



## FETUSES LOSSES IN SMALL RUMINANTS: A CASE STUDY OF HADEJIA EMIRATE COUNCIL OF JIGAWA STATE.

\*<sup>1</sup>Nasir M, <sup>2</sup>Aliyu, A. M. and <sup>2</sup>Bature, I.

<sup>1</sup>Department of Animal Science, Kano University of Science and Technology Wudil, P.M.B 3045, Wudil, Kano State.

<sup>2</sup>Department of Animal Science, Federal University Dutsin-Ma, P.M.B. 5001, Katsina State.

\*Corresponding Author's Email: [mudassirnasir3@gmail.com](mailto:mudassirnasir3@gmail.com) +2348065433534

### ABSTRACT

A study was conducted to assess the extent of foetal losses from small ruminants and possible factors responsible for slaughtering female animals in semi-arid abattoirs of Hadejia and Malam-Madori, Jigawa State. The study was carried out using structured questionnaire administered to 160 respondents in the abattoirs for a period of three months (June-August, 2013). Specify the statistical tool you used to analyzed your results here. The results revealed that youths aged less than 25 (35.71%) and 36-45 (37.29%) years were the main source of labour in Hadejia and Malam-Madori. The respondents were mostly engaged in evisceration and skinning (75.71% and 82.86%) in the abattoirs. Majority (77.15% and 72.00%) of the respondents in both study areas were males, mostly (68.00% and 60.00%) married, few (12.00% and 9.33%) had tertiary education, while many (26.67% and 32.00%) had acquired secondary education. Small ruminant foetuses recovered from 6 to 10 per day were 65.71% and 52.85% which vary with season. It was concluded that there was a cause for concern on loss of fetuses especially among small ruminants. It is therefore suggested that awareness should be created among livestock rearers/farmers and butchers on the implication of slaughtering of pregnant animals and its consequence on the future of small ruminant's population since increase in population of any livestock species is based on reproduction. Thus, legislation prohibiting indiscriminate slaughter of pregnant or inbred female animals should be enforced or enacted as this has far reaching negative impact on reproduction/production and revenue generation in the subsector as well as a progress on food security in the study areas. The aim of is study is to assess the extent of foetal losses from small ruminants and possible factors responsible for slaughtering female animals in semi-arid abattoirs of Hadejia and Malam-Madori, Jigawa State.

**Keyword:** Ruminant, Foetus, livestock and Hadejia

### INTRODUCTION

The increase in livestock and human population figures indicated a twice increased in human population growth rate as against livestock production (Taiwo *et al.* 2006). This has a far reaching negative impact on reproduction and revenue generation in the livestock sub-sector as wells as progress on food security (Ogaiké *et al.* 2011). A phenomenon that led to the common and unhealthy practice of slaughter of breeding and pregnant animals in most Nigerian abattoirs. Ndi *et al.* (1995) reported that slaughter of pregnant sheep and goats contributes to livestock prenatal losses in Nigeria and possess uncertainty with regards to the country's ability to meet its long term demand for meat and meat products at affordable price. In Kano, Northern western Nigeria Muhammad *et al.* (2007) reported a daily slaughter figures of 34.3% for sheep and 26.1% for goats at pregnancy. Similarly, Sunusi *et al.* (2006) reported that 57.85% and 61.39% of the total number of sheep and goats respectively, slaughtered at Bauchi and Jos Plateau States were pregnant.

Foetal wastage refers to the slaughtering of pregnant animals without consideration for the developing embryo. Fetuses,

which are potential animals, are lost at the instance of slaughter whenever pregnant animals are involved. Many reasons have been suggested for the wastage and these include ill-health, urgent need and ignorance of livestock owners and butchers. Garba *et al.* (1992) and Wekhe *et al.* (2000) reported that increased in population of any livestock specie is based on reproduction. Kudi *et al.* (1996) reported that female sheep and goats are more susceptible to disease infection compared to their male counterparts. This makes female animals more vulnerable to slaughter at this stage of production than males.

