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MICROBIAL DIVERSITY EVALUATED BY 16S SEQUENCING ON PRE-COOLING TANK SURFACES AFTER PRE-OPERATIONAL CLEANING IN A CHICKEN SLAUGHTER.

Márcia Cristina Bedutti[1], Luiz Gustavo Bach[1], Gabriela Zarpelon Anhalt Braga[1], Layza Mylena Pardinho Dias[2], Camila Lampugnani[1], Jhennifer Arruda Schmiedt[1], Pamela Suelen Piacentini Picolli[1], Leonardo Ereno Tadielo[3], Emanoelli Aparecida Rodrigues dos Santos[3], Fábio Sossai Possebon[3], Vinicius Cunha Barcellos[1], Luciano dos Santos Bersot[1]

[1.] Universidade Federal do Paraná, Programa de Pós-Graduação em Ciência Animal, Palotina / Paraná, Brasil
[2.] Universidade Federal do Paraná, Programa de Residência em Medicina Veterinária, Palotina, Paraná, Brasil
[3.] Universidade Estadual Paulista, Faculdade de Medicina Veterinária e Zootecnia, Botucatu, São Paulo, Brasil

According to the Brazilian Animal Protein Association (ABPA), Brazil has been keeping ahead of the most demanding export markets through the qualification and technification of the sector, reinforcing the use of risk management tools and actions to ensure the safety of its products. The environment in broiler processing plants is a potential source of contamination by several microorganisms, becoming even more complex throughout its stages. Pre-operational cleaning is the main resource for keeping slaughterhouses in acceptable sanitary conditions, adopting a process of removing residues and sanitization to eliminate microorganisms. Published work shows that the pre-cooling system in stainless steel tanks has a direct influence on the contamination of broiler carcasses. The aim of this study was to characterize the microbial diversity on stainless steel surfaces in a broiler slaughter and processing plant, immediately after SSOP. Over a period of 10 weeks, samples were collected from the contact surfaces of the pre-cooling tank in the chiller using swabs at three different points, totaling an area of 400cm² per sampling point. After sampling, the swabs were stored in Falcon tubes containing 0.1% peptone saline and polysorbate 80. The tubes containing the swabs were orbitally shaken in a vortex and 0.1µl was cultured using the spread plate technique on Petri dishes containing PCA agar, incubated at 36±1°C/24±2h. After surface growth, 3mL of sterile saline solution was added to the cultures, which were removed from the agar by scraping and homogenizing using a sterile pipette tip. After this stage, the liquid was transferred to 5mL Eppendorf tubes and frozen at -20°C. Of the 30 samples collected, only 7 showed plaque growth and sufficient DNA for evaluation using the 16S rRNA gene sequencing technique. The main families identified were: Staphylococcaceae (20.2%), Microbacteriaceae (19.7%), Moraxellaceae (13.5%), Sphingomonadaceae (10.4%), Pseudomonadaceae (6.0%), Xanthomonadaceae (5.0%), Aeromonadaceae (3.5%), Yersiniaceae (2, 9%) and Weeksellaceae (2.7%) and the main genera were *Staphylococcus* (32.9%), *Enhydrobacter* (19.4%), *Pseudomonas* (9.7%), *Sphingomonas* (7.3%), *Aeromonas* (5.8%), *Serratia* (4.5%), *Chryseobacterium* (4.3%). The study provided data indicating a wide range of viable microorganisms obtained from sanitized surfaces. These data indicate that microorganisms are on the surface of the equipment in the form of microbial biofilms and that there are problems in the

efficiency of pre-operational cleaning methods.

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