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Proceedings & Abstracts

FOOD HYGIENE
FREE ORAL COMMUNICATION ABSTRACTS
PORCHETTA, A LOCAL SPECIALTY OF CENTRAL ITALY: SAFETY AND QUALITY

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Topic: 9. Food Hygiene / Meat Hygiene

Objective: To discuss, according to EU rules, the concept of health quality of a product of meat typical of central Italy, the pork cooked in porchetta. In Campli town, already referred in the municipal statutes of 1575, renewed by Margaret of Austria, there have been contained numerous indications on the use, sale and cooking. For this purpose, it describes the production process of this sausage cooked unseasoned and its phases, it shows the values obtained by microbiological sampling officer in the course of four years and compared with the findings of the literature and with the food safety criteria referred to macro-category to which the product belongs according to the Regulation EC 2073/2005.

To identify the critical control point to be included in the HACCP method from the manufacturer and food safety procedures GMP and GHP necessary to ensure the health objectives set by EC Regulation 852/2004.

Keywords: pork, pig, safety criteria, microbiological risk, HACCP
INVESTIGATING FACTORS AFFECTING SLAUGHTERHOUSE BOVINE SPONGIFORM ENCEPHALOPATHY RAPID TEST SAMPLE QUALITY

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Topic: 9. Food Hygiene / Meat Hygiene

Obtaining the appropriate sample is critical to ensure BSE test result integrity. For BSE, this is the brain stem at the level of the obex - the area where abnormal Prion Protein (PrP\(^{\text{sc}}\)) is most consistently deposited and fortuitously first detectable. Occasionally suboptimal samples (SO) occur where the obex is absent or unidentifiable, in which case negative results are questionable.

The relationship between SO occurrence and factors such as animal age, breed category [dairy, beef breeds native to the British Isles and Continental beef breeds], gender, dehiding method (upward or downward) and sampler identity (n=13) was investigated.

A stepwise logistic regression model was applied to a dataset containing records of 23,646 animals sampled at the abattoir over a 2-year-period. Details relating to SO occurrence were obtained from rapid test laboratory reports. Details relating to the animal's age and date of slaughter, gender and breed were obtained from the Animal Identification and Movement database. Dehiding method changed mid study.

SO incidence was 0.26%. Results indicate that samplers S\(_{\text{ahlmk}}\) (OR=5.9;95%CI=1.9-18.4), S\(_{\text{drlrkl}}\) (OR=3.5;95%CI=1.2-10.5), S\(_{\text{emada}}\) (OR=5.3;95%CI=2.0-13.7), bulls (OR=2.7;95%CI=1.4-5.3), native beef breeds (OR=2.3;95%CI=1.2-4.5) and continental beef breeds (OR=2.4;95%CI=1.3-4.3) had a significant positive effect on SO occurrence. Age and hide removal method were found not to have any significant effect.

The results inform a basis for risk ranking animals prior to sampling. The importance of sampler training and motivation is also indicated. Samplers are encouraged to perfect their technique by sampling animals younger than the statutory prescribed age (currently 72 months) prior to taking official samples.
THE DIFFERENT POULTRY SLAUGHTERHOUSES (SATATUTS HEALTH) IN ALGERIA

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Topic: 9. Food Hygiene / Meat Hygiene

The objective of the study is to show the different aspects at different slaughterhouses health status existing in Algeria. The study was conducted from April to August 2011, in two slaughterhouses: one industrial (A) and the other one traditional (B). The epidemiological unit is the lot of animals slaughtered the same day, in the same slaughter establishment and from the same barn, under the same conditions of transport. Ante-mortem inspection did not reveal any particular pathologies on all lots, except for diarrhea and exhausted subjects. The overall percentage of health seizure at slaughterhouse (A) is 3.55%, while for the slaughter (B) rate is 1.36%. The percentage of entry in each lot varies from one batch to another and from one institution to another. From our results we concluded that in slaughterhouse (A), this percentage varied between 0.30% and 11.4%, while for the slaughter (B), it ranged between 0 % and 11.66%. The main reasons were entered in descending order: skin lesions, fractures with diffusion séro-hemorrhagic, fractures without contusions, cachexia, hematoma, meat congested, the bulb of the keel bone and abscesses. We deduced that the majority of downgrades were due to mishandling, disregard the welfare of animals, the non-mastery of breeding parameters and different stages of slaughter.
FOOD SAFETY ASSURANCE AS A PREVENTIVE MEDICINE PRACTICE AND AN ELEMENT OF "ONE MEDICINE"

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**Topic:** 9. Food Hygiene / Meat Hygiene

Food safety as an independent parameter, outside of quality attributes, is a pre-condition for considering quality aspects. FSMS assessment provides for safety of the end product. It is distinguished from quality assurance programs which provide for a certain pre-determined quality level.

