

Survey of Carcass Quality and Yield Characteristics, and Producer and Packer Related Carcass Defects

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Abstract: West Texas A&M University completed a carcass survey of three major packing plants located in the Texas Panhandle. This survey was conducted to evaluate the characteristics of the fed cattle population in the Texas Panhandle and the surrounding area. Each plant in the study was visited quarterly (August, November, February, and May) for one year. During each visit data were obtained from the grade cooler, and the slaughter floor. Cooler data means were as follows: Mean USDA yield grade 2.64; Adjusted fat thickness 0.46in; Hot carcass weight 764 lb.; ribeye (*longissimus dorsi*) muscle area 13.60 in²; Kidney, Pelvic, and Heart fat 2.16%. USDA quality grade: High Select, (Slight⁹⁰). Other characteristics and anomalies were observed in the cooler 1.30% dark cutter rate. Ossification over the A maturity line 0.13%; Blood splash 0.29%. Slaughter floor Mean results: Liver score were recorded as 73.77% normal; flukes 7.52%; abscessed 9.68%; open abscessed 1.74%. Growth implant hormone data were observed as 84.64% correctly implanted; 4.38% of the implants were abscessed; 12.46 % were either missing or not implanted. Hot branded cattle represented 69.97% of the sample population, and 35.89% of the population were horned. Bruise data revealed 74.54% had no significant bruise; 25.46% had significant bruising requiring knife trimming; 33.79% had multiple bruises; 24.95% of the bruises were observed loin region. Lung data resulted in an observation of 73.21% normal; lungs with small amount of pneumonia lesions 23.92%; and lungs with large amount of pneumonia lesions 3.35%; Dentition score for the observed data set showed that 84.87% of the cattle being under 23 months of age. Tongue lesions were present in 3.63 % of the cattle observed.

Graphical Interpretation:

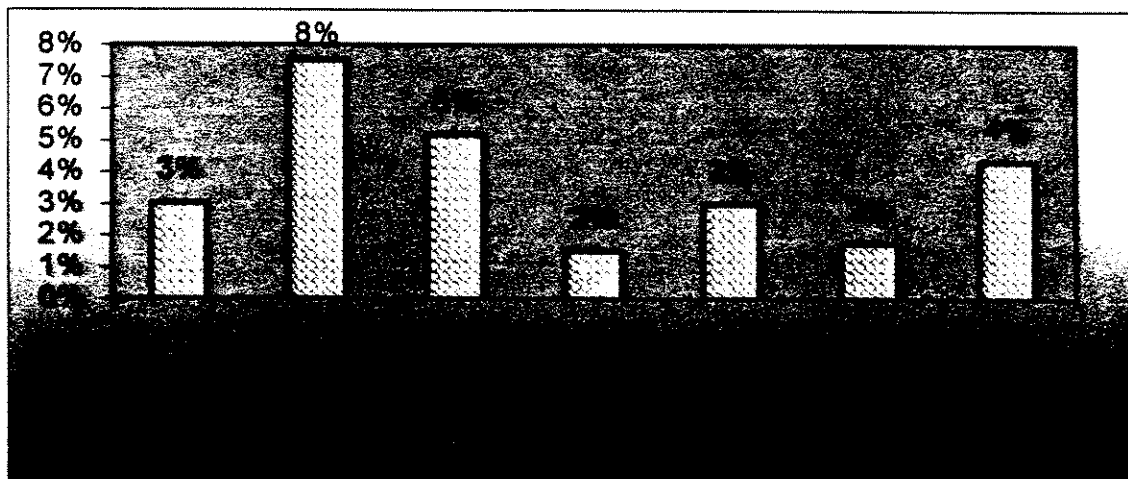


Figure 1. Frequency distribution of liver condemnation.

(n = 13860 hd)

Contamination of livers was assessed to any liver that was condemned by the USDA inspector for fecal contamination, or any other anomaly that is not listed above. Livers that were condemned for flukes had either visible live flukes or the damage in the liver caused by liver flukes. Liver abscesses were evaluated using the Elanco liver check system, where each abscess is scored on the size and number of abscesses present on the liver. Livers that are assigned the "A -" score were livers that displayed an abscess ranging from pea to marble size. The "A" liver score was used to describe any liver with abscesses from ¼ inches in diameter to ½ inches in diameter. Finally, abscesses labeled as "A +" are any abscess larger than ½ inches in diameter. Any abscess that had ruptured was labeled as "Open". Abscesses that showed adhesion of the liver to any other internal organs or to the body wall were labeled as "Adhesion".

