Original Research Article

On-Farm Fatality Rate of Cattle Transported to Igboora Abattoir

ABSTRACT

Aims: The shortcomings in animal welfare during the transportation of cattle had led to increased mortality among animals. The aim of this study is to determine the fatality rate in cattle transported for slaughter in the Towobowo abattoir located in Igboora Ibarapa Central Local Government.

Materials and methods: The fatality of cattle transported to Igboora abattoir was evaluated for four months. The cattle were brought to the lairage at Towobowo before they were slaughtered and sold out. They were usually brought in from Budo Musa and Thursday kraal market in Igboora. 2,196 cattle were brought to the abattoir between January and April, 2019. 12 animals were lost top transportation stress and mishandling. Data were analysed using chi square.

Results: There were no significant effect (p=0.4464) of the fatality rate across the months. Since, fatality is usually recorded mostly from the cattle brought from Budo Musa due to overcrowding in the trucks and under extreme atmospheric conditions with rough driving.

Conclusion: A conclusion of this study was that on-farm fatality could represent an important indicator for evaluating herd management and animal welfare practices. Further analysis and more structured data collection of this method would be needed in order to establish a robust method in sensitizing the farmers against the anomalous practice.

Keywords: Fatality, Igboora, Abattoir Towobowo, Cattle.

1. INTRODUCTION

In many countries, abattoirs and slaughter industries are becoming centralised into fewer, larger plants. As a consequence, livestock are subjected to travelling greater distances, enduring greater travel times, and exposed to more human handling. This increased stress on livestock, is not only an issue in regard to animal welfare, but it reduces economic value through its effects on meat quality [1]. The increasing trend of industry centralisation means that the transport distances between farm and abattoir are likely to increase. Also, the trade of live animals is of such a high economic viability, it is unlikely that pressure from animal

welfare groups could stop it. However, greater public awareness of animal welfare seems to be increasing in western countries, and as a result there is more pressure on the livestock industry to at least adopt better standards for the farming, handling, transport and slaughter of animals [1]. Transportation of animals begins with loading and ends with off-loading at the lairage. Unfortunately, both represent the most stressful period compared to the journey itself and ought to be done in a gentle manner and under suitable environmental conditions [12]. The animals are exposed to varieties of stressors ranging from stocking density, high temperature, humidity, noise and sudden vehicular movements [9]. They may be stressed also due to the absence of feed and water as well as bringing of different animals together. The stress caused by transportation have been reported to adversely affect animal welfare and caused economic losses related to mortality, carcass damage and decreased meat quality [18]. The aim of this study is to determine the fatality rate in cattle transported for slaughter in the Towobowo abattoir located in Igboora Ibarapa Central Local Government.

2. MATERIAL AND METHODS

2.1 Location of the study

Towobowo abattoir is located in Igboora Ibarapa Central Local Government with geographical Coordinates of latitude $5^{o}25^{o}$N and longitude $2^{o}15$ in an elevation of 160m above sea level. It is one of the major places where animals are being slaughtered in Igboora.

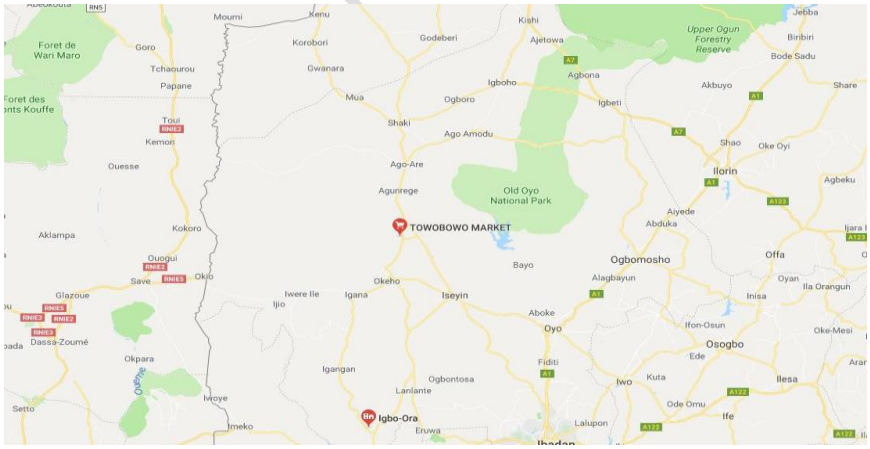

Plate 1: Map of Towobowo abattoir located in Igboora Ibarapa Central Local Government

2.2 Study sampling and population

The records of this study were based on regular visits to the abattoir for 4 months i.e. January 2019 – April 2019 on daily basis to really get idea of the problems and to witness all the activities that takes place from the acceptance of the animals at the Lairage to point of slaughtering. Adequate attention was paid to the mode of transportation and handling of the animals. The people that transported the animals were also interviewed to get the real source of the animals and duration of time if took to get to Towobowo.

