

Guideline for EAEVE Evaluations of the European Food Hygiene Curriculum

Preface

Following an invitation of EAEVE's ExCom Committee dd. 1st February 2011, a working group consisting of University Staff [academic teachers in Food Hygiene (FH)] convened in Vienna to prepare a draft FH curriculum outline based on consensus. To assure compliance with the views of the professionals in the field as represented by FVE/UEVH, a delegate from the latter organisation was invited by EAEVE to join the meeting.

Hence the EAEVE working group consisted of the following individuals:

Prof. Dr. Sava Buncic (Novi Sad, Serbia)
Prof.Dr.Dr.h.c. Karsten Fehlhaber (Leipzig, Germany)
Dr. Robert Huey (FVE/UEVH, Brussels)
Prof. Dr. Hannu Korkeala (Helsinki, Finland)
Prof. Dr. Miguel Prieto-Maradona (León, Spain)
Prof.Dr.Dr.h.c. Frans Smulders (Vienna, Austria)
Prof. Dr. Iva Steinhauserova (Brno, Czech Republic)

The contents of these guidelines are the result of having taken the following approach:

- Meeting in Vienna on the 17th/18th of March 2011, to outline a 'working document', which in the following weeks was circulated among all working group members to solicit comments /amendments, ultimately leading to a consensual draft version-1.
- Presentation of the latter document during an International seminar on the European FH Curriculum held at Leipzig, 1st of April 2011, in which representatives of 13 Faculties across Europe (from Austria, Belgium, Denmark, Finland, Germany, Serbia, Sweden, Switzerland, The Netherlands) participated. It should be stressed that participants were specifically requested to share their professional opinion as FH experts/teachers, rather than to safeguard national or faculty interests. A version-2 (attached as Annex A and drafted in accordance with various suggestions made) was ultimately unanimously endorsed by the conference.
- Draft version-2 was once again circulated to the working group to confirm the final contents were supported by all members.

Meeting of EAEVE Working Group on the European Food Hygiene Curriculum, Vienna, 17 – 18 March 2011

Present

Frans Smulders (Chair), Karsten Fehlhaber, Sava Buncic, Miguel Prieto, Hannu Korkeala, Robert Huey; Absent (with apology), Iva Steinhäuserova

The objective of the meeting of this Working Group was to formulate the minimum standard of training in the subject of Food Hygiene which is acceptable in the undergraduate training of the European veterinarian.

It must be emphasised that what is described is the minimum standard.

The Working Group is aware that the teaching of food hygiene in many faculties goes well beyond that described in what follows, and this is considered as an added benefit.

The working group also acknowledges the fact that there may be national priorities, that – provided backed up by valid arguments – may inspire slight alterations of the proposed curriculum design. However, around 90% of the overall teaching time should be spent on the essential elements, listed in Annex A.

The main concern of the Working Group was to correct the omission in the current Annex 1 of the EAEVE evaluation SOP document, main indicators, in that it contains no recommendation on total hours teaching requirements for Food Hygiene/Public Health. Food Hygiene/Public Health is the only discipline for which there are no recommendations.

In addition, Annex 4 of the EAEVE evaluation SOP document, day one skills, contains no points under General Professional, Skills and Attributes, only one point under Underpinning Knowledge and Understanding and only one point under Practical Competences relating to Food Hygiene, i.e.

2.2.9 Veterinary public health issues including zoonoses.

2.3.17 Perform ante and post mortem examination of food animals and correctly identify conditions affecting the quality and safety of products of animal origin.

The Working Group wishes to emphasise the important role which Food Hygiene plays within the veterinary undergraduate curriculum in providing an important 'public good' to society. This is a particularly important strength of this subject within the veterinary undergraduate curriculum, especially in many countries where the continued financing of veterinary education is dependent upon this 'public good' which ultimately results in the production of Official Veterinarians. It should be emphasised that what is taught within 'Food Hygiene' are those disciplines which are required to protect the consumer.

In addition, the discipline of 'Food Hygiene' is the professions' contribution to addressing the growing world-wide concern for food security and underpins the professions' commitment to 'One Health'. Preventive medicine is a key element of Food Hygiene.