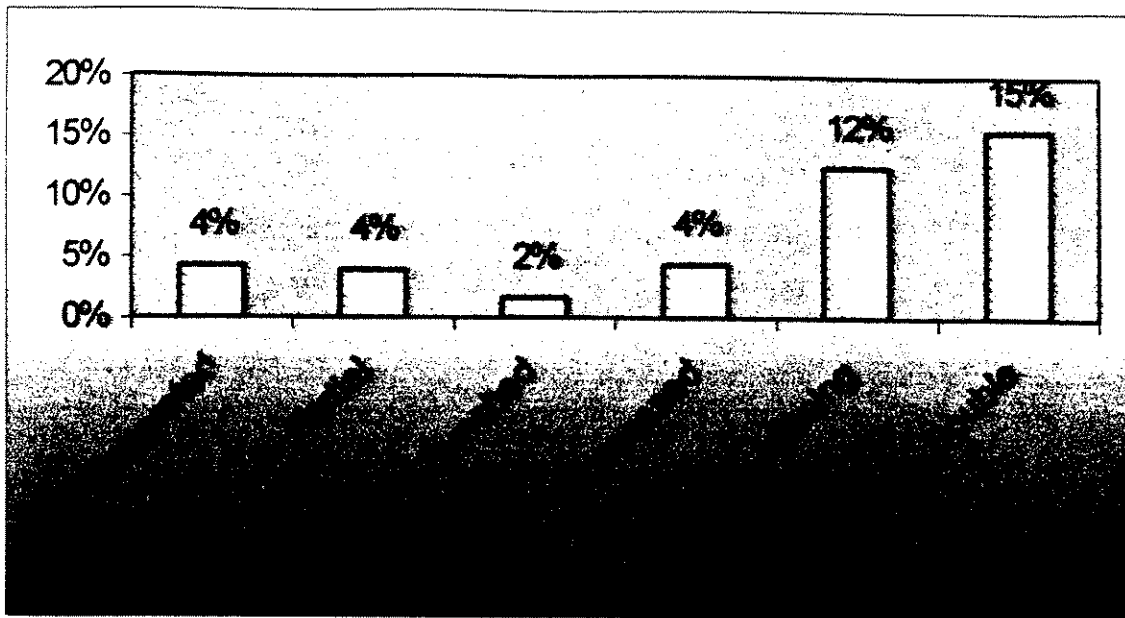


Figure 2. Palpation of hormone implants at the time of slaughter. (n = 10442 hd, with 14922 implants)

Hormone implants were palpated at the plant to assess the occurrence of defects. Separated implants were ones in which the individual pellets have separated from each other. Partial implants were implants where only part of the original implant was still present in the ear. Implants that were bunched together were labeled as bunched. Abscessed implants were ones in which an accumulation of fluid around the implant occurred. The fluid is most likely to be due to infection. Many animals in the audit were implanted with more than one implant. At any time when more than one implant was observed in the animal, it was logged as a double implant. Animals that were missing implants were labeled as missing. Missing implants could mean that the animal was not implanted, the implant had completely dissolved, or that the implant fell out.

