BACTERIAL TRANSLOCATION DURING DELAYED EVISCERATION

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I. INTRODUCTION

During cattle slaughter, carcass evisceration may be postponed. There is a belief that these delays can lead to contamination of carcasses by bacterial invasion, mainly from the contents of the digestive tract (1). A study was carried out to assess the consequences of delayed evisceration (DE) of cattle. The effect of DE, two hours after stunning and bleeding, was evaluated regarding possible bacteriological, physicochemical, and sensory changes capable of impacting the quality of the animals' carcasses and edible offal.

II. MATERIALS AND METHODS

The experiment was carried out with feedlot cattle, slaughtered under federal inspection (SIF) and laboratory analyzes were performed in a laboratory accredited by the Ministry of Agriculture - Brazil. The animals in the experimental group were stunned and bled, waiting hung for two hours before skinning and evisceration began. Those in the control group were processed according to the plant's routine. Hot carcasses and half-carcasses after cooling, perirenal and cavitary fat as well as viscera, were examined assessing general appearance, color, odor, consistency, and shine. pH and temperature of the carcasses, as well as the plant environmental temperature were also measured. Samples for microbiology were obtained from four different points on the external surface and two points on the internal surface (thorax and abdomen) of the half carcasses by smearing sterilized sponges and using a 100 cm² template. Using sterilized instruments, a sample of approximately 250 g of heart and liver was collected from each animal from the experiment. By rubbing sterilized sponges and using a 100 cm² template, a sample was collected from the external surface of the rumen of each animal. All samples were subjected to the following microbiological counts: aerobic or facultative mesophilic microorganisms; *Enterobacteriaceae*, lactic acid bacteria and mesophilic anaerobic microorganisms.

III. RESULTS AND DISCUSSION

According to the sensory aspects evaluated: general aspect, brightness, color and odor, no differences were observed among the carcasses from the control and the experimental groups, all of which remained within similar standards and considered normal. Likewise, no difference was evident among the viscera of animals from both groups, regarding the consistency and degree of friability of the viscera. After cooling for 24 h, there was no statistically significant difference in the pH of the two groups. According to the microbiological criteria adopted, all bacterial count results remained within the limits considered acceptable (Table 1).

Official veterinary inspection services in Brazil consider DE after 45 minutes of the animal's death. The applied criteria are conditional use of the carcass and the condemnation of the viscera after 60 minutes, and the total condemnation of the viscera and carcass after 90 minutes. There are laws, such as São Paulo's State, which report a time of 40 minutes to DE (2).

	External		Internal surface				Whole carcass results	
Microorganisms	surface							
_			Torax		Abdomen			
	CG	EG	CG	EG	EG	CG	EG	CG
Mesophilic	235a	945b	15a	55a	4a	1a	211a	517b
Enterobacteriaceae	1a	2a	1a	1a	1a	1a	1a	1a
Lactic Acid Bacteria	3.5a	4.5 a	1a	1a	1a	1a	1a	1a
Anaerobic mesophilic	12a	12a	1a	4a	1a	1a	1a	2a

Table 1 – Medians (CFU/cm ²), for sampled areas. CG:	6: Control group; EG: Experimental	group
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Numbers followed by the same letter at the same line means no statistical difference.

Our results showed no sensory and physicochemical changes or abnormalities that would justify condemning the carcasses and viscera from the experimental group (two-hour DE) not violating the requirements from RIISPOA Arts. 129, 142 and 143 regarding DE episodes (3). Bacteriological evaluation did not reveal values above the microbiological limits established in any of the analytical results (Table 1). The median counts of mesophilic microorganisms obtained in samples from the peritoneal surface were extremely low, with values close to 10⁰. Therefore, this does not demonstrate the occurrence of bacterial translocation after two hours. This period also did not impact the microbiological quality of the edible viscera.

IV. CONCLUSION

It can be concluded that DE, with up to two hours for starting skinning and evisceration, did not negatively impact the acceptable sensorial, physicochemical, and microbiological quality of fresh meat and edible offal from slaughtered cattle.

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