
Scientific Tracks & Sessions

September 06, 2018

Food Safety 2018



International Conference on
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September 06-08, 2018 | Edinburgh, Scotland

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Potentially effective disinfection of hatching and table eggs with combined steam and ultrasound treatment

Hanieh S Musavian
FORCE Technology, Denmark

Background: SonoSteam is a minimally decontamination technology that uses the combined effect from steam at 90°C and ultrasound at 25-35 Hz. This system has been designed to reduce levels of pathogenic bacteria on raw meat products such as poultry. On poultry, the system reached approximately 1 log reduction based on previous factory trials. This same technology is now being investigated on table eggs for consumption as well as for decontamination of hatching eggs.

About this study: Combined steam ultrasound treatment was investigated on artificially contaminated table and hatching eggs with levels around 5 Log of Salmonella and Enterobacteriaceae. A small-scale testing prototype was used and experiments were conducted using treatment times of 1.0, and 1.5 seconds at 90-96°C. Sensory evaluations were conducted over a period of 12 weeks with 72 eggs tested every week, using a food texture analyzer (TA-XT analyzer by Texture Technologies). Tests included egg weight, yolk

and albumin height, vitelline membrane strength, shell breaking strength and Haugh Unit. Hatching frequency was determined in a large experiment with 504 hatching eggs in total. Each of the groups (control, 1.0s and 1.5s) were assigned 168 eggs for comparison.

Results: Results showed complete reduction of Salmonella and Enterobacteriaceae at 1.0s. The results showed no changes in egg quality compared to control untreated eggs. Furthermore, results suggested the hatching frequency of the treated samples were no different than the controls. In all cases, a hatching frequency of 88% was observed.

Speaker Biography

Hanieh S Musavian has completed her master's degree in biotechnology at the age of 22 years from Technical University of Denmark. Current position as R&D Project manager and specialist at FORCE Technology (an GTS Institute) which is an independent not-for-profit organization located in Denmark.

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A new E-learning program about breastfeeding, continuing medical education in paediatrics

Virginie Rigourd¹, C Roux², C Billeaud²

¹ Human Milk Bank of Ile de France

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Background: Women mostly stop breastfeeding (BF) because of a lack of support and information in the post-partum period. In spite of the European recommendations: “improvement the training of all the healthcare professionals involved in perinatal period is the first stage of the recommendations to favour BF”, during their medical studies, perinatal professionals spend little time studying BF.

Objectives: An E-learning program on BF has been created for healthcare professionals.

Material and method: This online program is the result of a work between expert in BF and broadcasting distance training professionals.

Summary of results: This “BF e-learning program” can be found within the French Association of Paediatrics website, in the section of the AEEP (www.aeep.asso.fr). The healthcare professional will need 3 hours to approach the subject. He will be able to: -Discover in the “course” tab, 5 main chapters (epidemiological data- BF benefits- preparation for BF- BF complications- BF in the everyday life). - Use the “research system” to reach lexicon or go into tackled issues by using a keyword. - Use the “documents” tab to download all the


documents needed. - Strengthen his knowledge by studying clinical cases and get closer to an Evidence Bases Medicine method. - Validate his training by filling to the “quiz”. - Discuss via the “messaging” tab with the expert authors.

Conclusion: This online program on BF, is an educational method, which provides continuing medical formation and evaluates practices in paediatrics. This program could be complemented with a recent MOOC (massive online open course) on BF. Take home message: We hope that improving the BF knowledge of healthcare professionals will help increasing and maintaining BF.

Speaker Biography

Virginie Rigourd is the managing director of the Human Milk Bank of Ile de France. She has graduated from the Medicine University in Paris, France in 1998 and finished post graduate training in 2003 from the same university on intra uterin growth retardation topics. She worked as paediatrician ahead of Ile de France Milk Bank, Paris, France and neonatologiste in NICU at Necker Hospital, Paris, France. Member of the French Milk Bank Association and European Milk Bank Association. Since 2002 she worked as a national consultant, providing assessments of human milk security and on projects on human milk quality. Dr. Rigourd has carried out few research on medication and breast feeding. During her work she has gained local and national recognition for her different advice on breast feeding and on practice around human milk in NICIU.

