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Analiza występowania bakterii z rodzaju *Campylobacter* na różnych etapach produkcji mięsa drobiowego – aspekt ochrony zdrowia publicznego

Analysis of the occurrence of bacteria of the genus *Campylobacter* at different stages of poultry meat production – a public health protection issue

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Abstract

Analysis of the occurrence of bacteria of the genus *Campylobacter* at different stages of poultry meat production - a public health protection issue

Raw broiler meat is the most common source of human infection with *Campylobacter* spp. (Campylobacteriosis). The present study examines the occurrence of *Campylobacter* spp. in chicken broilers during primary production (i.e. the farm), in the cutting plant and portioning of poultry meat as a public health risks. It evaluates the importance of ensuring biosecurity in the poultry house by maintaining microbiological purity before the rearing chicken broilers and presence of *Campylobacter* spp. in chicks immediately after arrival at the farm. It also determines the impact of partial depopulation of broiler flocks on day 33-35 of rearing on the risk of introducing *Campylobacter* spp. into the flock, and the degree of contamination with *Campylobacter* spp. in raw meat products (poultry meat) with and without skin. Nine farms (F1-F9) were tested based on survey (55 questions) relating to compliance with hygiene and breeding procedures, and microbiological and molecular (Real-time PCR) analysis. It was found that compliance with procedures limiting the exposure of chicken broilers and colonization of the gastrointestinal tract by *Campylobacter* spp. reduces contamination of raw meat products, thus reducing the risk to public health. Also the use of an inadequate „empty period" before the introduction of a new flock prevents proper cleaning, disinfection and drying of the poultry house before the start of rearing; extending the empty period from 7 to 9-14 days should be considered as part of improved biosecurity measures specific to *Campylobacter* spp. To avoid situations where a farm has both empty and unfinished poultry houses, a longer empty period should be set for the whole farm and not only specific poultry houses. Day-old chicks should be tested for *Campylobacter* spp. before they are placed in the poultry house. It is an important element of the "*Campylobacter*-free" policy. As partial depopulation of broiler chicken flocks on days 33-35 of rearing is positively correlated with the risk of introducing *Campylobacter* spp. to the flock, the all-in/all-out principle should be applied. The consequence of lowering the slaughter age of broilers from 42 days of rearing to 35 or less, without prior depopulation, is a lower incidence and levels of *Campylobacter* spp. in the intestines, which reduces the risk of carcass contamination at the slaughterhouse and cutting plant stages. Skinned raw meat products from broiler chickens are potentially a more significant source of *Campylobacter* spp. than skinless products.

Key words: biosecurity, chicken broilers, *Campylobacter* spp., skinned and skinless raw meat products, public health protection