

MICROBIOLOGICAL QUALITY OF FROZEN CHICKEN FILLETS IMPORTED IN MACEDONIA DURING COLD AND WARM SEASONS

Andrea Boshkoska^{1*}, Natalija Atanasova-Pancevska², Dzoko Kungulovski³

¹DPTU FoodLab DOO, Boris Trajkovski 130, 1000 Skopje, Macedonia

²Institute of Biology, Faculty of Natural Sciences and Mathematics,
Ss. Cyril and Methodius University Arhimedova 5, 1000 Skopje, Macedonia

*e-mail: andreaaleksoska67@gmail.com

Abstract

There is an increase in the consumption of poultry meat, which leads to a high influx of imported frozen chicken fillets into the Macedonian markets and there is little information on their microbial qualities. Our study examined the microbiology quality of imported frozen chicken fillets from Brazil in Macedonia in warm and cold seasons.

A total of 47 samples (frozen chicken half breast, skinless boneless without inner fillet) were analyzed in an accredited laboratory, from which 25 samples were in warm and 22 samples in the cold season. The total bacteria count (TBC), *Staphylococcus aureus* count, and the presence of *Salmonella* spp. and *Campylobacter* spp. were determined by plate count technique using the appropriate media.

TBC mean counts that were found in the warm season (6.17 log CFU/g), and in the cold season (5.95 log CFU/g) meet the international criteria. There wasn't a significant difference between the level of TBC counts in the warm and cold seasons. *Staphylococcus aureus* was found only in 6 samples, and all of them meet the international criteria. *Salmonella* spp. and *Campylobacter* spp. were not detected. But in our study as part of the Enterobacteriaceae family on XLD agar, *Proteus* spp. was isolated. *Proteus* spp. was found in 19 of 25 samples analyzed during the warm season, and in the cold season, it was found in 5 of 22 samples analyzed. There was a significant difference between the number of positive samples for *Proteus* spp. in warm and cold seasons. We suspect that this difference originates from temperature abuses that occur during transport, which are greater in the summer period.

The frozen chicken fillets in Macedonia are contaminated with *Proteus* spp. This should not be ignored because some *Proteus* strains are opportunistic pathogens and can endanger people's health.

Key words: Frozen chicken fillets, Total bacterial count, *Staphylococcus aureus*, *Salmonella* spp., *Campylobacter* spp., *Proteus* spp.