Environmental issues play an important role in our society. Environmental problems related to food production and issues related to need of pure water for humans and animals should be dealt with in the veterinary curriculum.

The Working Group wishes to stress the particular importance of the following points:

The optimal and most effective place for Food Hygiene training in the veterinary curriculum is at the final stage, i.e. when undergraduate students have been confronted with the clinics and have a better understanding of animal disease, basic epidemiology and on-farm disease prevention options. The extent of the Food Hygiene training (in terms of proportion of the total veterinary curriculum) should range from a minimum of 12 to 15 % depending on national, regional or faculty interests and preferences. All elements listed should be provided both in theory (lectures, seminars) and during practicals/excursions

Establishments for veterinary education provide graduates with the scientific basis (1st day skills) allowing them to undertake a career in Veterinary Public Health, after they have engaged in the necessary postgraduate training which should be primarily provided by the competent authority, as stipulated in European legislation. Hence, the responsibility for ensuring that the training of the Official Veterinarian as required by the 22 points described in Chapter IV of 854/2004, (Annex B of the underlying document) is undertaken lies with the Competent Authority, not with the Veterinary Faculty. Nevertheless it is possible to include all these points in the undergraduate training.

The scope and the methodology of Food microbiology fundamentally differ from those of Veterinary microbiology, so the latter cannot substitute for the former. It is therefore desirable that this course element is taught by a specialised food microbiologist.

This guidance document is to be periodically updated when/as necessary and in accordance with further relevant developments in the area.

Annex A

Outline Draft Minimum Curriculum for Food Hygiene Undergraduate Training. Bold italicized insertions [bullet points a) through v)] refer to elements specifically mentioned in Regulation 854/2004, Chapter IV ('Professional Qualifications')

Subject	Proportion (% ± 5) of time spent	Day One Skills	Learning Objectives
1. Food microbiology	30	To be capable of participating in the microbiological examinations relevant for foods, from sampling to interpretation of results along the whole food chain.	Understanding of, for example: <ul style="list-style-type: none"> • Microbiology in the food chain • Microbiological contamination of food • Factors influencing survival, growth and inactivation of micro-organisms • Microbial identification and typing • Basic genotypic and phenotypic characteristics of micro-organisms • Starter and protective cultures • Probiotics, prebiotics and competitive exclusion • In addition, commodity specific (e.g. milk, meat, fish, eggs) microbiology aspects
2. Food spoilage		To be capable of recognising food spoilage and advising on preventive measures. To be capable of making decisions based on the relevant legislation.	Understanding of, for example: <ul style="list-style-type: none"> • Types of microorganisms and their activities causing spoilage • Enzyme activities involved in spoilage • Spoilage of foods due to parasites and pests • Spoilage caused by physical-chemical processes and physical-chemical processes

<p>3. Biological food safety hazards in the context of Longitudinally Integrated Food Safety Assurance concept, including pre-harvest, harvest and post-harvest</p>		<p>To be capable of recognising the major biological hazards associated with foods.</p> <p>To be capable of advising food processors on biological hazard prevention and control.</p>	<p>associated with microbial spoilage</p> <p>Understanding of:</p> <ul style="list-style-type: none"> • Zoonosis • Bacterial food borne infections and intoxications • Viral foodborne infections • Protozoan zoonotic and/or foodborne parasites • Other zoonotic and/or foodborne parasites • Public health aspects of prion-caused diseases • Mycotoxins • Biogenic amines • Natural toxins in food (e.g. toxic fish, shellfish poisoning) • Transferable antimicrobial resistance in microbiota <p>Understanding of:</p> <ul style="list-style-type: none"> • prevention and control of biological food safety hazards to protect human health <p>Understanding of:</p> <ul style="list-style-type: none"> • investigations of outbreaks of related food-borne diseases in humans <p>Note: The above addresses bullet points i), l), t), q,) n) and r) of the 'Professional Qualifications' (Regulation 854/2004)</p>
<p>4. Chemical food safety hazards</p>		<p>To be capable of advising on the prevention of residues of</p>	<p>Understanding of:</p> <ul style="list-style-type: none"> • Basic principles of chemical contamination