A number of 1.2 billion cases of foodborne illnesses, ranging from very light clinical symptoms to deaths, is thought to occur globally each year. The end target of a FSMS design, implementation and auditing is to eliminate as many as possible of these cases, through preventive interventions at various links of the food chain. For this to be achieved cooperation is required, among different health and food professionals, to operate in concert. Critical for these operations is Veterinary Public Health interventions, for problem solving, related to public health needs assessment, connected to zoonotic diseases, animal health and welfare and food safety.

Further, for an efficient human health protection from foodborne diseases, more specific cooperation is required between veterinary and human medicine professionals. The field of such a common activity includes bacteria, viruses, parasites, prions, toxins, chemicals, metals, allergens, malnutrition, over-nourishment. This is an expression of one medicine, resulting in one health. It provides for an integration of human, animal and environmental health, closest to sources of infection or contamination and common access in medical data related to animal, food, environment and humans. It switches to a proactive, preventive paradigm through an holistic interdisciplinary approach.
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FEEDING FRESH – AN ANACHRONISM OR A NEW DIRECTION IN REACHING OPTIMAL HEALTH OF OUR PETS?

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Topic: 9. Food Hygiene / Meat Hygiene

„You are what you eat” – a statement, which intrigues more and more people nowadays. Scientific research brings numerous evidence that a lot of the civilisation diseases are directly linked with eating habits. However as people are becoming more conscious of what they eat, are they also aware that the same might apply for their pets? Increasing number of pet diseases such as obesity, allergies and cancer might be also the results of pet’s dry food diet, which became so popular in the 50’s of the 20th century.

What are the benefits and potential risks of feeding natural versus dry dog food? In my presentation I will deal with this controversial issue of feeding raw or homemade cooked diet. As a student of the Faculty of Veterinary Hygiene and Ecology in Brno that focuses on food hygiene and safety, I will support my arguments with the research findings of the individual departments.

What if by not acknowledging the benefits of fresh food we neglect one of the most powerful ways of keeping our dogs healthy? Worse yet, what if by feeding the carnivores the food that is essentially the ruminant diet, we enhance the natural selection? During the evolution the species that haven’t been able to adapt to the environment became extinct. Could it be that increasing number of civilization diseases are the warning voice of nature speaking to us?
MONITORING OF ENVIRONMENTAL POLLUTANTS (PB, CD, HG, AS) IN LIVESTOCK TISSUES IN DIFFERENT REGIONS OF MONGOLIA

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Topic: 9. Food Hygiene / Meat Hygiene

The contamination of animal tissues by cadmium, lead, mercury and arsenic was monitored in sheep, cattle and horses in selected regions of Mongolia, for assessment of potential risks for human population in relation to food safety. In total 415 samples of livestock tissues were collected in field conditions in Mongolia, a group of 38 mixed samples represented different districts and regions. Evaluation of heavy metals in mixed samples of muscles and liver tissue was performed in accredited laboratory. Inductively Coupled Plasma Mass Spectrometry (ICP-MS) was used for determination of cadmium, lead and arsenic. Mercury content was quantified in tissues with Atomic Absorption Spectrometry (AAS). Presumption of higher concentration level of pollutants in northern part of Mongolia (in regions with the highest number of illegal and legal mining activities) was statistically proved (p < 0.05). But there were found much exceeding levels of cadmium of maximum limits according to European Commission Regulation (ES) 1881/2006 in muscle and liver of horses. There was the influence of age on the content of cadmium in liver statistically proved (p< 0.05). There were found statistically significant bonds between the concentrations of all heavy metals monitored (p< 0.05); the higher concentration of one pollutant in the sample, the higher concentrations of other pollutants were found. The results, especially from industrial regions, were not acceptable in respect to EU limits for heavy metals concentrations in meat products for human consumption. Detailed regular monitoring should be implemented in cooperation with research partners from Mongolia.
A PILOT SURVEY OF BACTERIAL CONTAMINATION ON FISH MEAT IN NA-GAY DISTRICT KHAM-MAUN LAOS PDR

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Topic: 9. Food Hygiene / Meat Hygiene

A pilot survey for the pathogens *Salmonella* and *Escherichia coli* O157:H7, and *E. coli* was conducted on 100 fish and fish product (domestic fish) an 1-month period to assess the likelihood of introduction of novel pathogen and as a guide for development of a domestic fish meat and fish product Microbiological Database programme in Na-gay District Kham-Maun Laos PDR. *Salmonella* was not isolated from domestic or from fish meat and fish product. The prevalence of *Salmonella* in fish meat and fish product was 3.6% (95% CI 1.0–9.0) with positive samples detected from fish meat and fish product. The prevalence of *E. coli* O157:H7 on domestic fish meat and fish product was 1% (95% CI 0.03–5.4) while the overall prevalence of *E. coli* O157:H7 in imported fish meat and fish product was 1.8% (95% CI 0.2–6.4). All except have an *E. coli* count of <100 CFU cm⁻² or g⁻¹, indicating good hygiene quality of domestic product. The results demonstrated that importation of uncooked and cooked fish meat and fish product is a potential route for the introduction of *Salmonella* and *E. coli* O157:H7.
RISK ASSESSMENT OF HEAVY METAL CONTAMINATION IN SOME EDIBLE FISH FROM KHAMMOUAN PROVINCE, LAOS PDR

