

SAŽETAK

UTJECAJ HLAĐENJA NA MIKROBIOLOŠKU KVALITETU POVRŠINE SVINJSKIH POLOVICA I POST MORTALNE PROCESSE U MESU SVINJA

Cilj istraživanja je bilo praćenje mikroklimatskih uvjeta u prostoriji za hlađenje svinjetine i njihov utjecaj na temperaturu mesa, pH vrijednost, količinu mliječne kiseline kao i mikrobiološku kvalitetu površine svinjskih polovica. Tijekom pokusa temperature u prostoriji za hlađenje i temperature mesa bile su sukladne važećim propisima za hranu. Rezultati mjerenja relativne vlage su kod jedne trećine mjerenja pokazivali niže a kod više od polovine mjerenja više vrijednosti od propisanih. Više vrijednosti relativne vlage štetno su utjecale na smanjenje broja aerobnih bakterija. U dva je slučaja utvrđen nestandardni post mortalni proces (procijenjen na temelju pH vrijednosti i količine mliječne kiseline).

Ključne riječi: rashlađivanje, temperatura, vlaga, mikrobiološka kvaliteta, svinjske polovice

REFERENCES

Eley, A.R. (1996): Microbial Food Poisoning. Chapman & Hall, 205 strán.

Joseph, R.L. (1997): Potential for fast chilling. Meat International, 7, 28-29.

Potravinový kódex Slovenskej republiky (1996): Výnos Ministerstva pôdohospodárstva a ministerstva zdravotníctva č. 981/1996-100 z 20. mája 1996. Vestník Ministerstva pôdohospodárstva SR, XXVIII, čiastka 14.

STN ISO 4832 Mikrobiológia (1997): Všeobecné pokyny na stanovenie počtu koliformných baktérií. Metóda počítania kolónií.

STN ISO 4833 Mikrobiológia (1997): Všeobecné pokyny na stanovenie celkového počtu mikroorganizmov. Metóda počítania kolónií kultivovaných pri 30 OC

STN ISO 6579 Mikrobiológia (1997): Všeobecné pokyny pre metódy na dôkaz baktérií rodu Salmonella.

STN ISO 7251 Mikrobiológia (1997): Všeobecné pokyny na stanovenie počtu predpokladaných baktérií Escherichia coli.

STN ISO 10560 Mlieko a mliečne výrobky (1997): Dôkaz baktérií Listeria monocytogenes

Turek, P., Gorzová, A., Máté, D. (1989): Surface contamination of swine after slaughter processing and cooling. Folia veterinaria, XXXIII, 1, 131-140.

Turek, P. (1992): Chladienie mäsa a drobov po zabití. In Izák a kol.: Hygiena a technológia mäsa. Príroda, 35-42.

Veterinární laboratorní metodiky (1990): Hygiena potravin. ŠVS SR, SVS ČR, 32-33.

Woltersdorf, W. (1994): Technik und Hygiene beim Schlachten von Schweinen. In Kulmbacher Reihe Band 13: Schlachten von Schwein und Rind, 84-110.

* The paper was presented on the scientific meeting Hygiena alimentorum XXVI, May 25 -27 2005, Štrbske Pleso - Vysoké Tatry. Slovakia ■

SUGGESTIONS ON THE REVISION OF MEAT INSPECTION METHODS

B. Cenci Goga¹

ACTIVITIES OF THE EFSA

The European Food Safety Authority was created on 28th January 2002, with a Regulation of the European Parliament and of the Council (178/2002), to protect the safety and the interests of consumers. The name was translated in the EU languages with variable results. If, for example, French, German and Portuguese with, respectively, Autorité européenne de sécurité des aliments, Europäische

Behörde für Lebensmittelsicherheit and Autoridade Europeia para a Segurança dos Alimentos, give the exact idea of what the authority deals with, namely of how safe foods are, the Italian and Spanish translations (Autorità europea per la sicurezza alimentare and Autoridad Europea de Seguridad Alimentaria) cause some confusion in Anglophone readers. As a matter of fact, the Italian translation for food safety is sicurezza degli alimenti, while sicurezza alimentare,

¹ Prof.dr.sc. Benjamino Cenci Goga, Università degli Studi di Perugia, Dipartimento di Scienze Biopatologiche e Igiene delle Produzioni Animali e Alimentari, Sezione di Ispezione degli Alimenti di Origine Animale

according to the FAO definition, is the translation for food security that means the possibility that each individual has to constantly access enough food to lead an active and healthy life.

