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RABBIT SLAUGHTER HYGIENE: EVALUATION OF PROCESS HYGIENE CRITERIA FOR THE SUPPOSED FOOD CATEGORY CARCASSES OF RABBIT

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Rabbit, being part of the category of lagomorphs, is defined by Regulation 853/2004 as "meat from rabbits and hares, as well as meat from rodents" and included in Chapter IV (Slaughter hygiene) in which the inspection of rabbit meat is regulated, in relation to the hygienic methods of slaughter and ante and postmortem requirements [1]. However, this commodity is not considered in Regulation 2073/2005 as process hygiene criteria related to meat and products thereof [2]. This study presents data, in relation to carcasses of rabbit, on aerobic plate count, *Enterobacteriacae*, *Pseudomonas* spp. counts and for the presence of *Listeria monocytogenes*, *Salmonella* spp. and *Campylobacter* spp.. A total of 89 samples were collected by Veterinary Authority in an industrial slaughterhouse located in Forlì during 15 different days of slaughtering. For each day of sampling, 5 carcasses (from the same slaughtered batch) and one sample of washing liquid were collected before chilling and after skinning, respectively. Results showed a level of contamination for aerobic colony count and *Enterobacteriacae* respectively in the range from 2.00 to 5.28 (mean 3.30, SD 0.85) and from 0 to 3.85 (mean 1.50, SD 0.98) Log CFU/cm2, with statistically significant differences between the different days of slaughtering. *Pseudomonas* spp. were isolated in 27.40% of carcasses with a contamination level ranging between 0.12 and 2.67 Log CFU/cm2. No pathogenic bacteria were detected in all the examined carcasses and washing liquid samples. Few data were available in literature on microbiological quality and safety of rabbit carcasses and meat and in comparison to those a lower level of contamination was observed in our study. Even if comparisons with hygiene criteria established for other mammalian species could be not considered appropriate, a total of 6.85%, 20.55% and 15.07% of the carcasses with contamination levels >4.9 Log CFU/cm2 for aerobic colony and >2.4 and 2.9 Log CFU/cm2 for *Enterobacteriacae* were identified, respectively, considering a level of contamination reduced of 1/5 as proposed for non-destructive sampling by Conferenza Stato Regioni 41/2016 [3]. Given our results, the affinity with poultry slaughtering could not be supported, at least for the process hygiene criteria for *Campylobacter* spp.. Further analysis in several industrial slaughter plants are necessary to formulate process hygiene criteria potentially applicable to rabbit slaughtering.

[1] REGULATION (EC) No 853/2004. *Official Journal of the European Union* L 139/55.
[2] REGULATION (EC) No 2073/2005. *Official Journal of the European Union* L 338/1.
[3] 41/CSR del 3 marzo 2016: Linee guida relative all'applicazione del Regolamento (CE) n. 2073/2005 e successive modifiche ed integrazioni sui criteri microbiologici applicabili agli alimenti. *Conferenza Permanente per i rapporti tra lo Stato, le Regioni e le Province Autonome di Trento e Bolzano*

IMPACT OF CURING ON MICROBIAL PARAMETERS AND *LISTERIA MONOCYTOGENES* GROWTH IN FISH FILLETS

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Fish curing allows to add value to the product. The process entails a loss of weight due to the evaporation of the water and determines a more tender texture and a stronger flavour to the product. Fish fillets, after curing, are directly exposed to air into the cabinets for up to 10 days where specific combinations of temperature, air speed and relative humidity are applied during time depending on the desired final product, which is in intended as ready to eat (RTE).
During the production of fish fillets, we enumerated Total Bacteria Count (TBC) and *Enterobacteriaceae* as well as performed contamination with *Listeria monocytogenes* to estimate its growth potential.
The analyses were performed on three different fish species: salmon (*Salmo salar*), tuna (*Thunnus thynnus*) and swordfish (Xiphias gladius) during the processing period. TBC counts ranged from 3.55 to 2.74 log CFU/g in salmon, from di 4.22 log CFU/g to 4.94 log CFU/g in tuna and 5.69 to 5.93 log CFU/g in sword fish at the beginning and at the end of the cycle, respectively. On the contrary, *Enterobacteriaceae* were not detected in any of the sample neither at the beginning nor at the end of the experimental trial. *L. monocytogenes* counts remained stable throughout the production cycle with a slight reduction towards the final stages. Our results underline how *L. monocytogenes* eventually present on raw material does not grow during processing, but we didn't test the behavior of the pathogen along the product shelf life. In addition, even though TBC counts reached almost 6 log CFU/g in sword fish, neither were the *Enterobacteriaceae* ever detected, nor was evident spoilage of fillets.

[1] "Seafood Processing: Technology, Quality and Safety; Boziaris, I.S., Ed.; 1st ed.; Wiley, 2014; ISBN 978-1-118-34621-1"