

Original Research Article

Reproductive Status of Cows Slaughtered at the Bamenda City Slaughter House, Cameroon

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Article History

Received: 07.04.2021

Accepted: 12.05.2021

Published: 04.10.2021

Journal homepage:

<https://www.easpublisher.com>

Quick Response Code

Abstract: Reproductive status of 317 cows slaughtered at the Bamenda Municipal Slaughterhouse were assessed in order to highlight potential losses resulting from the slaughtering of fertile cows. The cows were inspected to determine their ages, their reproductive status and detect possible causes of infertility from the reproductive pathologies observed in the reproductive tract. Data were collected from April to ending July 2020 and analyzed using SPSS version 23.0. Of a sample of 1,979 animals slaughtered, 317 (16.02) were cows. About 91.79% of the cows slaughtered were below 9 years of age. Pregnant cows slaughtered showed the highest prevalence (63.50%) of the reproductive states, 26.66% were normal cycling cows, 7.36% were lactating and 2.45% of the cows showed signs of heat. The common reproductive pathologies observed were ovarian cysts (92.85%), metritis (3.57%) and pyometra (3.57%). An estimated net income of 100 964 US \$ was found to be lost within a period of three months in a single abattoir due to the slaughter of pregnant cows. The high percentages of pregnant cows, under aged cows and fertile cows slaughtered at Bamenda city Abattoir within the study period caused high economic losses. This is due to the fact that, laws prohibiting the slaughter of such category of cows are not respected and hence the need for the government to reinforce her policies of ante mortem inspection by checking for physiological status in all cows before slaughtering in all national abattoirs to minimize economic losses. Cattle farmers, traders and butchers should be enlightened on the consequences of slaughtering pregnant and under age animals.

Keywords: Reproductive status, reproductive pathologies, slaughter, economic losses, Cameroon.

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INTRODUCTION

One of the major challenge of the world is the fast population growth estimated at 7.7 billion and projected to jump around 9.7 billion by 2050 meaning an increase of about 30 percent [1].

As one of the consequences of fast growing population is food security. Indeed, already a very high proportion of the world population (821 million people) specially in African countries with the highest population growth estimated at 2.5 to 3 percent per year are undernourished (239.1 million of whom are located in south-Sahara) particularly as protein more specifically animal proteins are concerned [2]. In fact, the level of consumption of animal proteins is below 20 kg /capita/year compared to 45 kg proposed by the

World Health Organization. Meat and milk are the two major sources of animal protein [1].

Agriculture sector is very paramount to food security and an essential component to the economic development of any nation. In Cameroon, livestock sub-sector plays a significant role in economy. It serves about 30% of rural population, representing 9% of agricultural production and contributes to 125 billion FCFA to the Gross Domestic Product [3]. Despite the large cattle population herd estimated at 6 million, these cattle are characterized by low productivity, delayed age at first calving of average 54 months and long calving interval of 536 days [4]. In order to improve meat production and consumption, it is expedient to measure factors militating against the production. These factors may be natural or artificial factors caused by

cross section of farmers involved in production, resulting to the slow growth of cattle. One of such factors is the common and unhealthy practice of indiscriminate slaughter of fertile cows in the slaughter houses which indirectly generate financial losses [5].

Proper economic management of animal demands that those sold for slaughter should be males and females that are reproductively inactive [6]. Thus, the need to evaluate the reproductive status of cows slaughtered at the Bamenda municipal slaughter house.

MATERIALS AND METHODS

Period and the study site

This study was an active survey which was carried out on 4 months (April to July 2020) at the Bamenda municipal slaughter house at Mile 4, Nkwen found in the North West region of the Western Highland of Cameroon. Altitudes range from 300 to 3000 m above sea level and latitude 5°20' and 7° North and longitude 9°40' and 11°10' East. The climate is marked by a dry season from November to mid-March and a rainy season from mid-March to October. Rainfall ranges between 1300-3000 mm with a mean of 2000 mm. The average minimum and maximum temperatures are 15.50°C and 24.5°C respectively although temperatures can go above 30°C. There are three types of soils: volcanic, hydromorphic and ferralitic. Main vegetation is Savannah. Although pastures are dominant with *Sporobolus africanus*, the following species can be encountered: *Pennisetum* spp and, *Loudetia*, *Hyparrhenia*, *Urelytrum fasciculatum*, *Panicum phramitoides*, *Paspalum arbutulare*. Some improved species have also been introduced such as *Brachiaria* spp, *Trypsacum laxum*, *Stylosanthes* spp. The Western Highland of Cameroon is an area free of Tse Tse fly [7].