The EFSA is the European Union answer to the consumer distrust that involved both the political and scientific world following the important sanitary problems of the 1990s such as BSE, the contamination of certain foods with dioxins and the avian influenza virus. The main EFSA function is to give independent and objective opinions on food safety matters, just like the FSA (Food Standard Authority) created in Great Britain in April 2000. The European Union thus hopes to regain consumer trust, cutting out every clash of interest source inside its structures. The main aim of the EFSA is to "...contribute to a high level of consumer health protection in the area of food safety through which consumer confidence can be restored and maintained". The first EFSA seat was in Bruxelles where, in May 2003, the Scientific Commission and the Panels were designated. The EFSA, with the help of experts and of work groups, provides scientific opinions and risk evaluations on specific matters posed by the risk management organs, meaning the EU institutions with political responsibility: the European Commission, the European Parliament and the EU Council of Ministers. The opinions expressed by the EFSA, characterized by maximum scientific rigour, therefore have the role of guiding the normative deeds and the regulations concerning consumer protection in food safety matters.

THE OPINIONS OF THE BIOHAZ PANEL

The scientific organization of the EFSA comprises various areas (additives, genetically modified organisms, biological hazards, chemical contaminants, etc...) and most opinions related to veterinary competences are expressed by the members of the BIOHAZ area. This panel deals with matters concerning meat inspection, zoonoses, transmissible spongiform encephalopathies and food hygiene in general. The BIOHAZ panel activity produced various opinions ranging from those concerning the use of antimicrobial agents in chicken farming to those concerning BSE (the complete list and the opinions

in the official language, English, can be found at the following address: http://www.efsa.eu.int/science/biohaz/biohaz_opinions/catindex_en.html).

In view of the future legal trends concerning the meat inspection sector, 4 opinions on the revision of inspection methods were published. The first one concerned risk evaluation and control strategies for bovine tuberculosis (Opinion of the scientific Panel on Biological Hazards on "Tuberculosis in Bovine Animals: Risks for human health and control strategies", The EFSA Journal, 2003, 13, 1-53), the second opinion concerned the consumption of meat infected with trichinella or cysticercus (Opinion of the scientific Panel on Biological Hazards on "the suitability and details of freezing methods to allow human consumption of meat infected with Trichinella or Cysticercus" the EFSA Journal, 2004, 142, 1-50); more recently two documents on the revision of meat inspection were published, the first concerning lambs and goats (Opinion of the scientific Panel on Biological Hazards on "Revision of Meat Inspection Procedures for Lambs and Goats", the EFSA Journal, 2004, 54, 1-49) and the second bovines raised in integrated production systems (Opinion of the scientific Panel on Biological Hazards on "Revision of meat inspection for beef raised in Integrated Production Systems", the EFSA Journal, 2004, 141, 1-56). A document concerning cysticercosis risk evaluation and the possible use of diagnostic tests more sensitive than inspection is currently being published.

REVISION OF POST-MORTEM MEAT INSPECTION METHODS

In view of the future changes in the EU legislation and considering the indications for redrafting and simplifying the current law, (Regulation 852, 853 and 854 of 2004), the EFSA was posed specific questions on post-mortem inspection methods. In particular, the EFSA was asked to determine, for each of the palpations and incisions mandatory according to Council Directive 64/433/EEC (as amended by Directive 91/497/EEC) the following aspects: which disease or other process is targeted; the pathogenic agent and the relevance for human health; the risk for Public Health if procedure(s) are

to be omitted for the inspection of animals raised in integrated production systems; whether alternative methods, including use of laboratory and rapid methods, could ensure a level of health protection at least equivalent to that provided by the current procedure.

With the present note the authors wish to refer the conclusions reached by an expert work group (Bénard, Buncic, Cenci-Goga, Cubero, Dwinger, Ellerbroek, Mac Johnston, Willingham).

Despite the fact cattle can be infected with pathogens that cause clinical signs detectable during the ante-mortem inspection and/or lesions detectable post-mortem, reports indicate that the post-mortem inspection of apparently healthy animals only detects 20% of all the macroscopic lesions that are actually present in 1% or less of the animals slaughtered (Harbers 1991; Berends et al., 1993). Most of the macroscopic lesions found during the post-mortem examination indicate animal pathologies that are in no way related to public health (Hathaway and McKenzie, 1989; Berends et al., 1993). Actually, it is generally accepted by the scientific community that the efficacy of the routine post-mortem inspection in detecting lesions of interest for public health is limited (Blackmore, 1983; Hathaway et al., 1987; Hathaway and McKenzie, 1989). The expert group considered these preliminary statements to reach the conclusions and express the opinions object of this note. One of the authors wishes to mention the critical position adopted, as Italian delegate, concerning the publishing of an opinion that, from a superficial reading, seems to limit the competences of veterinary doctors. A brief digression is necessary to make this point clear. During the 1990s laws (DPR 312/91 and D.lgs. 286/94) laid down exactly how a post-mortem examination had to be performed by giving a detailed list of exams. Making a codified methodology that followed a preordered scheme mandatory was, and still is, criticized. The previous law only suggested that inspection should be methodical, accurate and very precise, without giving anatomic or necroscopical indications, but leaving the decisions up to the veterinary doctors that acted considering the single case. Many people regretted, and still regret, the approach suggested by the old law, both in consideration of the time

necessary to conduct such an accurate inspection, that is often not compatible with industrial slaughtering, and in consideration of the risk that performing mandatory inspective deeds will make sanitary meat inspection a routine and demotivating activity. This is how both the opinions published by the EFSA and the new 2004 EC regulations (n. 852, 853 and 854) should be interpreted: not as a return to the past, but as a way to professionally reposition the veterinary doctor in the meat inspection sector while guaranteeing a better consumer protection.