		<p>Veterinary Medicinal Products contamination of foods.</p> <p>To be capable of assisting other professionals in the prevention of other chemical contamination of foods if/where needed</p>	<p>along the food chain</p> <ul style="list-style-type: none"> • Groups and categories of food-relevant substances • Environmental contamination and main principles of its prevention • Legislation on residues and contaminants <p>Understanding of:</p> <ul style="list-style-type: none"> • prevention and control of chemical food safety hazards to protect human health <p>Understanding of:</p> <ul style="list-style-type: none"> • investigations of outbreaks of related food-borne diseases in humans <p>Note: the above addresses bullet points j), n) and t) of the 'Professional Qualifications' (Regulation 854/2004)</p>
5. Food preservation and technology	15	Capable of identifying risks and risk reducing options associated with the various food preservations and processing methods.	<p>Understanding of:</p> <ul style="list-style-type: none"> • Main methods used in food preservation and technology including packaging • Product quality and food safety effects and goals of the main preservation/technology processes, and their balancing • Hurdle concept • Processing hygiene <p>Note: the above addresses bullet point c) of the 'Professional Qualifications' (Regulation 854/2004)</p>
6. Meat Inspection	15	Capable of performing ante-mortem and post-mortem	Understanding, for the main production animal species and partly subject to national priorities, of:

		<p>inspection of food animals, correctly identifying conditions affecting the quality and safety of the meat and deciding on its disposition.</p> <p>Capable of evaluating the hygienic status of slaughterhouse plants, personal and processes</p>	<ul style="list-style-type: none"> • The role, aims and objectives of meat hygiene • Basic principles of meat hygiene • Slaughter hygiene • Hygiene and technology of meat production • Meat Hygiene legislation • The aims, objectives and methods of ante-mortem examination including: <ul style="list-style-type: none"> ○ animal welfare during transport, in the lairage and at slaughter; ○ the relationship between animal welfare and meat quality/food safety; ○ food chain information analysis; ○ hygienic status of animals; ○ risk categorisation of animals and logistic slaughter. • The aims, objectives and methods of post-mortem examination including: <ul style="list-style-type: none"> ○ detection of zoonotic/foodborne hazards in slaughtered animals; ○ hygienic status of meat; ○ decontamination strategies at abattoir level ○ judgement of meat fitness for human consumption; ○ post-mortem findings as indicators of poor animal welfare • Meat certification including for import and export • Quality assurance systems in meat production enterprises
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			Note: the above addresses bullet points s) and t) of the 'Professional Qualifications' (Regulation 854/2004)
7. Food analysis	20	<p>Capable of performing analysis of food and identifying conditions affecting the quality and safety.</p> <p>Capable of evaluating the hygienic status of food premises, personnel and processes</p>	<p>Understanding of analysis of a range of fresh and processed foods, especially of animal origin.</p> <p>Understanding of analysis related to milking hygiene, milk and dairy foods.</p>
8. Official controls of food		<p>Capable of interpreting information and results of laboratory analysis including evidences indicating possible fraud (e.g. labelling) and making related decisions.</p> <p>Capable of observing possible non-compliances in food production and making related decisions.</p> <p>Capable of applying relevant legislation to support and justify those decisions.</p>	<p>Understanding the process of making food hygiene and safety related decisions based on relevant legislation.</p> <p>Understanding the role and the objectives of veterinary decisions at National and International level.</p> <p>Understanding the role of international organisations in food law and food standards and Risk analysis.</p> <p>Note: the above addresses bullet points a) and b) of the 'Professional Qualifications' (Regulation 854/2004)</p>
9. Risk Based Approach to ensuring food safety and	20	Capable of designing and implementing a risk based food	Understanding of the food safety and quality risks and inspecting, auditing and enforcing compliance

quality		management system at various points of the food chain based on GFP/GMP/GHP and HACCP principles	<p>with food safety and quality requirements.</p> <p>Understanding and applying a risk analysis approach according to CAC principles</p> <p>Understand principles of the food safety and quality risk management systems based on GFP/GMP/GHP and HACCP principles and their assessment.</p> <p>Monitoring and control of zoonosis and food borne infections/intoxications in all stages of the food chain including feed</p> <p>Note: the above addresses bullet points d) e), f) g), h), and u) of the 'Professional Qualifications' (Regulation 854/2004)</p>

Learning objectives as described in Regulation 854/2004 but not included in Food Hygiene Undergraduate Training

k) Diagnostic epidemiology
p) Data-handling and application of biostatistics
o) Information and communication technology as related to veterinary public health
v) principles of training of personnel working in the production chain.

