the official exam period, which will consist of multiple choice questions (60% of the final mark), short questions (20% of the final mark) related to the theory classes and seminars, the rest (20%) will be evaluated through the participation and presentation of the HACCP type 2 seminar (10% of the final mark), which will be evaluated on the day of the presentation and the content of the practices (10% of the final mark), the practices They are not compulsory and will be evaluated with the completion of the practical reports. The written test will last 2 hours (0.2 ECTS). In order to pass the course, you must pass 50% of the written test and obtain a 5 out of 10 of the sum of the continuous evaluation. In order to add the rest of the evaluations to the mark obtained in the written test, it must be passed. People who obtain a 5 in the global assessment (written test + practices + HACCP type2 seminar), may obtain up to 1.15 extra point by taking an oral exam on identification of fish, molluscs and crustaceans and other related activities indicated during the course such as between other: news readings, resolution of cases related to visits, identification of fish in fish markets and markets.

In the event that for exceptional reasons the Directorate of Studies indicates that the evaluation must be non-face-to-face, the evaluation will consist of two test-type tests (45% each) of all the content taught (theoretical virtual classes, type 1 and 2 seminars , practices). In addition, a paper on the elaboration of a HACCP will have to be presented virtually (10%).

Attitude to follow in the event of a voluntary or accidental violation of the rules for conducting the examination:

The voluntary or accidental violation of the rules of the exam prevents the assessment of the same. Therefore, the student suspends the subject without option to recovery with a "0". If intentionality is confirmed in the deception, it will be considered a very serious ethical breach, and the Service Inspectorate will be informed to take the disciplinary measures that it deems appropriate

Bibliography

Bibliography:

ANONIMO 2008. Els formatges de Catalunya 2008. Departament d'Agricultura, Alimentació i Acció Rural. Generalitat de Catalunya

BARTELS, H. 197. Inspecció veterinària de la carne. Acribia. Zaragoza

- BRYAN, F.L. 1992. Evaluaciones por análisis de peligros en puntos críticos de control. OMS. Ginebra.
- DERACHE, J. 1990. Toxicología y seguridad de los alimentos. Omega. Barcelona.
- ELEY, R. 1994. Intoxicaciones alimentarias de etiología microbiana. Ed. Acribia. Zaragoza.
- EUZEBY, J. 2000. Los parásitos de las carnes. Acribia. Zaragoza.
- FERRANDIS-GARCIA APARISI, G. 2014. Seguridad, Higiene y Gestión de la calidad Alimentaria. Síntesis.
- GONZALEZ VAQUÉ Coordinador. 2015. Lecciones de derecho alimentario: 2015-2016. Thomson Reuters Aranzadi
- GRACEY'S. 2015. Meat Hygiene. Eleventh Edition. Edited by Collins D.S., Huey, R.J. Wiley Blackwell . También en recurso electrónico.
- I.C.M.S.F. 1991. El sistema de análisis de riesgos y puntos críticos. Su aplicación a las industrias alimentarias. Acribia. Zaragoza.
- I.C.M.S.F. 1998. Microorganismos de los alimentos. Características de los patógenos microbianos. Acribia. Zaragoza.
- I.C.M.S.F. 2016. Microorganismos de los alimentos: Uso de datos para evaluar el control del proceso y la aceptación del producto. Editorial Acribia.
- INFANTE GIL, J. y COSTA DURAO, J. 1990. Atlas de inspección de la carne. Grass Ediciones. Barcelona.
- LAWRIE, R.A. 1999. Ciencia de la carne. Acribia. Zaragoza
- LÓPEZ GARCÍA, J.L. 1999. Calidad alimentaria: Riesgos y controles en la agroindustria. Mundi-Prensa. Madrid.
- MADRID, A. 1982. Tecnología de los subproductos cárnicos. Pub. del autor. Madrid.
- MARTINEZ CALDERON, m. C (2014) Higiene y Seguridad en la manipulación de Alimentos. Síntesis. Madrid.
- MONTES, E., LLORET, I., LÓPEZ, M.A. 2009. Diseño y gestión de cocinas: manual de higiene alimentaria aplicada al sector de la restauración. Díaz de Santos . Madrid
- MORENO, B. (2006) Higiene e Inspección de la carne I. Díaz de Santos Madrid.
- MORENO, B. (2003) Higiene e Inspección de la carne II. Díaz de Santos Madrid.
- MORTIMORE, S. y WALLACE, C. 1996. HACCP: Enfoque práctico. Ed. Acribia. Zaragoza. NOLLET, LEO M.L. 2007. Handbook of meat, poultry and seafood quality. Wiley-Blacwell Publishing. Oxford
- PASCUAL ANDERSON, M^a R. Y CALDERON PASCUAL, V. 1999. Microbiología alimentaria. Metodología analítica para alimentos y bebidas. Díaz de Santos. Madrid.
- PAULSEN, P. 2017. Game meat hygiene: Food safety and security. Wangeniigen Academic.
- PEREZ, N Y, CIVERA, J.J. (2014) Gestión , Organización y Planificación de la producción culinària. Síntesis Madrid.
- PUIG-DURÁN FRESCO, J. 1999. Ingeniería, autocontrol y auditoría de la higiene en la industria alimentaria. Mundi-Prensa. Madrid.
- SWATLAND, H.J. 2002. Evaluación de la carne en la cadena de producción. Ed. Acribia. Zaragoza.
- VELARDE, A. y MOHAN, R. 2016. Animal Welfare at Slaughther. 5m Publishing. Sheffield, UK.

