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POSTER 157

The role of *postmortem* microbiome knowledge in veterinary medicine

Pauline Ferrari¹, Lorine Dallet¹, Andréa Paulo¹, Mathilde Baudouin¹, Angeline Trinel¹, Margaux Bertrand¹, Amélie Vandebilcke¹, Chiara Lazare¹, Carla Miranda^{1,2*}

¹TOXRUN – Toxicology Research Unit, University Institute of Health Sciences, CESPU, CRL, 4585-116 Gandra, Portugal.

²Associated Laboratory for Green Chemistry (LAQV-REQUIMTE), University NOVA of Lisboa, Lisboa, Caparica, Portugal.

*✉ carla.miranda@iucs.cespu.pt

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Resumo

Introduction: The field of veterinary forensic medicine has been increased in past years, permitting the identification of the cause or pathogen responsible for mortality in a specific animal group, in crimes involving pets or protected species [1,2]. Moreover, forensic microbiology involves the microbiological analysis techniques to identify the circumstances of a death and the post-mortem examination of microbial communities of a carcass has been useful to estimate of the time of death in animals. In the putrefaction process, microorganisms change into each stage of decomposition, through the colonization in a variety of tissues [2,3]. **Objectives:** In this study, the aim was to highlight the importance of the microbiology within veterinary forensic medicine. **Methods:** The search of relevant articles was performed on Pubmed and Google Scholar databases between February and March 2022, using the following keywords “microbial forensics”, “animals” and “veterinary forensics”. **Results:** The study of post-mortem microbial communities in animals, demonstrated that in case of a bite, microorganisms that can be found in internal tissues allow the identification of

the aggressor in the first 24h. Disseminated lesions caused by *Neisseria animaloris* (commensal bacteria of oral cavity) were identified in porpoises due to traumatic injury from grey seals [4]. To estimate the post-mortem interval, analyzed the microbiome of rabbit carcasses comprised of 4 Phyla: Proteobacteria, Firmicutes, Bacteroidetes, and Actinobacteria. In 3 days, the microbial activity of oral cavity showed an increase (66%) with the predominance of Proteobacteria and the skin was 20% higher for fur-free animals, showing an increase of Firmicutes in animals without fur and Bacteroidetes in animals with fur [5]. Additionally, *Bacillus cereus* permitted the estimation of the death time using the gastrocnemius muscle of dogs. After seven days of the death, the *Bacillus cereus* group was the first bacterial colonies, demonstrating growth persisted until the 21st day [3]. **Conclusions:** This review demonstrated that the microbiological flora of carcasses is the key element of forensic microbiology and provides a useful tool in veterinary medicine, for determining the cause of crime and the time of death. This last is a crucial factor for investigations carried out by law process.

Keywords: microbial forensics; animals; veterinary forensics

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