The learning objected listed above, specifically k), p) and o) are primarily the responsibility of the staff involved in teaching epidemiology and biometrics. Learning objective v) is primarily the responsibility of the Competent Authority.

RJH (rapporteur)

**REGULATION (EC) No 854/2004 OF THE EUROPEAN PARLIAMENT AND OF
THE COUNCIL
of 29 April 2004**

**laying down specific rules for the organisation of official controls on products
of animal origin
intended for human consumption**

CHAPTER IV: PROFESSIONAL QUALIFICATIONS

A. OFFICIAL VETERINARIANS

1. The competent authority may appoint only veterinarians who have passed a test meeting the requirements of paragraph 2 as official veterinarians.
2. The competent authority must make arrangements for the test. The test is to confirm knowledge of the following subjects to the extent necessary depending on the veterinarian's background and qualifications:
 - (a) national and Community legislation on veterinary public health, food safety, animal health, animal welfare and pharmaceutical substances;
 - (b) principles of the common agricultural policy, market measures, export refunds and fraud detection (including the global context: WTO, SPS, Codex Alimentarius, OIE);
 - (c) essentials of food processing and food technology;
 - (d) principles, concepts and methods of good manufacturing practice and quality management;
 - (e) pre-harvest quality management (good farming practices);
 - (f) promotion and use of food hygiene, food related safety (good hygiene practices);
 - (g) principles, concepts and methods of risk-analysis;
 - (h) principles, concepts and methods of HACCP, use of HACCP throughout the food production food chain;
 - (i) prevention and control of food-borne hazards related to human health;
 - (j) population dynamics of infection and intoxication;
 - (k) diagnostic epidemiology;
 - (l) monitoring and surveillance systems;
 - (m) auditing and regulatory assessment of food safety management systems;
 - (n) principles and diagnostic applications of modern testing methods;

- (o) information and communication technology as related to veterinary public health;
- (p) data-handling and applications of biostatistics;
- (q) investigations of outbreaks of food-borne diseases in humans;
- (r) relevant aspects concerning TSEs;
- (s) animal welfare at the level of production, transport and slaughter;
- (t) environmental issues related to food production (including waste management);
- (u) precautionary principle and consumer concerns; and
- (v) principles of training of personnel working in the production chain.

Candidates may acquire the required knowledge as part of their basic veterinary training, or through training undertaken, or professional experience acquired, after qualifying as veterinarians. The competent authority may arrange for different tests to take account of candidates' background. However, when the competent authority is satisfied that a candidate has acquired all the required knowledge as part of a university degree, or through continuing education resulting in a postgraduate qualification, it may waive the requirement for a test.

3. The veterinarian is to have aptitude for multidisciplinary cooperation.

4. In addition, each official veterinarian is to undergo practical training for a probationary period of at least 200 hours before starting to work independently. During this period the probationer is to work under the supervision of existing official veterinarians in slaughterhouses, cutting plants, inspection posts for fresh meat and on holdings. The training is to concern the auditing of food safety management systems in particular.

5. The official veterinarian is to maintain up-to-date knowledge and to keep abreast of new developments through regular continuing education activities and professional literature. The official veterinarian is, wherever possible, to undertake annual continuing education activities.

6. Veterinarians already appointed as official veterinarians must have adequate knowledge of the subjects mentioned in paragraph 2. Where necessary, they are to acquire this knowledge through continuing education activities. The competent authority is to make adequate provision in this regard.

7. Notwithstanding paragraphs 1 to 6, Member States may lay down specific rules for official veterinarians working on a part-time basis who are responsible for inspecting small businesses