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Evaluation of microbial load of beef of arsi cattle in Adama town, Oromia, Ethiopia

Arse Gebeyehu Wode¹, Mohammed Yousuf² and Ameha Sebsibe³¹Adami Tulu Agricultural Research Center, Ethiopia²Haramaya University, Ethiopia³International Livestock Research Institute, Ethiopia

The study was conducted in Adama city, on carcass samples collected from the Ethiopian breed called Arsi breed cattle with the objective of evaluating beef microbiological qualities with standard procedures. Carcass samples were randomly chosen at abattoir using systematic random sampling techniques. On the night of carcass sampling about 125 cattle were slaughtered and the carcass samples were chosen on every 10 counting. Beef samples were aseptically excised and collected from all parts of the exposed body of carcasses. The methods described by the Nordic Committee on Food Analysis (NMKL) were adopted to analyse each of the parameters considered. Aerobic plate (AP) count, total coliform (TC) count and faecal coliform (FC) counts were significantly different among different sampling days and batches of samples ($P < 0.05$). The mean AP, TC, FC, E. coli and staphylococci counts

were 1.62×10^5 , 5.29×10^1 , 9.05×10^1 , 8.97×10^1 and 5.54×10^5 , respectively. Salmonella and Shigella bacteria were not isolated per 25 g samples. In Adama, carcasses are normally transported to the butchers' shop either in vans, minibus, taxi, three-wheel motor cycle and horse-cart. This exposes the meat to a number of pathogens some of which may be pathogenic.

Speaker Biography

Arse Gebeyehu Wode was born on September 12, 1982 and studied my elementary and high school at Ethiopian Adventist Academy. After successful completion of high school he joined Mekelle University in 2002 to study animal science and got his BSc degree. During his postgraduate study he studied animal production and collected his MSc degree in 2012 from Haramaya University. He is a senior researcher at Adami Tulu Agricultural Research Center with over 10 years of experience in meat and dairy animal research. In his recent research he studied the microbial load of beef of Arsi Cattle (*bos indicus* Ethiopian breed).

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Safe food handling: How to reach the consumer?

Wieke van der Vossen-Wijmenga

Wageningen University and Research and Netherlands Nutrition Centre, The Netherlands

Estimates by the National Institute for Public Health and the Environment (RIVM) show that, each year, there are about 700,000 cases of gastrointestinal symptoms related to contaminated food in the Netherlands. In about 40% of foodborne infection clusters reported to the Centre for Infectious Disease Control (CIb), the food preparation site was stated to be 'home'. Therefore, because most of these foodborne infections occur in the home, consumers must focus on food safety when buying, washing, separating, heating and refrigerating food. This presentation underpins the Netherlands Nutrition Centre's recommendations to consumers for preventing foodborne infections. In 2015, 2016 and 2017 a campaign has been turned off which was funded by the Dutch Ministry of Health, Welfare and Sports. During this campaign not only information was provided and awareness created, but also tools were developed to help the consumer. Tools like a refrigerator thermometer were distributed by retailers to help

consumers improve their safe food handling practices. Besides providing practical information and tools to consumers regarding safe food handling, also topics are addressed that people are worried about. Take E-numbers (additives) or pesticides. Perception of risks by consumers can differ significantly from the scientific insights. During this presentation it will be presented how much this risk perception differs and how the Netherlands Nutrition Center communicates about these topics.

Speaker Biography

Wieke van der Vossen-Wijmenga has graduated as a food scientist in 1997 from Wageningen University & Research, Netherlands. She has specialized in food microbiology. Currently she works as an expert for food safety at the Netherlands Nutrition Centre. The Netherlands Nutrition Centre is the foremost authority consumers turn to for scientifically evidenced, independent information on healthy and safe food, as well as for making more sustainable food choices. She is responsible for accurate and up to date information and acts as the Nutrition Centre's spokesperson for food safety. Before joining the Netherlands Nutrition Centre she worked as a senior Lead Assessor and Food Safety Manager for various organizations within the food industry.

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Innovative strategy to improve food safety standards in the emirates of Dubai by happiness inspection

Sultan Ali Al Taher
Dubai Municipality, UAE

Introduction: Dubai Municipality Food Safety Department used an innovative strategy “Happiness Inspection - No fine but more support & guidance” to improve food safety standards of 450 establishments evaluated as “unsatisfactory” consecutively in the last 3 years and required improvements to meet regulatory standards.