Age Determination

Data collection was done by visiting the slaughterhouse from Monday to Saturday. The total number slaughtered cattle was recorded. The ages of the cows were estimated by counting the number of incisors and horn rings using the formula:

$n + 2 = \text{age of animal in years}$, Where $n = \text{number of rings on horns}$.

Determination of Reproductive status and pathologies

The reproductive status and pathologies were determined by visual assessment, palpation and dissection of the exposed reproductive tract of slaughtered cows. Pregnancy was identified from the presence of fetus or embryo from an enlarged uterus

while the ovaries from the non-pregnant cows were observed for the presence of follicles in order to establish their fertility status. Pregnant, lactating and normal cycling cows were noted as fertile.

Statistical Analysis

Data obtained were subjected to descriptive analysis using the software SPSS 23.0 and Microsoft Excel was used to plot graphs and charts.

RESULTS

Distribution (%) of cows slaughtered per age ranges

The analysis age estimated by counting the incisors and the horn rings as illustrated in figure 1 showed that majority of the cows (89.90%) slaughtered were between the ages of 5-7 years. 8.20% of the cows slaughtered were between the age group 8-10 years. The minority (1.89%) of slaughtered cows were between the age group (2-4 years). This implies that about 92 % in total of the slaughtered cows were under aged animals.

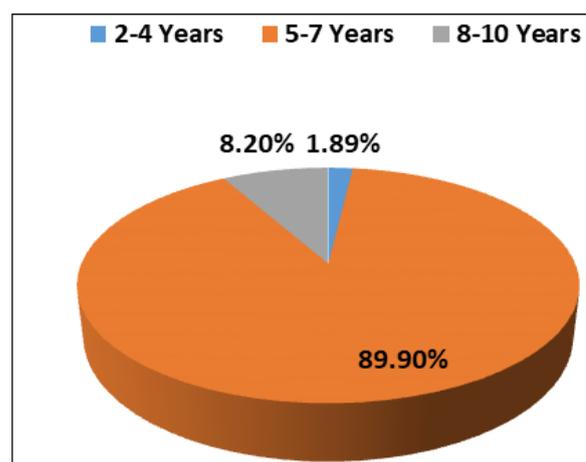


Figure 1: Distribution (%) of slaughtered cows per age ranges

Distribution (%) of cows slaughtered according to different reproductive status

The study animals comprised a total of 1,979 cattle population of which 1,662 were bulls and 317 were cows (16.02%). It was observed that, out of the cows that were being examined for slaughter, 285 (89.90%) were fertile. Apart from pregnant cows (63.50%) with prominent corpus luteum, 7 (2.45%) showed signs of coming on heat. Normal cycling cows (showing no signs of pregnancy, lactation or heat) accounted for about 27% of the fertile cows slaughtered while 21 cows (7.36%) were lactating (Figure 2).

