Slaughter of pregnant cows in the municipal abbattoir of Pijijiapan, Chiapas, Mexico

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ABSTRACT

Objective: To quantify the percentage of breeding heifers slaughtered and the stage of gestation of the product in the municipal slaughterhouse of Pijijiapan, Chiapas.

Approximation: Many breeding heifers are sent to the slaughterhouse due to various factors, such as the few gestations diagnostic tests carried out in the field and erroneous diagnoses. Another cause is the dry season, in which the forage capacity is reduced, and the producer must dispose of animals in his productive unit, including breeding heifers, thus decreasing the cattle herd population. This situation can be considered an animal welfare problem.

Methodology: The total number of cattle slaughtered in four months was recorded, as well as the number of females, and it was recorded whether they were pregnant or not, and the gestation period of the calf.

Results: Cattle individuals (428) were slaughtered, of which 399 were females (93.22%) and 29 males (6.78%). Of the females, 211 (53%) were pregnant, 39.81% in the first third of gestation, 27.48% in the second and 32.22% in the third.

Limitations: It is necessary to increase the study period and not only in this municipality but also to implement similar research in other slaughterhouses in Chiapas to understand this problem better.

Keywords: breeding heifers, bovine slaughter, municipal slaughterhouses, cattle herd, animal welfare.

INTRODUCTION

Cows are sent to the slaughterhouse at the end of their production cycle. At the same time, female calves are admitted to the slaughterhouse after a fattening period or due to reproductive disorders (Zitterer and Paulsen, 2021). However, in some cases, breeding
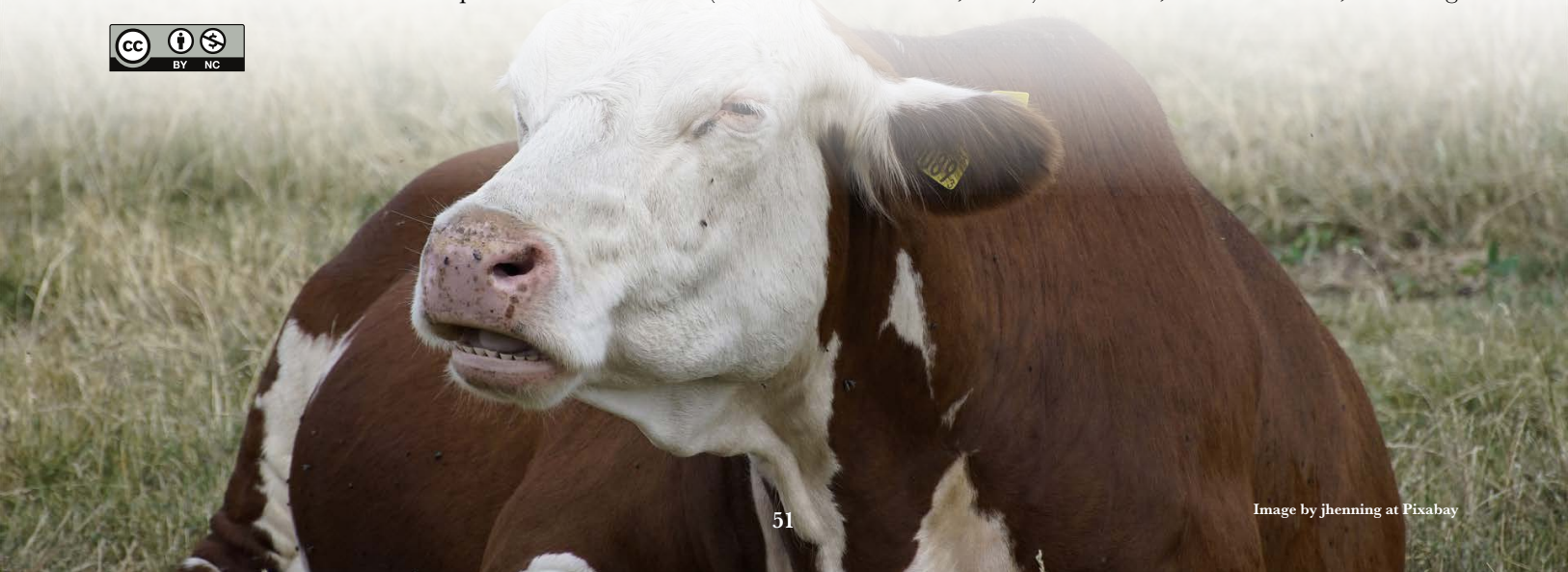
heifers are slaughtered (Saxmose *et al.*, 2019). Producers may need to be made aware that animals sent to the slaughterhouse are pregnant for different reasons, such as the lack of pregnancy tests, misdiagnosis, or little information on the part of farmers (Nielsen and Hawkes, 2019). The slaughter of animals in slaughterhouses has shown that not only conventional non-breeding cattle are slaughtered for meat but also pregnant and lactating productive females (Gregory and Grandín, 2007).

