

Determination and evaluation of bruises on bovine carcasses in a slaughterhouse in the Ñuble region, Chile

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Introduction: The use of electric prods, improper transport and handling, deprivation of food and water, and inability to rest. All these factors can influence the appearance of contusions. According to NCh. 1306 (2002), contusion is defined as the crushing of tissues accompanied by vascular ruptures without cutaneous discontinuity, and it is classified into three grades that are differentiated according to the depth of tissue damage.

Materials and method: The study was carried out in a slaughtering plant located in the Ñuble Region, Chile, and data collection took place between November and December 2018. WinEpi® software was used to determine the sample size. Cattle typing begins with a visual inspection of the bovine carcass, in which the contusion was identified, and the degree of contusion was determined in the affected area (Romero et al., 2011; INN, 2002). In addition, the dental chronometry and the sex of the animal were determined. The sampling procedure was carried out after the animal had been slaughtered. The nomenclature for eruption and levelling of teeth in cattle used was according to the Chilean standard (modified Gallo et al., 1999), where: DL eruption of milk teeth; DL+ animal with levelled milk teeth; 2DP eruption of 2 permanent teeth (clamps); 4DP eruption of 4 permanent teeth (clamps and internal medium); 6DP eruption of 6 permanent teeth (clamps and medium); 8DP eruption of 8 permanent teeth; 8DP+ eruption of 8 permanent teeth and levelled second medium.

Results and discussion: According to the data obtained, 193 cattle were analysed in the study, and 74.61% of the carcasses corresponded to castrated males, 1.56% to entire males and 23.83% to females.

Regarding the degree of bruising, 41 (21.24%) carcasses showed no obvious signs of bruising on inspection, of which nine (21.9%) were females and 32 (78.0%) were males. The highest number of contusions belong to grade 1 with 107 (55.44%) carcasses, where 2DP males stand out with 42 (39.25%) carcasses of the total, in grade 2 contusions a total of 42 (21.76%) samples were obtained where again most of the affected carcasses correspond to males and the highest number to the 2DP group, However, in the grade 3 contusions, despite being only three (1.55%) samples, two (66.67%) of these are from females, one with 2 PD and another with 8 PD+, inferring that the contusions in females may be more dispersed in age and not focused on a few close age categories. In similar studies, the occurrence of grade 1 contusions (Romero MH et al., 2012) is as high as 97.00%. On the other hand, there is a high presence of grade 2 bruises (21.76%) showing that the animals may have been exposed to high levels of stress, there may also have been poor handling of the animals, too long journeys without adequate conditions for transport such as availability of water and feed (Gallo, 2008).

The number of animals with some degree of bruising with respect to the category are as follows: grade 1 contusions in category V are 86 (44.56%), grade 2 contusions in category V are 35 (18.13%) and two (1.04%) grade 3 carcasses are of category V, leaving us a total of 162 (83.84%) animals catalogued in category V of which there are 39 (20.21%) without contusions and 123 (63), The other categories are of lesser importance, the U category is the one that presents a remarkable number with 17 (8.81%) bovine carcasses with nine (4.66%) of them being grade 1 contusions and six (3.11%) corresponding to grade 2 contusions.

Conclusion: Females, contusion grades 1 and 2, category V and distance travelled (greater than 60 km) have a higher probability of contusions in bovine carcasses.

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