Methods: Initial data of these establishments was retrieved from Food Inspection System to determine non-conformities. Following data analysis, these establishments were visited to establish root causes of non-conformities. A behavior-based approach of inspection i.e. coaching, guidance, on job training, regular meetings and frequent follow-ups were used which resulted in gradual improvement in hygiene practices. After achieving required level of compliance, establishments were scheduled back to regular routine inspections.

Results: After implementing Happiness Inspections, evident improvement was noticed in food safety standards at these establishments. Sixty percent establishments have achieved improved food safety scores within 9 months. Improved

establishments data was statistically analyzed (t-test) and a significant improvement ($p < 0.05$) was observed where food safety standards i.e. cross contamination, cleaning & disinfection and pest control showed considerable improvement. Next routine inspection reports showed noticeable improvement in grade & color cards issued to these establishments.

Significance: Through this coaching and guidance approach, food safety culture has also been improved significantly inside these establishments. This initiative also assisted regulatory authorities in planning new specialized trainings to improve regular inspection approach.

Speaker Biography

Sultan Ali Al Taher is the Head of Food Inspection Section in Dubai Municipality Food Safety Department. He has been working in Dubai Municipality Food Safety Department since April 1999. He has completed his Master degree in Food Safety Management from Higher Colleges of Technology, Dubai, UAE. He did his Bachelor of Public Health, Environmental Health Major from Griffith University, Gold Coast, Australia. Sultan has participated in several local & international conferences (like NEHA, IAFP, COLD Chain Conference etc.) and meetings & food safety activities. He is also an active member of IAFP & other international organization like IFST, NEHA, etc.

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An assessment of cleaning technique using swabbing procedures

Paula Mitton

Five Star Hygiene and Safety Ltd, UK

A swabbing exercise was carried out within 35 outlets of a UK-based supermarket retailer over a 7-month period. The visits were unannounced and conducted on normal working days. The purpose was to check whether the swabs would pass the recommended values, in order to give an indication of whether cleaning techniques were effective and frequent enough. A Hygiena System Sure Plus Luminometer was used for the exercise together with Ultra Snap Surface ATP Test swabs. Swabbing was carried out on counters where open raw and ready to eat food products were served to customers. A total of 1108 swabs were taken. For each counter one touch point (hand contact surface), two fixed surfaces and two pieces of moveable equipment was swabbed. When a swab failed a staff member was asked to clean the surface using their normal procedure. If the swab failed again the cleaning method was checked closely, and suggestions made. There were 281 swab fails, just

over 25% of the total. 38% of touch point swabs failed, 26% of fixed surface swabs failed and 19% of moveable equipment swabs failed. 51 swabs failed a second time after cleaning. It was observed that this was due to a number of factors: the two stage cleaning technique not being followed with an over-reliance on sanitiser only, lack of agitation to release dirt and dirt being smeared onto the surface from surrounding areas. A clean cloth was used in all cases. Results improved after using detergent with equipment that would allow agitation. A re-evaluation of cleaning technique is needed by food safety professionals. Just smearing dirt around is not cleaning!

Speaker Biography

Paula Mitton is the managing director of Five Star Hygiene and Safety Limited at UK. She works for the encouragement of food safety and hygiene.

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Food safety & hygiene: Contemporary issues and a future direction for the Nigerian food supply chain

Sirajo Mohammed Funtua and Gimba K I
Federal Polytechnic, Nigeria

Food safety is essential for the health and well-being of consumers, while food quality is for their satisfaction and nutrition. If quality and safety are to be guaranteed, good practices must be employed from growing, harvesting and postharvest handling of foods, to the processing, packaging, distribution, during storage and preparation before consumption. This has become imperative because foodstuffs undergo progressive deterioration in quality and safety after harvested, gathered, caught or slaughtered with microbes such as bacteria, yeasts, moulds, insects and rodents being in endless competition with man for the supply of his food. These factors together with environment and presence of toxic chemical such as pesticide residues combine to make food either inedible (quality issue) or unsafe (safety issue) for use and/or consumption. There are higher expectations from the 21st century consumers who want their food products to be palatable, have high nutritional value and free from pathogenic and spoilage microorganisms. Hence, preservation and maintenance of safety of food produced as it goes from farm-to-fork and/or from pasture-to-plate remain the number one issue of concern among governments, stakeholders and consumers in many committed countries of the world. Owing to the fact that specific consumer requirement

is that foods give them the required nourishment and pose no direct or indirect risk to their health. Nigeria as a nation has a long way to go to ensure that safe food products are distributed to the teeming population of Nigerians that depend largely on regulated food products that are manufacture in Nigeria.