The expert groups also took microbial carcass contaminations into consideration. Food animals can carry pathogenic microorganisms without showing any signs of disease ante-mortem, or visible lesions post-mortem. During slaughter and dressing procedures, these pathogens can be directly or indirectly transferred onto the meat surface. In addition, it is recognised that physical meat inspection involving palpation and cutting increases the risk of cross-contamination. Modified approaches are therefore necessary to reduce inspection mediated cross-contamination of meat, whilst improving or at least maintaining the efficacy of the conventional post-mortem inspection.

Another important aspect considered by the EFSA experts was the possibility that palpation and incision of certain organs during inspection was not necessary for animals coming from an integrated production system, that are also considered non suspect after ante-mortem and visual post-mortem inspection, and when there are no indications of increased animal health or public health risk (for example salmonellosis or *Taenia saginata* cysticerci). This alternative, simplified inspection system is only applicable if it includes other prophylaxis and inspection activities, if a thorough ante-mortem examination is ensured with full recording systems implemented and if any sign of abnormality is followed by a further detailed examination of the carcass and offal.

The work group then considered the sensitivity of alternative or simplified methods compared to current meat inspection measures. As far as tuberculosis is concerned, the inspection of the retropharyngeal, bronchial and mediastinal lymph nodes is particularly helpful. Removing the detailed inspection, i.e. multi-

ple incisions, of these three sets of lymph nodes, as required under current meat inspection legislation would reduce the detection rate of tuberculosis in bovines. This is in accordance with the conclusion reached by the EFSA/BIOHAZ panel stating that adoption of palpation only, instead of palpation and incision, for inspecting lymph nodes and organs, (e.g. lungs), for evidence of tuberculosis would lead to a lower detection rate of such lesions. Presently, although it is unknown whether omission of these incisions would increase the risk to public health due to *M. bovis* infection, it is clear that it could reduce the detection rate of infected animals, and therefore negatively affect animal disease control.

The traditional physical post mortem inspection has a low sensitivity to detect *Taenia saginata* cysticercosis. Therefore, alternative systems based on farm controls as well as on the use of alternative diagnostic tests would increase the detection rate and thus benefit public health. However, the diagnostic tests available at the moment have yet to be validated in the EU. Consequently, the incisions prescribed by the current law need to remain as

an "interim" measure until validation of *T. saginata* cysticercosis diagnostic tests is completed. Among these, those based on *T. saginata* antigen detection in blood samples appear particularly promising as an alternative to muscle incisions.

The EC Regulation N.854/2004 of the European Parliament and of the Council of 29th April 2004 that lays down specific rules for the organization of official controls of products of animal origin destined for human consumption, represents an example of simplification and partial redrafting of the existing laws on the basis of the opinions expressed by the EFSA.

REFERENCES

Berends B.R., Snijders J.M.A., Van Logtestijn J.G. (1993): *Vet. Rec.* 133: 411; Blackmore, D.K. (1983). *Nord vet. Med.* 35(4): 184; Harbers A.H.M. (1991). Thesis Utrecht University, 136 (quoted by Snijders and Van Knapen, 1993); Hathaway S.C., McKenzie A.I., Royal W.A. (1987). *Vet. Rec.* 120: 78.; Hathaway S.C., McKenzie A.I. (1989). *Vet. Rec.* 124(8): 189

* The paper was presented on the scientific meeting *Hygiena alimentorum XXVI*, May 25 -27 2005, Štrbske Pleso - Vysoké Tatry, Slovakia ■

LEGISLATION RELATED TO GAME AND GAME MEAT IN THE SLOVAK REPUBLIC

Nagy¹, J., P. Lazar¹, P. Popelka¹, J. Cehlár¹, J. Čurlík¹

SUMMARY

Basic legislative frame of breeding of game as farm animals is included in the Veterinary care law No. 488/2002 Z.z. with amendments, Food act No. 152/1995 Z.z. with amendments. Veterinary care law (488/2002 Z.z.) establishes veterinary requirements for live animals and also for products of animal origin, including animal products in relation to the public health protection. Government regulations were added to the Veterinary care law in the process of implementation of EU Directives into national

legislation. Food act 152/1995 Z.z. establishes conditions of production of food and other animal products, their handling and placing on the market to support and protect consumers and their health, and the roles and organisation of food supervision and keeping of rules.

Requirements for health safety, hygiene, composition and quality of food, ingredients, technological processes used in food production, packaging, marking, storage, transportation, handling and distribution, and also rules for sampling and sample analysis procedures are estab-

¹ The Department of Food Hygiene and Technology, The University of Veterinary Medicine, Komenského 73, 041 81 Košice, The Slovak Republic