### MATERIALS AND METHOD

#### Description of the Study Area

Two abattoirs in Hadejia and Malam-Madori L.G. As of Jigawa state were selected for the purpose of this study in Jigawa State. Jigawa state shares boundaries with Bauchi, Kano, Yobe state and Niger Republic. Hadejia and Malam-Madori are situated in the Eastern part of Jigawa state and with an annual rainfall of about 600mm-800mm and 4-8 month of dry season (Wikipedia 2020). Hadejia is located between latitude 12.45°N and longitude 10.04°E at an altitude of 340m above sea level with average minimum and maximum temperatures of 29°C and

38°C. while Malam Madori, is located on latitude 12°N and longitude 13°E at an altitude of 370m above sea level. The average minimum and maximum temperatures were 28°C and 35°C (Wikipedia 2020)

## EXPERIMENTAL PROCEDURE

### Questionnaire Survey

Structured questionnaires were used as sampling materials. A total number of 160 structured questionnaires were administered to (80 respondents in each abattoirs) were used for this study. Questionnaires were administered to livestock producers, butchers and veterinary health workers /meat inspectors.

### Visual observation

This procedure of collecting data involved regular visits early morning to Hadejia and Malam-Madori abattoirs on alternate days (from 6:00 am-10:00 am) over a period of 3 months (June-August, 2013) at small ruminants' slaughter houses when sheep and goats are brought on to slaughter slabs continuously. Their numbers were recorded and other relevant information was also obtained using visual observation such as the number of male and female animals being slaughtered and the fetuses recovered after slaughter.

### Data analysis

The Data obtained from the respondents and the records from visual observation were subjected to analysis of variance (ANOVA) using General Linear Model (GLM) procedure of SAS (2002, version 9.1) where significant differences observed mean was compared using Duncan multiple range test (DMRT, 1955).

## RESULTS AND DISCUSSIONS

### Socio economic background of livestock farmers, Veterinary health workers and butchers

**Tables 1: Socio economic background of the respondents (Livestock farmers, Veterinary health workers and butchers)**

Variables	Hadejia (%)	Malam Mador (%)
<b>Age (yrs)</b>		
<25	35.71	27.14
26--35	25.71	28.57
36--45	28.57	37.14
> 45	10.01	7.15
<b>Gender</b>		
Male	77.15	72.00
Female	22.85	28.00
<b>Marital status</b>		
Single	32.00	40.00
Married	68.00	60.00
<b>Occupation</b>		
Livestock Farming	15.50	26.67
Butcher	32.00	25.33
Civil servant	24.50	21.33
Artisan	28.00	26.67
<b>Educational status</b>		
Qur'anic school	24.00	26.67
Primary school	20.00	24.00
Secondary school	26.67	32.00
Tertiary school	12.00	9.33
Adult education	17.33	8.00

Source: - Field survey, 2013.

The socio economic background of Livestock rearers, Veterinary health workers and butchers at Hadejia and Malam-Madori Local Governments Areas of Jigawa State, Nigeria is shown in Table 1. Majority of the respondents (35.71%) in Hadejia aged less than 25 years; while in Malam-Madori most of the respondent (27.14%) aged between 36 to 45 years. This shows that more youths were engaged in this activity in Hadejia than in Malam-Madori. This result compares favourably with the report of Muhammad *et al.*, (2007) on age distribution of the respondent in Kano, a neighbouring state, with similar socio-economic background. The result on sex distribution indicate that the respondents in both Hadejia and Malam-Madori were male (77.15% and 72.00%). This result is in conformity with the findings of Muhammad *et al.* (2007) on sex distribution of the respondents in Kano state. Most of the respondents in the study areas (68.00% and 60.00%) were married. The result is in conformity with that of Muhammad *et al.* (2007) who found 100% male and 76.67% married in Kano state. This is not far from the tradition and culture of the respondents. The Occupation of the respondents in both Hadejia and Malam-Madori revealed that 15.50% and 26.67% were Livestock rearers; 32.00% and 25.33% were Butchers; 24.50% and 21.33% were Civil servants or Veterinary health workers and 28.00% and 26.67% were Artisans. The result is contrary to that of Katie *et al.* (1997) who reported that 40% of the respondents in Adamawa state were Artisans, the difference could be attributed to differences in geographical locations of the study. The Educational status of the respondents in both Hadejia and Malam-Madori revealed that majority of the respondents (26.67% and 32.00%) had attained secondary education. This results is in line with the report of Muhammad and Kwali (2005) who reported that more than 60% of livestock farmers in northern Nigeria were not literate.