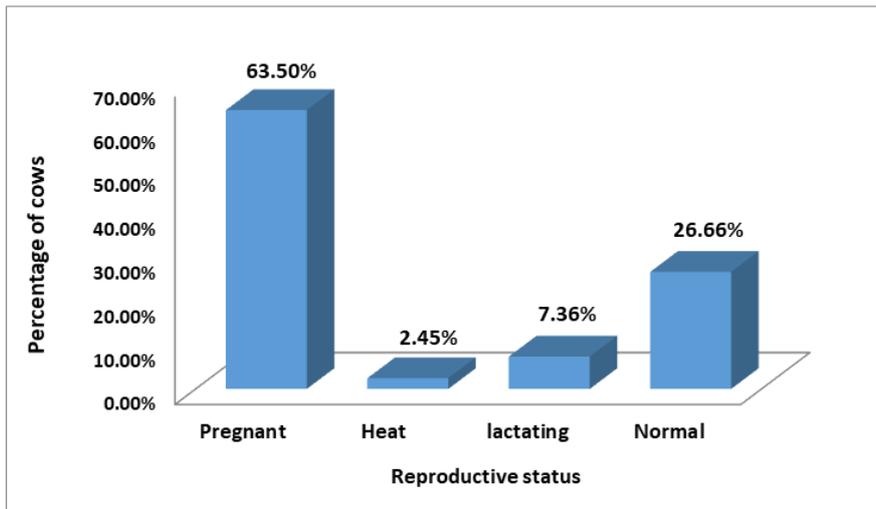


Figure 2: Distribution (%) of cows slaughtered per reproductive status

Distribution (%) of slaughtered cows according to the productive pathologies

Among the 317 slaughtered cows examined for reproductive pathologies, 28 (8.83%) of them within the period of study were having ovarian cyst, pyometra, or

metritis. It was seen that, pyometra and metritis recorded same percentage (close to 4%) of occurrence on slaughtered cows, while 92.85% of the infected cows had ovarian cysts as illustrated by Figure 3.

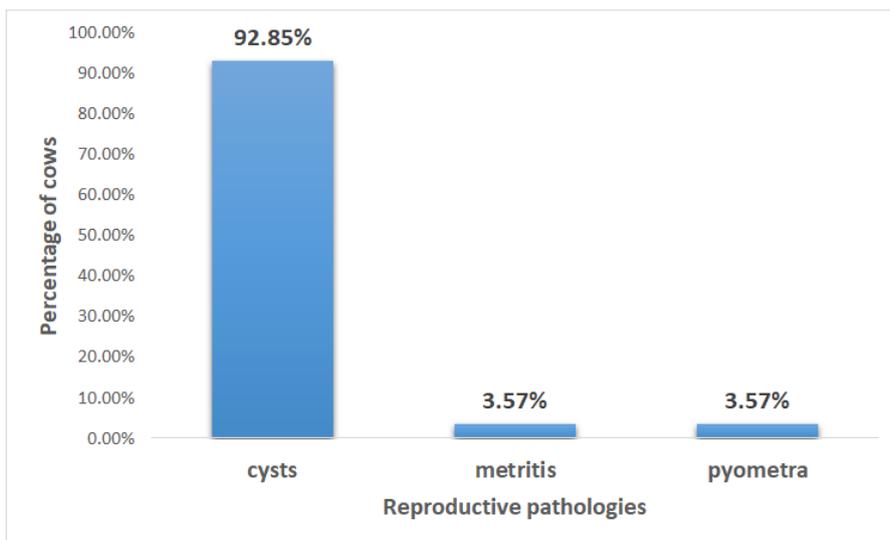


Figure 3: Distribution (%) of cows slaughtered per reproductive pathologies

Income loss for the period of study

During the study period (April to July), over 181 calves were lost through the slaughter of pregnant cows. The loss in terms of cattle can be estimated as follows: assuming a mortality rate of about 5% for calves from birth to adult age of 3–4 years [8], the number of calves lost, therefore, is calculated as 95%.

Given that 5% (9 calves) are lost to natural death, the quantity of cattle lost is obtained by multiplying the number of calves assumed to survive to adult age $[95\%/100\%] \times 181 = 172$ by the average weight of tropical cattle (250 kg), that is $172 \times 250 = 43\,000$ Kg.

The carcass equivalent is obtained as 52% of total live weight, that is $[52\%/100\%] \times 43\,000 \text{ Kg} = 22\,360 \text{ Kg}$.