Food Safety Books:

- Bello, J., M^a.I. García-Jalón, A. López (2000) Fundamentos de seguridad alimentaria. Ediciones Eunete.
- Costa, R., K. Kristbergsson, (2009) Predictive modelling and risk assessment. Springer, nova York.

- ICMSF. (2004) Microorganismos de los alimentos. 6, Ecología microbiana de los productos alimentarios. Zaragoza: Acribia
- ICMSF. (2004) Microorganismos de los alimentos. 7, análisis microbiológico en la gestión de la seguridad alimentaria. Zaragoza: Acribia
- Jay, J.M. (2000) Microbiología moderna de los alimentos. Acribia, Zaragoza
- Koopmans, M., D.O. Cliver, A. Bosch (2008) Food-borne viruses. Progress and challenges. ASM Press, Washington.
- Lawley, R., L. Curtis, J. Davis (2008) The food safety hazard guidebook. RSC Publishing, Cambridge
- Losada Manosalvas, S. (2001). La gestión de la seguridad alimentaria. Barcelona: Ariel.
- Luning, P. A., Devlieghere, F., & Verhé, R. (2006). Safety in the agri-food chain. Wageningen:Wageningen Academic.
- McElhaton, A, R.J. Marshall.(2007). Food Safety. A practical and case study approach. Springer, Nova York
- Polledo, J.F. (2002) Gestión de la seguridad alimentaria. Mundi-Prensa, Madrid
- WHO (2009) Risk characterization of microbiological hazards in food. Microbiological risk assessment series nº 17. WHO, Ginebra.

URLs Food Safety:

OMS sobre seguretat alimentaria: <http://www.who.int/fsf>

Servei de seguretat i inspecció alimentària de la USDA americana: <http://www.fsis.usda.gov/> International Food Safety Council: <http://www.foodsafetycouncil.org/>

FDA (Food and Drug Administration) : <http://www.fda.gov/Food/default.htm>

Codex Alimentarius: <http://www.codexalimentarius.net>

Autoridad Europea de Seguridad Alimentaria: <http://www.efsa.eu.int>

Agencia Española de Seguridad Alimentaria y Nutrición: <http://www.aesan.msc.es>

Agència catalana de Seguretat Alimentària: <http://www.gencat.cat/salut/acsa/>

Food Safety Agency: <http://www.food.gov.uk/>

European food safety: http://ec.europa.eu/food/food/index_es.htm