### Cause of Foetal loss in Small ruminants by Livestock farmers in Semi-arid regions of (Hadejia and Malam-Madori) Abattoirs

The cause of foetal loss in Small ruminants by Livestock rearers in the abattoirs of Hadejia and Malam-Maori is presented in Table 2. About 68.57 and 51.43% of the respondents in Hadejia and Malam-Madori had 1 to 5 years' experience in livestock production with 42.85% and 55.71% (Sheep and goats) being the main species of livestock kept by the respondents. This probably could be due to the lower relative cost of acquiring and maintaining these species of livestock. Sunusi *et al.* (2006)

reported similar observations. Experience of sale/slaughter of inbred animals constitute about 58.57 and 68.57% in the study area and the main reasons were as a results of either urgent need (54.29% and 51.43%), disease (28.57% and 25.71%) or economic factors (70.10% and 87.71%). This observation agrees with the reports of Garba *et al.* (1997) who stated that the reason for slaughter of pregnant animals could be due to disease and/or urgent need of income. Ajala *et al.* (2004) also reported that disease incidence is one of the major constraints associated with small ruminants' production in Nigeria.

**Tables 2: Cause of foetal loss in small ruminants by Livestock farmers in Semi-arid region of (Hadejia and Malam-Madori) Abattoirs**

Variables	Hadejia (%)	MalamMadori (%)
<b>Experience in livestock production</b>		
1---5yrs	68.57	51.43
6---10yrs	31.43	48.57
Above 10yrs	---	---
<b>Species of livestock kept</b>		
Cattle	---	---
Sheep	20.00	22.85
Goats	37.14	21.43
Combination (sheep and goats)	42.85	55.71
<b>Experience of animal sale/slaughter with pregnancy</b>		
Yes	58.57	68.57
No	41.43	31.43
<b>Reason for sale/slaughter of animal with pregnancy</b>		
Urgent needs	54.29	51.43
Ill-health (disease)	28.57	25.71
Ignorance	17.14	22.85
<b>Economic factors as a cause of foetal loss</b>		
Yes	70.00	85.71
No	30.00	14.29

Source: Field survey, 2013

### Cause of foetal loss in small ruminants by butchers in Semi-arid regions of (Hadejia and Malam-Madori) Abattoirs

The cause of Foetal loss in Small ruminants by butchers in the semi-arid abattoirs of Hadejia and Malam-Madori is presented in Table 3. Majority of the respondents (80.00% and 67.14%) paid regular visits to slaughter slab. The results compare favourably with that of Taiwo *et al.* (2006) who reported about 75% of the butchers in urban areas visit slaughter slab this statement was further supported by Muhammad *et al.* (2007) in northern Nigeria. Greater percentage of the butchers were usually involved in carcass dressing (85.71% and 74.29%) and skinning (35.71% and 51.43%) and evisceration (40.00% and

31.43%) which constitute the main activities engaged by the respondents at the abattoir visited for this study. Most of the respondent (84.28% and 91.42%), reported that they had experience in slaughter of animals with pregnancy. In addition, majority of the respondents (65.71% and 52.85%) reported that 6 to 10 fetuses had been recovered daily and the incidence of foetal loss mostly occurs during early wet season (51.42% and 61.43%) as a result of either urgent need (37.14% and 47.14%) or disease (40.00% and 31.43%). This is contrary to report of Abassa *et al.* (1995) that losses of fetuses could be related to dry season under nourishments in the semi-arid zone.

**Tables 3: Cause of foetal loss in small ruminants by butchers in the Semi-arid regions of (Hadejia and Malam-Madori) Abattoir**

Variables	Hadejia (%)	MalamMadori (%)
<b>Regular visitation to slaughter slab</b>		
Yes	80.00	67.14
No	20.00	32.85
<b>Involvement in carcass dressing</b>		
Yes	85.71	74.29
No	14.28	25.71
<b>Type of activity engaged</b>		
Slaughtering	24.28	17.14
Skinning	35.71	51.43
Evisceration	40.00	31.43
<b>Experience of animal slaughter with pregnancy</b>		
Yes	84.28	91.42
No	15.71	8.57
<b>Estimate numbers of fetuses observed per day</b>		
1---5	11.42	14.28
6---10	65.71	52.85
> 10	22.85	32.86
<b>Season in which incident mostly occur</b>		
Early wet season	51.42	61.43
Late dry season	48.56	37.71
<b>Source of occurrence of foetal loss</b>		
Urgent needs	37.14	47.14
At will	17.14	10.00
Ill-health (disease)	40.00	31.43
Ignorance	5.71	11.4