Speaker Biography

Sirajo Mohammed Funtua is a Principal Instructor I, presently awaiting to be promoted to the position of Assistant Chief Instructor with the department of Food Science and Technology, Federal Polytechnic. Kaura-Namoda, Zamfara state. He attended Aya primary school, Funtua between 1980 and 1986. He completed his secondary school education between 1987 and 1992 at Government Day Secondary School, Funtua and Unity Secondary School (Exchange Programme Institution) Malumfashi, Katsina State. He then proceeded to Federal Polytechnic, Kaura-Namoda and he bagged National Diploma in Food Science and Technology in the year 1998. He bagged HND in Food Technology from Kaduna Polytechnic, Kaduna between 2003 and 2005. He then proceeded to the Federal University of Agriculture, Makurdi where he was awarded with the certificate of Post Graduate Diploma (PGD) in Food Science and Technology between 2009 and 2010; and he obtained an MSc in Food Safety and Quality Management in the year 2013 from the University of Greenwich, London, United Kingdom. He has been serving the Nigeria Institute of Food Science and Technology at the local and national levels for several years as the Chairman NW II between 2014 and 2016, National Publicity Secretary between 2016 and 2018. He has published several research findings in the national and international journals of high reposes.

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Lactating Women's Nutrition

Claude Billeaud¹ and Virginie Rigourd²

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The composition of breastmilk is partially related to the mother's diet. If protein and carbohydrate composition of human milk, lipids minerals, vitamins and trace elements are highly depending of lactating mother's feeding of question of an ideal diet suitable for breast feeding women arises, and also the necessity or not of a supplementation. We know that the energy requirements are unique to each mother (with a lower limit not to cross) and the distribution of macronutrients (lipids, proteins and carbohydrates) is identical to what is recommended for the population of non-breastfeeding women, ensuring an adequate and balanced contribution in various essential fatty acids. By giving priority to foods, which is nutritionally interesting and adopting a balanced diet, breastfeeding women can cover their nutritional.

Speaker Biography

Claude Billeaud received his MD degree from the Medical University of Bordeaux (France) in 1979 after a graduation in human cytogenetics (1976). He then studied pediatrics and has been the Clinical Assistant Director of Bordeaux University in the departments of Pediatrics, Neonatology and Intensive Care since 1983. He currently serves as a pediatrician in the neonatal unit at the Children's Hospital of Bordeaux, as a scientific manager of Bordeaux-Marmande human milk bank, as a lecturer and head of research in neonatal nutrition at the Medical University of Bordeaux.

His particular interest in research led him to graduate in Biology and Health (1988, Bordeaux), be awarded a master in statistics applied to clinical research (1991, Montreal) and complete a PhD in nutrition and food science (2000, Bordeaux). Along his career he has often been invited as a guest professor specialized in nutrition and neonatology in various universities abroad (Montreal, Corrientes in Argentina). Over the last 35 years, he has been an active member of different scientific organizations, either French, European or American, specialized in perinatal medicine (neonatology, pediatrics and nutrition). In this instance, he has served as the President of the Association for Pediatric Education in Europe (A.P.E.E) since 2008. He has also been very involved in the French human milk banking association (ADLF) for more than 10 years, sharing his academic knowledge focused in nutrition and his long clinical experience in neonatology. He is currently carrying out several researches on the composition of human milk. As an expert in nutrition and perinatal medicine, he is also the author and co-author of numerous scientific publications.

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Speaker Biography

Virginie Rigourd is the managing director of the Human Milk Bank of Ile de France. She has graduated from the Medicine University in Paris, France in 1998 and finished post graduate training in 2003 from the same university on intra uterin growth retardation topics. She worked as paediatrician ahead of Ile de France Milk Bank, Paris, France and neonatologiste in NICU at Necker Hospital, Paris, France. Member of the French Milk Bank Association and European Milk Bank Association. Since 2002 she worked as an national consultant, providing assessments of human milk security and on projects on human milk quality. Dr. Rigourd has carried out few research on medication and breast feeding. During her work she has gained local and national recognition for her different advice on breast feeding and on practice around human milk in NICIU.

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