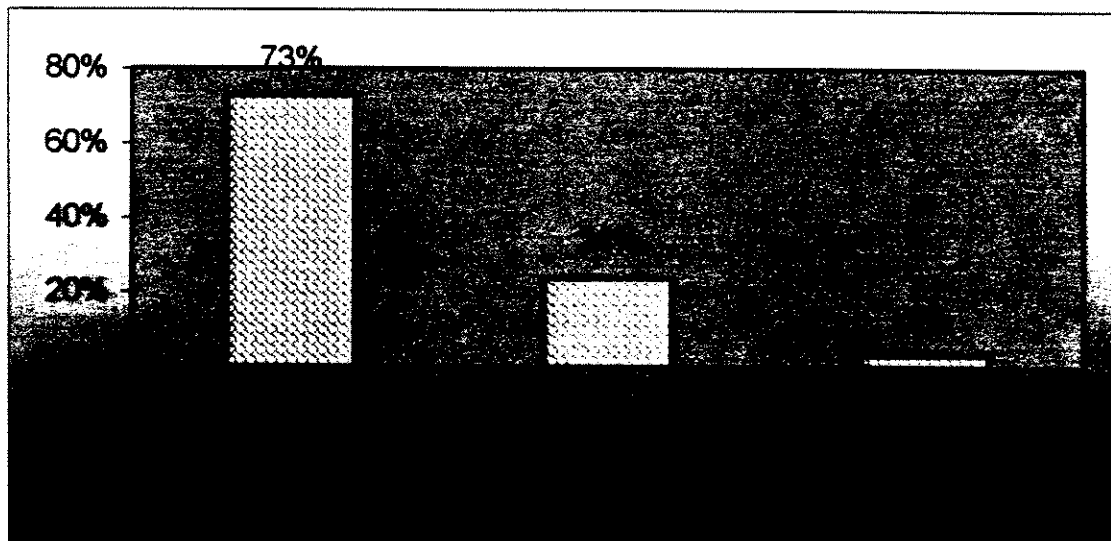


Figure 3. Observation of Lungs.

(n = 13801 hd.)

The condition of the lung was observed to assess the occurrence of pneumonia in the cattle population. Lungs that showed no signs of pneumonia received a score of zero (0). Lungs that showed some pneumonic lesions or atelectic lobes were assigned a score of one (1). Finally any lung that show extensive lesions or missing lobes was classified as a two (2).

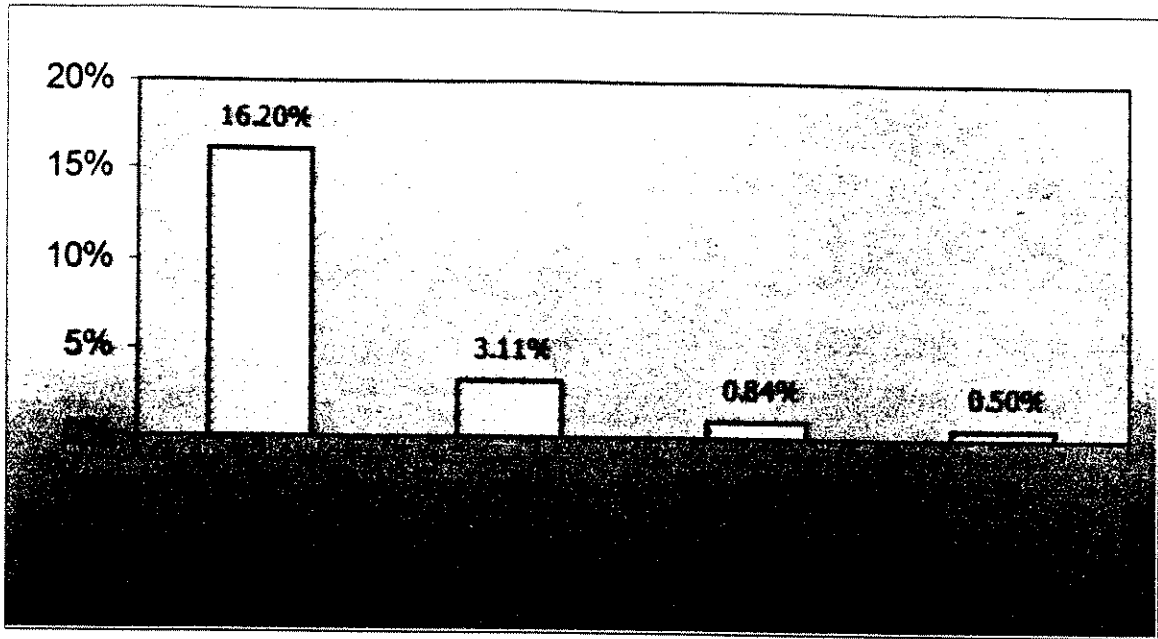


Figure 4. Dentition score distribution of animals showing one or more permanent incisors. (n = 13511 hd)

The dentition score of each individual animal was recorded. Determining the number of permanent incisors present assessed each score. Animals with a score of zero (0) are cattle under the 23 months of age. Cattle with a score of two (2) are cattle that are between 23 and 30 months old. Cattle that have a score of dentitions score of four (4) are cattle that are between 30 and 37 months of age. Cattle with a score of six (6) are between 37 to 45 months of age. Finally any animal with a score of eight (8) was determined to be older than 45 months of age.