Comment [C1]: How did you analyze the results from the interview?

2.3 Statistical Analysis

Data were analysed using chi square.

Comment [C2]: No mathematical equation and reference?

3. RESULTS AND DISCUSSION

2,196 cattle were received for slaughter at Towobowo abattoir out of which 12 died. 1,573 bulls and 623 cows. The fatality recorded was 6 and 6 respectively as a result of transportation stress as recorded in Table 1 and Figure 1. The majority of those butchers said that the animals were kept standing for hours without feed and water and that it also took some time to offload those animals at the lairage as those that do assist them were not always available and thereby keeping the animals standing for additional hours. The results obtained are similar to [17] who reported 0.4% fatality in pigs, 0.007% in fattened cattle over an 8 years' period [10] while [11] reported 0.029 and 0.256% for different categories of pigs and cattle between 1997 and 2006 respectively in Czech Republic. In Nigeria [7] reported 0.10% and 0.24% fatality for Cattle and Camel transported to Oko-Oba Abattoir in Lagos State respectively. Whilst death is a definitive welfare outcome, the variation in the above mentioned fatality is most likely related to the species or the type of animals being transported, bad road network and their transport and handling conditions [3]. The prevalence of transport related health problems varied significantly even within the same species. Road transport conditions are known to influence the physiological response of animals either as a result of physiological stress or physical fatigue [8, 5]. The causes of road transport stress are classified into pre-transport causes (these include lack of adequate preparation before transportation), transport causes (the distance and duration of transport, climatic factors and changes in the accustomed daily routine, nature of road and speed of the vehicle) and post-transport causes (rough unloading of animals from the vehicle, poor unloading ramp, lack of adequate food water and rest in lairage after transportation and lack of post-transport medication [16; 2; 6; 18; 13].

Comment [C3]: Bad punctuation

Table 1: Fatality of Cattle brought to Igboora abattoir as a result of transportation stress.

	Cattle number			Fatality		
Duration	Bull	Cow	Total	Bull	Cow	Total
January	273	237	510	2	-	2
February	421	162	583	1	3	4
March	387	107	494	-	1	1
April	492	117	609	3	2	5
Total	1,573	623	2,196	6	6	12

χ^2=16.09, p=0.4464

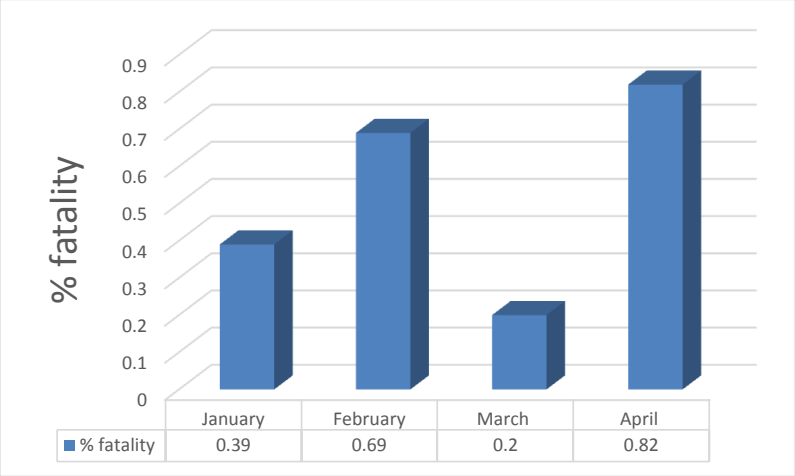

Figure 1: The percentage of fatality of cattle in Igboora abattoir

4. CONCLUSION

Stressors acting on the transported cattle leads to crucial welfare and economic problems to the animals, farmers, traders, transporters, butchers and the country at large. Management techniques towards reducing road transport stress should be aimed at selected stages of stress development. New technology approaches must include ways of improving the genetic composition of the animals with the aim of proving not only the production but also the adaptability of the animals to transport stress factors.

