

TITLE: MICROBIOLOGICAL ANALYSIS OF MEAT MEAL USED IN POULTRY INDUSTRY

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ABSTRACT:

Brazil is the major chicken meat exporter and the second largest chicken meat producer worldwide, but sanitary quality has been one of the main obstacles established by the consumer market. Residues generated during poultry production give rise to by-products that can be used in animal feed, which results in economic and viable feed. As it is an integral part of the food chain, a method to control pathogen carriage is to ensure the hygienic-sanitary quality of the feed. The intestinal tract has a defense system against unwanted bacteria, that involves the immune system and antagonistic bacteria. However, if there is an imbalance of the system, the poultry become susceptible to pathogens. The main bacteria responsible for significant losses in the poultry production are *Escherichia coli*, *Salmonella* spp. and *Clostridium* sp. When in imbalance, these bacteria affect the poultry's gastrointestinal tract directly, which results in a lower absorption of nutrients and, therefore, lower weight gain and worse feed conversion. Additionally, they pose a serious public health risk, since potentially pathogenic strains can be transmitted to humans through consumption of contaminated meat and / or eggs. The objective of this study was to evaluate the contamination of meat meal by *Escherichia coli*, *Salmonella* spp. and *Clostridium* sp. A total of 92 samples of meat meal commercialized in the states of Pernambuco, Paraíba and Bahia were analyzed. All analyzes were carried out in accordance with the provisions of Normative Instruction n. 62/2003 of the Ministry of Agriculture, Livestock and Food Supply (MAPA), which regulates the official analytical methods for microbiological analysis in the control of animal products and water. The presence of *Clostridium* sp. was detected in 64 samples (69.5%), where 13 (18,7%) were observed above 500 CFU/g; 17 samples (18.4%) were positive for *Escherichia coli* and six (6.5%) samples were positive for *Salmonella* spp. Due to the economic losses generated to the poultry sector, the detection of such bacteria in the meat meal analyzed shows the need to adopt preventive methods and continuous inspection for a strict control of the microbiological quality. In addition, the possibility of contamination of eggs and carcasses, the occurrence of bacteria with pathogenic potential poses a serious public health risk.

Keywords: animal health, *Clostridium*, *Escherichia coli*, public health, *Salmonella*

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