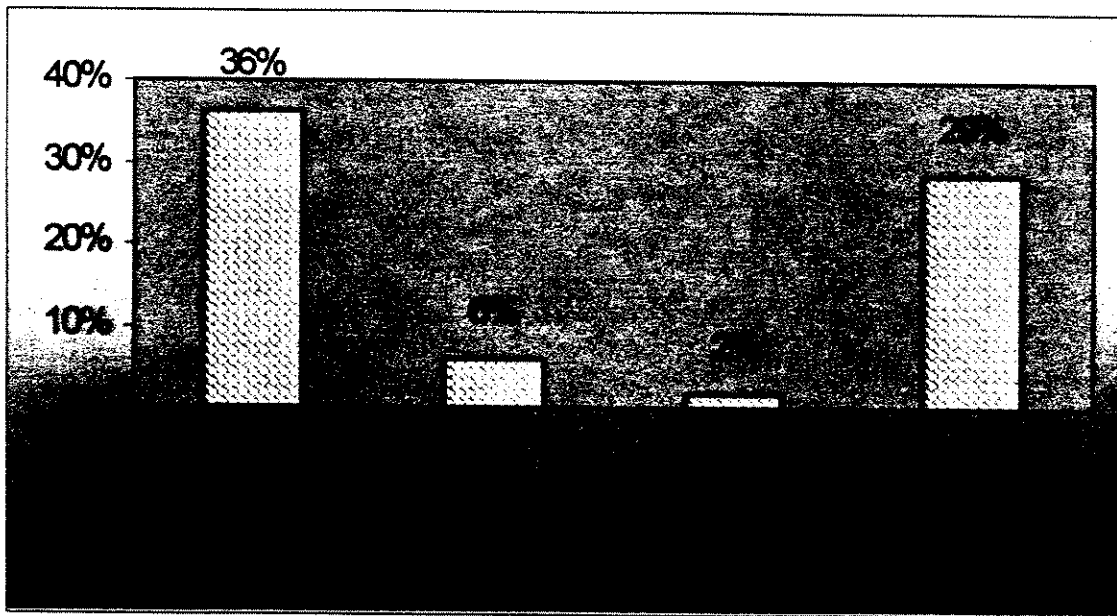


Figure 5. Severity of bruises observed on carcasses. (n = 12985 hd)

The severity of bruises was used to estimate the amount of trim required for each bruise that was observed. Bruises scored as a one (1) were classified as being less than 5 inches in diameter. A score of two (2) was described as being between 6 and 12 inches in diameter. Finally a bruise score of three (3) described as bruise larger than 12 inches in diameter. Carcasses that exhibited more than one bruise were recorded as having multiple bruises.