COMPETING INTERESTS

AUTHORS HAVE DECLARED THAT NO COMPETING INTERESTS EXIST.

REFERENCES

1. Atkinson, P. J. Investigation of the effects of transport and lairage on hydration state and resting behaviour of calves for export. The Vet Record 1992; 130, 413-416.
2. Ayo J. O. and Oladele S. B. Transport stress in food animals. A review Nig, Vet. J Special edition 1996; 1:58 – 68.
3. Becker, B. A., Mayes, H.F., Hahn, G.L., Nienabers, J.A., Jesse, G.W., Anderson, M.E.
4. Heymann, H. and Hedrick, H.B. Effect of fasting and transportation on various physiological parameters and meat quality of slaughter hogs 1,2,3. J. Animal Sci. 1989; 67: 334-341.
5. Brandshaw, R. H., Parot R. F., Goode J. A., Lloyd D. M., Rodway R. G. and Broom D. M. Behavioural and hormonal responces of pigs during transport: Effect of mixing and duration of Journey. Ani Sci. 1996; 62: 547 – 554.
6. Hartung J. Effects of transport on health of farm animals. Vit. Res. Common 2003; 27: 525 – 527.
7. Ibironke, A. A., Mccrinde, C.M.E., Adejuwon, T. A. and Cadmus, S.I.B. Losses associated with mortality of cattle and camel during transportation to Oko-Oba Abattoir, Lagos state, Nigeria. Proceedings of 14th annual conference of animal Science Association of Nigeria (ASAN) September 14th – 17th 2009, pp. 297 – 300. LAUTECH, Ogbomoso, Nigeria
8. Lambooij J.E, Garssen G. J, Wastra D, matemarm G. and Merkus, G.S.M. Transport of pigs by car for two days: some aspects of watering and loading density. Livest. Prod. Sci. 1985; 13:289 – 299.
9. Lambooij, E and van Putten, G. Transport of pigs. In: Grandin T (ed). Livestock Handling and Transport 1993; pp 213 – 231. CABI: Wallingford, UK.
10. Melena, M., Voslarova, E. Kozak, A., Belobradek, P., Bedanova, I., Steinhauser, L. and Vecerek, V. Influence of travel distance and the season upon transport-induced mortality in fattened cattle. Acta Vet Brno, 2006; 75: 619 – 624.

11. Melena, M. Voslarova, E. Kozak, A., Belobradek, P., Bedanova, I., Steinhauser, L. and Vecerek, V. Comparison of mortality rates in different categories of Pigs and Cattle during transport for slaughter. Acta Vet Brno, 2007;76: 109 – 116.
12. Minka N. S. and Ayo J. O Effects of loading behavior and road transport stress on traumatic injuries in cattle transported by road during the hot-dry season. Life Sci., 2007a;10: 91 – 95
13. Minka N.S. and Ayo J. O. Physiological responses of transported goats treated with ascorbic acid during the hot-dry season. Animal Sci. J. 2007b; 78: 164 – 172.
14. Minka, N.S., Ayo, J. O., Sackey, A.K.B., and Adelaiye, A.B. Assessment and scoring of stresses imposed on goats during handling, loading, road transportation and unloading, and the effect of pre-treatment with ascorbic acid. Livestock Science, 2009;125, 175 – 282.
15. Nielsen B.L., Dybkjaer j. and Herskin M.S. Road transport of farm animals: effects of Journey duration on animal welfare. Animal 2011; 5: 415 – 427.
16. Plya schenko S. I. and Sidorow V.T. Stresses in farm animals Agropromizdat, Moscow (in Russian), 1987.
17. Von Altrock, A and Von Holleben, K. Sudden death in fattening herds on taking blood samples- Experiences from the practice. Berliner Munchener Tierarzt Wochenschr 1999; 112: 86-90.
18. Warriss, P.D., Brown, S.N., Adams, S.J. and Corlett, I.K. Relationships between subjective and objective assessments of stress at slaughter and meat quality in pigs. Meat Science, 1994; 38: 329 – 340.
19. Warris P. D. Optional lairage times and conditions for slaughtering pigs. A review Vet. Rec. 2003; 153: 170 – 176.
20. Weeks C.A., McGreevy P., Waran N.K. Welfare issues related to transport and handling of both trained and unhandled horses and ponies. Equine Vet. Edc. 2012; 423 – 430