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Topic: 9. Food Hygiene / Meat Hygiene

Concentration of eight heavy metals (Pb, Cd, Ni, Cr, Cu, Zn, Mn, and As) in meat of 5 species fish collected from local markets in Khammouan province, Laos PDR were measured in summer 2013. The concentrations of those heavy metals, except Pb in Nile tilapia (Oreochromis niloticus) and Silver carp (Puntius gonionotus, Bleeker) were found to under the safety limitation suggested by various authorities and gave no indication of heavy metal contamination. In Nam Tern reservoir this study also showed that, Zn was most and Cd was least accumulates metal in this study fish meat. Statistical analysis clearly revealed that there was significant variation of the heavy metal concentrations in different fish meat in summer. This study also showed that there was no risk of food safety and human health for consumer due to consumption of studied fish meat under current consumption rate.
COMPARISON OF METHODS OF EXTRACTING DNA FROM HUMAN FECAL SAMPLES CONTAMINATED WITH FOUR BACTERIAL PATHOGENS

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Topic: 9. Food Hygiene / Meat Hygiene

Type of Session: Poster

Introduction: We previously reported our developed screening system using multiplex real-time SYBR Green PCR assays (RFBS24), which were simultaneously evaluated for the detection of 24 target genes of foodborne pathogens in fecal DNA samples. Fecal DNA samples were prepared by the Qkit method (lysing bacterial cells using surfactant). However, the efficiency of DNA extraction from Gram-positive bacteria is low with this method. Therefore, we investigated DNA extraction methods optimized for RFBS24.

Methods: (1) DNA samples were extracted from fecal samples inoculated with Clostridium perfringens, Staphylococcus aureus, Salmonella Typhimurium, and Campylobacter jejuni by the Qkit method and Ukit method (disrupting bacterial cells by bead-beating). (2) Real-time SYBR green PCR (SG-PCR) and real-time quantitative PCR (q-PCR) were performed with these samples. (3) Patient fecal DNA samples by the Qkit and Ukit methods in Salmonella and Campylobacter foodborne outbreaks were tested using RFBS24 and the results were compared with bacterial culture methods.

Results: (1) Regarding SG-PCR, the mean Ct value of Ukit DNA samples from the four bacteria were lower than that of the Qkit DNA samples. (2) The copy numbers of Ukit samples from the four bacteria were 8-234 times higher than that of the Qkit samples. (3) The positive rate of RFBS24 using Ukit samples was higher than that using Qkit samples.

Conclusions: The efficiency of DNA extraction was higher with the Ukit method than with the Qkit method. The Ukit method also effectively improved the positive rate of RFBS24 and other PCR tests.
THE EFSA ASSESSMENT OF BIOLOGICAL MEAT SAFETY ASPECTS TO BE ADDRESSED DURING MEAT INSPECTION IN THE EUROPEAN UNION

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Current meat inspection practices in the European Union (EU) have a multidisciplinary scope covering food safety, animal health and welfare and, to a certain extent, meat quality issues. These practices originate from a conceptual framework developed over 120 years ago, which was largely based on the human and animal infectious diseases epidemiological context at the time. The Scientific Panel on Biological Hazards (BIOHAZ) of the European Food Safety Authority (EFSA) has been recently tasked by the European Commission (EC) to perform a scientific assessment, from a public health perspective, on current meat-safety issues that should be addressed in the EU by meat inspection, including how changing current practices would impact on animal health and welfare. The methodological approach developed for identifying and risk-ranking meat-borne biological hazards for the main food animal species is presented, together with the results of its application in the EU context. The strengths and weaknesses of current meat inspection practices are evaluated from a public health perspective, and recommendations are made on how to address these weaknesses. Recommendations formulated by the BIOHAZ Panel on adapted or new inspection methodologies needed in order to address the identified meat-borne biological hazards are discussed. The assessment made by EFSA will support the EC in the formulation of a modernised meat inspection framework that would efficiently address currently relevant hazards.
EFFECTS OF GOAT MILK PEPTIDE ON IMMUNO HISTO CHEMISTRY PROFILE OF LUNG CANCER RATTUS NORVEGICUS

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Topic: 9. Food Hygiene / Milk Hygiene

Complete feed with high linoleic acid content may produce goat milk containing high linoleic acid too and it has specific protein with molecular weight of 42 kDa. The isolated milk peptide can be promoted as candidate peptide with anti-carcinogenic effect. Lung Cancer Rattus norvegicus induced by Benzapiren were treated by goat milk peptide of 42 kDa orally during two weeks period, and it showed to have a good recovery of their lung tissues being to normally. By immunohistochemistry technique it were performed that alveoli septum of bronchi be compactly, no infiltration of inflammation cell any more, again to form the long bronchi connective tissue and apoptotic cell well performed.

Key word: complete feed, goat milk peptide, lung cancer, immunohistochemistry, Rattus norvegicus.