In Mexico, since gestation diagnosis is not common, many bovine breeding heifers are sent to the slaughterhouse in the early stages of gestation (Fernández-Figueroa *et al.*, 2015); this situation contributes to the reduction in the number of bovines. In addition, the marked dry season favors that a high number of animals per hectare is maintained in the rainy season. When the drought arrives, the forage capacity is reduced. Producers are then compelled to reduce the number of animals in their productive unit, including breeding heifers, which brings as a consequence that in the short term, the livestock herd must be repopulated to substitute those slaughtered bellies (FORBES, 2013; Moreno *et al.*, 2017).

In the case of the state of Chiapas, Orozco (1987) indicated that in the municipality of Tapachula, 53% of the slaughtered bovine females were pregnant. In the municipality of Tonalá, Pozos (1999) found out of 998 genital organs of bovine females in the slaughterhouse, 44% of the females were in a state of gestation. Due to this problem, it is necessary to generate information to contribute to the analysis of the impact of the slaughter of breeding heifers on bovine depopulation. On the other hand, the slaughter of breeding heifers has ethical implications from an animal welfare point of view, as well as about the quality of the meat, which would contain a higher content of steroid hormones (Zitterer and Paulsen, 2021).

MATERIAL AND METHODS

The study was carried out for four months (October-January) in the municipal slaughterhouse named "Sociedad Cooperativa de Bienes Tablajeros (SENASICA)" in the municipality of Pijijiapan, Chiapas, located in the Economic Region IX Istmo-Costa (Isthmus-Shore) (CEIGE, 2021), with a humid tropical climate with rains in summer (García, 2004).

The animals were slaughtered by disgorgement at the slaughterhouse, without previous stunning. The total number of slaughtered cattle and slaughtered females was counted daily. After slaughter, the reproductive organs of the females were separated from the carcass and deposited in nylon bags after identification. They were separated into empty and pregnant. The uterus was extended on a table. Later an incision was made in each uterine horn along its dorsal surface, from the uterus-tubal junction to the bifurcation of the uterus' body to expose the lumen. Similarly, the body of the uterus was sectioned following a straight line to the dorsal corner of the vulva to completely expose the cervical canal and the vagina (McEntee, 1990, Erales-Villamil *et al.*, 2008). Immediately, the products (fetuses) were extracted.

Keller's formula was used to classify the age of the product, according to the third of gestation in which they were, based on the fetuses' or embryos' development and measurements.

To do so, we measured from the occipital vertex to the gluteal region, as follows: 1st third (17 cm), 2nd third (18-60 cm), and 3rd third (60 cm) (Hafez, 1978; Sosa *et al.*, 1988). In this study, the breed of the slaughtered animals was not considered since it was primarily commercial Zebu cattle and crossed with European cattle.

RESULTS AND DISCUSSION

A total of 428 cattle individuals were slaughtered, of which 399 were females (93.22%) and 29 males (6.78%) (Figure 1). The data obtained are higher than those reported by Sosa *et al.* (1988), Franco *et al.* (1991), and Erales-Villamil *et al.* (2008) in studies conducted at the slaughterhouses in Chetumal (76.4%), Quintana Roo, and Mérida (37.3%) and Uman (66.3%), Yucatán, México. The differences reported by those authors with the data in this study can be attributed to the time of the period evaluated, the number of animals that arrived at the slaughterhouse, and the geographical area of the municipal facility with a more significant number of animals slaughtered daily.