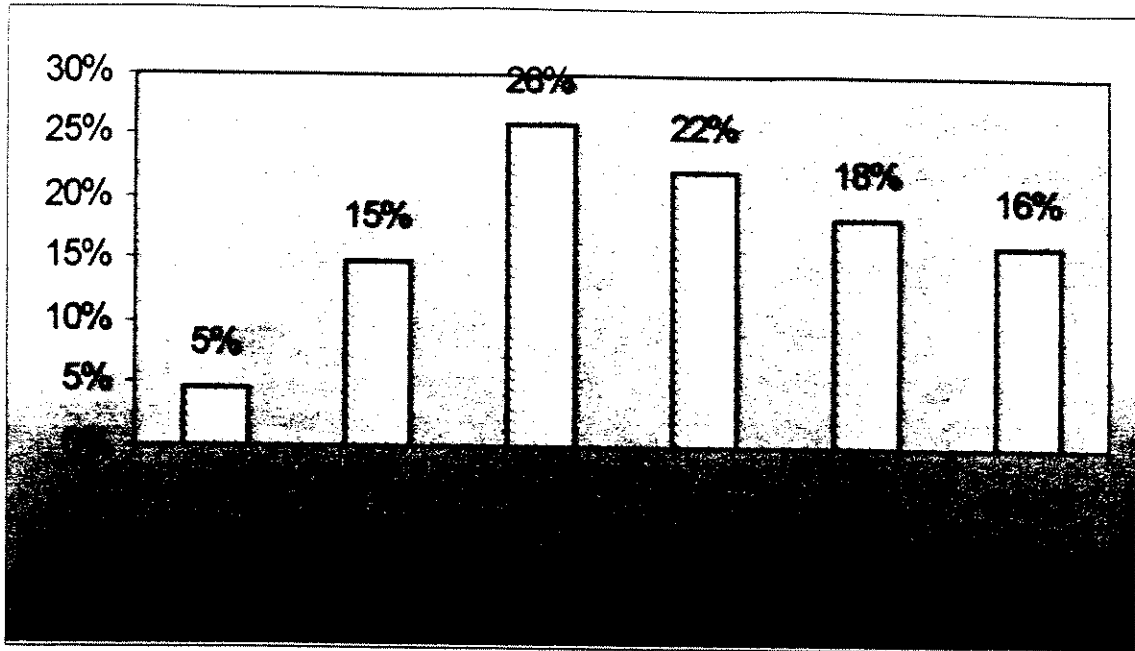


Figure 6. Bruise Location

(n = 9033 bruises observed)

The location of each bruise was recorded. The above regions represent where 99.80% of the bruising in the carcasses were observed. The brisket and shank area account for 0.20% of the bruises that were observed during the study.

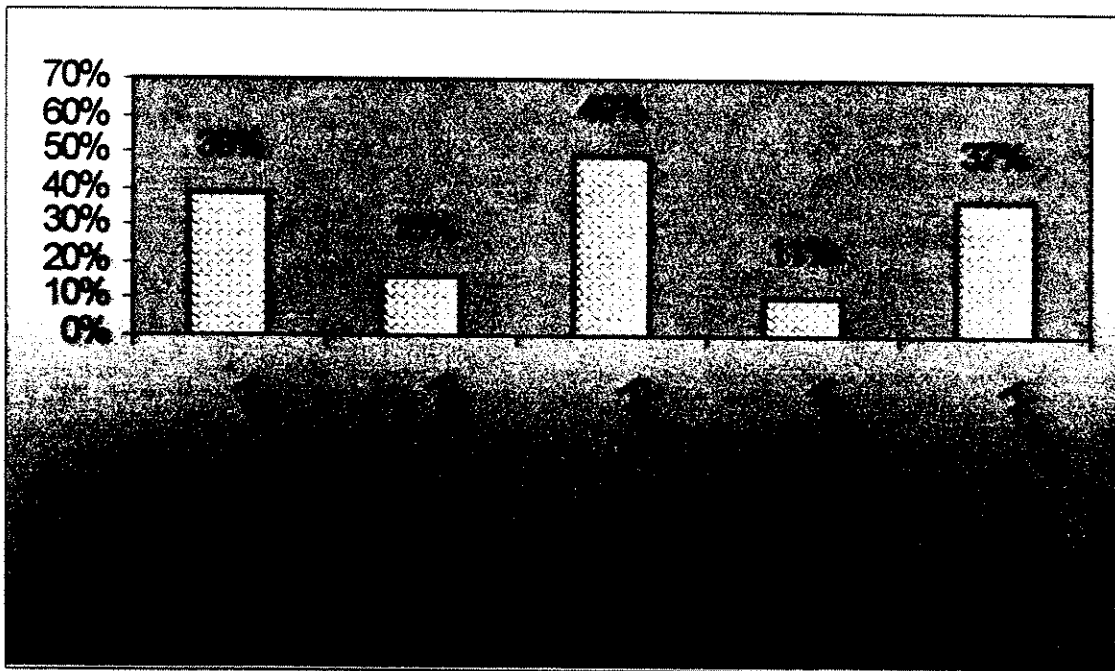


Figure 7. The incident of hot - iron branding and the presence of horned cattle.

(n = 13435 hd)

Any animal that showed presence of brands was noted, and the location of the brand or brands was recorded. Animals that exhibited more than one brand were classified as multiple.