

## **RELATIONSHIPS AMONG CHEMICAL COMPOSITIONS OF 9-10-11<sup>th</sup> RIBS, CARCASS AND EMPTY BODY OF YOUNG NELLORE BULLS**

### *RELAÇÕES ENTRE AS COMPOSIÇÕES QUÍMICAS DAS 9-10-11<sup>a</sup> COSTELAS COM A CARÇAÇA E O CORPO VAZIO DE TOURINHOS NELORE*

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The direct determination of carcass and empty body composition as experimental routine, despite being the most accurate method, is time consuming, laborious and expensive. Therefore, indirect methods have been developed to estimate on quick, simple, economical and reliable ways for the compositions of carcass and empty body of beef cattle. This study aimed to obtain the correlations among the compositions of 9-10-11<sup>th</sup> ribs, carcass and empty body for protein, fat, ashes and water contents, expressed in percentage and kilograms, in young Nelore bulls. Sixty-seven non-castrated Nelore bulls were randomly selected for confining period in two consecutive years (2008 and 2009) and were confined in individual pens for approximately 100 days, until they reached a subcutaneous fat thickness of 4 mm over the Longissimus muscle. They were slaughtered at an average age of 540 days and body weight of 398 kg. Chemical analysis of the 9-10-11<sup>th</sup> ribs, carcass and empty body were carried for protein, fat, ashes and water. The 9-10-11<sup>th</sup> ribs cut was obtained according to Hankins and Howe (1946). Carcass composition was obtained after grinding, homogenizing, sampling, analyzing and combining edible portions and bones. Empty body composition was obtained after grinding, homogenizing, sampling, analyzing, and combining blood, hide, head + feet, viscera, and carcass. The correlation coefficients were calculated between ribs and carcass, and between ribs and empty body for the contents expressed in percentage and kilograms. The correlations obtained between composition of 9-10-11<sup>th</sup> ribs and carcass were 0.68; 0.62; 0.05; and 0.79, respectively, for percentages of protein, fat, ashes and water. For the same tissues, expressed in kilograms, the correlations obtained were 0.66; 0.73; 0.49; and 0.79, respectively, for contents of protein, fat, ashes and water. For the relationships between composition of the 9-10-11<sup>th</sup> ribs and empty body, the correlation coefficients found were 0.77; 0.64; 0.13; and 0.64, respectively, for percentages of protein, fat, ashes and water. In addition, the correlations obtained for the same tissues, expressed in kilograms, were 0.59, 0.71, 0.48 and 0.77, respectively, for contents of protein, fat, ashes and water. The correlation coefficients found for protein, fat and water between ribs and carcass and between ribs and empty body were positive and high, indicating a good association among these traits. For ashes, the correlation coefficients detected were medium to low, being better when the contents were expressed in kilograms. Highly significant correlation coefficients, above 0.70, were detected between ribs and carcass fat and water, and ribs and empty body fat and water, expressed in kilograms. The use of the 9-10-11<sup>th</sup> ribs composition for estimating the carcass and empty body compositions is effective, allowing an accurate estimation mainly for fat and water contents.

Keywords: beef cattle, body composition, indirect determination, feedlot.