The gross income is calculated at the government-regulated market price of (US \$5) per kilogram of carcass weight which gives US \$111 800. According to Gideon *et al*, 2017, the mean value of expected expenditure to raise a cow is 63 US \$. This gives a total cost of US \$10 836 for raising 172 calves. The income lost to producers is estimated by calculating the difference between the expected gross income of US \$111 800 and the total cost of raising the calves to 3 – 4 years of age (US \$10 836). This gives a net amount of 100 964 US \$ which is an estimate of income lost due

to the slaughter of pregnant cows within a period of three months only in a single slaughter house.

DISCUSSION

A high proportion of slaughtered cows at the Bamenda municipal slaughterhouse were below 9 years of age and more than half of the non-pregnant cows were fertile as shown by the presence of follicular growth on their ovaries. Slaughtering of cows below nine years of age is prohibited at all abattoirs in Cameroon because it is a major cause in the decline of cattle population and therefore, constitutes a real threat to the country's food security. This practice retards livestock industry, is against animal welfare and end up giving poor quality meat to the consumers [5]. The slaughter of reproductively active cows as indicated in this study, signals a potential danger in the development of the cattle industry in Cameroon. In a bid to provide meat for consumption of the human population, there is unethical practice of slaughtering pregnant animals [9]. Also, the scenario of animal slaughter in abattoirs has shown that not only the conventional non-breeding cattle are slaughtered for meat but also the reproductively active, pregnant and lactating ones [10]. This leads to cattle wastage which would have increased the protein supply to the ever increasing human population. This could be due to the fact that, cattle traders and butchers negotiate for slaughtered cattle based on physical inspection of the animal. The result is that most traders end up purchasing cows for slaughter that appear physically attractive and, depending on the season or period of year.

Pathologies accounted for about 9% of the cows slaughtered. Reproductive pathologies such as ovarian cysts, metritis and pyometra are causes of infertility that may spur the cattle farmers to sell cows for slaughter. The high proportion of cows slaughtered having ovarian cyst in the present study is an indication of the existence of pathologies of economic importance during this period. This also brings into light the inadequacies of the veterinary system in the country where farmers are left to themselves to handle animal health problems.

The income lost due to the slaughter of pregnant cows within a period of three months has been estimated at a net amount of 100 964 US \$ only in a single slaughterhouse. For cattle slaughtered beyond four years, it is assumed that annual production costs and benefits are proportional and constant, therefore, the net effect of the continuous slaughter of pregnant cows would mean a reduction in both consumer and producer welfare through meat shortage and reduced farmer incomes. Also, if all pregnant cows slaughtered were to calve, and the calves were to reach their reproductive age, they could have been used for reproduction to generate offspring which will help to propagate and increase the cattle population and reduce food insecurity. Control of reproductive status of cows

at abattoirs will go a long way in increasing herd productivity.

CONCLUSION

This study reveals the indiscriminate slaughtering of large number of pregnant and fertile cows in Cameroon. This monthly negative trend of slaughtering fertile cows will in the long run threaten the sustainability of the cattle industry. It is uneconomical to continue the practice of slaughtering reproductively active cows, a situation that greatly threatens the cattle industries.

Reinforcement of ante mortem inspection will help discover pregnant and under aged cows before slaughter. Policy efforts must concentrate on instituting routine veterinary checks at cattle control posts and abattoirs. We also recommend that farmers facing financial crisis should be advised to sell their pregnant and lactating cow to local dairy farmers rather than butchers. This will not only reduce the slaughter of fertile cows but also increase dairy production. If meat supplies are to be maintained or increased to meet future domestic demand, the incidence of slaughtering fertile cows and more specifically pregnant cows must be reduced or halted completely.

Conflict of Interest: Authors declare no conflict of interest in the realization and publication of this piece of work.

ACKNOWLEDGEMENTS

We wish to thank the Institute of Agricultural Research for Development (IRAD) Bambui, Cameroon for funding this project and providing the working environment for its realization. We also thank the butchers and the Veterinary health inspectors of the Bamenda Municipal slaughterhouse who took part in this study.

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Cite this Article: Hakoueu Nzakou Blandine Flora *et al* (2021). Reproductive Status of Cows Slaughtered at the Bamenda City Slaughter House, Cameroon. *EAS J Vet Med Sci*, 3(5), 50-54.