Of the 399 females slaughtered, 211 were pregnant, corresponding to 53% of the total (Figure 2). Similar results were reported by Sosa *et al.* (1988) and Franco *et al.* (1991), with 55.9% and 52.1% of pregnant females at slaughter. Those latter authors indicated that there is a significant tendency to sacrifice pregnant females in the dry season; with an economic
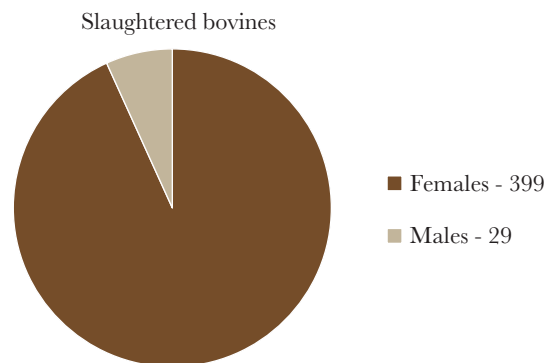

Figure 1. Female-male ratio of the slaughtered bovines in the municipal slaughterhouse of Pijijiapan, Chiapas, Mexico.
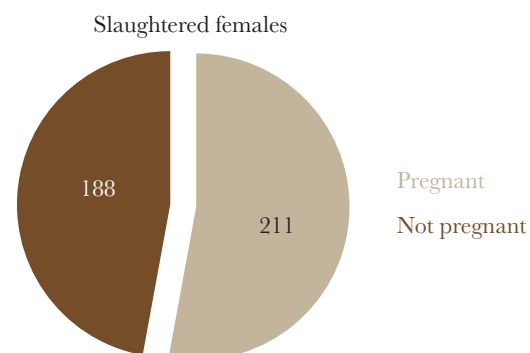

Figure 2. Pregnant-non-pregnant females ratio among the bovines slaughtered at the municipal slaughterhouse of Pijijiapan, Chiapas, Mexico.

impact on the concepts of calves at birth and dairy production (Fernández-Figueroa *et al.*, 2015).

On the other hand, Zitterer and Paulsen (2021) recorded a prevalence of 6.4% of pregnant females in a study conducted in Austria, where the slaughter of pregnant females is more restricted due to animal welfare. Since this study was carried out in the rainy season, the sale of breeding heifers can be attributed to weight gain caused by gestation with a higher economic remuneration for the producer (Sosa *et al.*, 1988). In addition, the animal may be susceptible to diseases, injuries, or other unforeseen conditions that make the producer decide to sacrifice the animal (Saxmose *et al.*, 2019).

Of all pregnant females, 85 (40.28%) were found in the 1st third of gestation, 58 (27.48%) in the second (2nd), and 68 (32.22%) in the last (3rd) third (Figure 3).

The data obtained differ from Sosa *et al.* (1988), who reported 45% of pregnant females in the 2nd third of gestation; but coincide with Franco *et al.* (1991), who referred that 30.8% of breeding heifers were slaughtered in the 1st third of gestation. Since the diagnosis of gestation is not a common practice, the producer was likely unaware that the cow was in the first third of gestation at the time of sale, which could explain why the slaughtered cows were mainly found at that stage.

Regarding the perspective of animal welfare, so far, there needs to be more information on the activation of signals that accompany brain processes for the manifestation of pain in slaughtered pregnant animals. Some studies have shown that bovine fetuses do not feel pain with electrical stunning. However, it is necessary to carry out other research using biomarkers for pain, the pain perception in pregnant female cattle when they are slaughtered with or without stunning (Fayemi and Muchenje, 2013).

CONCLUSIONS

The results showed that 53% of the slaughtered bovine females corresponded to breeding heifers, mainly in the first third of gestation, which contributes to the decrease in the repopulation and renewal of the cattle herd of the study region.

In addition, it is worth considering the lack of welfare in slaughtering cattle by killing many pregnant females and how they are slaughtered.
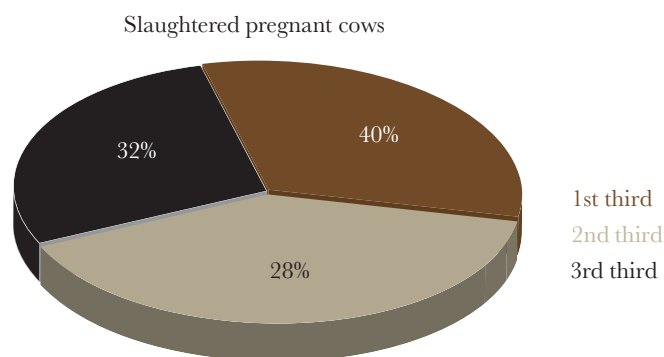

Figure 3. Distribution per third-of-gestation of the breeding heifers slaughtered in the municipal slaughterhouse of Pijijiapan, Chiapas, Mexico.

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