Source: Field survey, 2013

### Cause of Foetal loss in small ruminants by meat inspectors or Veterinary health workers in the Semi-arid region of (Hadejia and Malam-Madori) Abattoirs

The cause of Foetal loss in Small ruminants by meat inspectors or Veterinary health workers in Semi-arid Abattoirs of Hadejia and Malam-Madori is presented as Table 4 The attendance to slaughter slab at Hadejia and Malam-Madori abattoirs by veterinary health workers or meat inspectors was mostly regular (100.00% and 60.00%) and they conduct of inspection prior to slaughter (Ante-mortem inspection). The veterinary health workers (80.00%) had been carrying ante-mortem inspection

frequently in Hadejia abattoir, while that was not the case in the Malam-Madori abattoir, probably due to inadequate manpower. Halle *et al.* (1997) had earlier noted this observation in his findings. Record keeping in Hadejia and Malam-Madori by veterinary health workers was regular (100.00% and 100.00%). It has been reported by the respondents that the number of small ruminant animals slaughtered per day the highest been from 100 to 299 animals were (60.00% and 20.00%) the fetuses recovered daily is very high in the early wet seasons (40.00% and 60.00%), nevertheless the present study shows that early wet seasons has the highest incidence of foetal recovery. Abiola

(1999) reported similar result from Ibadan abattoir in the sub-humid zones of Nigeria. In addition, the respondents suggested that foetal loss in the abattoir is influenced by lack of adequate

man power, therefore they appeal to increase their number that help to check incidence and enhance working condition.

**Tables 4: Cause of foetal loss in small ruminants by meat inspectors of Veterinary health workers in Semi-arid regions of (Hadejia and Malam-Madori) Abattoirs**

Variables	Hadejia (%)	MalamMadori (%)
<b>Regular visitation to slaughter slab</b>		
Yes	100.00	60.00
No	----	40.00
<b>How frequent ante mortem is carried out</b>		
Frequent	80.00	40.00
Not frequent	20.00	60.00
<b>Do you take records regularly?</b>		
Yes	100.00	100.00
No	----	--
<b>Number of animals slaughtered per day</b>		
50----100	20.00	60.00
100----299	60.00	20.00
300----499	20.00	20.00
<b>Number of foetuses recovered per day</b>		
Regular records	20.00	----
Not- regular records	80.00	100.00
<b>Season in which incidence is most likely to occur</b>		
Early wet season	61.41	60.00
Late dry season	38.59	40.00

Source: Field survey, 2013

**Number of small ruminants slaughtered and the Fetuses recovered in Semi-arid regions of (Hadejia and Malam-Madori) Abattoirs between June to August, 2013.**

The number of small ruminants slaughtered and fetuses recovered in Hadejia and Malam-Madori abattoirs between June to August, 2013 is presented in Table 5. The total numbers of sheep and goats slaughtered at Hadejia abattoir were 2487 and 3631, respectively out of which females (ewes and does) were higher than their male counterparts. The fetuses recovered from sheep and goats were 386 and 671, respectively. In Malam-Madori abattoir, the total numbers of sheep and goats slaughtered were 2151 and 2879, respectively out of which

1297 and 1812 were ewes and does, respectively. The fetuses recovered were 206 and 382 from sheep and goats, respectively. The results show that more sheep and goats were slaughtered at Hadejia than Malam-Madori and this could be probably due to some economic factors and/or population or urbanization. Accordingly, more fetuses were recovered in Hadejia abattoir than that of Malam-Madori. The results of the presents study are in conformity with the report of Garba *et al.* (1992) and Wekhe *et al.* (2000) who observed slaughtered of higher percentage of sheep and goats in the abattoir of Sokoto and Port Harcourt.

**Table 5: Number of small ruminants slaughtered and fetuses recovered in the Semi-arid regions of (Hadejia and Malam-Madori) Abattoirs**

Location	Animals							
	Ts	Tg	Ms	Mg	Fs	Fg	FRs	FRg
Hadejia	2487	3631	998	1472	1489	2159	386	671
Malam-Madori	2151	2879	854	1067	1297	1812	206	382

Source: field survey, 2013

### CONCLUSION AND RECOMMENDATIONS

Based on the results of this study, it can be concluded that pregnant sheep and goats are slaughtered due to poverty, scarcity of feeds, prolong labour as well as diseased conditions. Therefore, its recommended that general economic status and social well-being of livestock farmers should be improved, pastures and grazing sites should be provided as well modern equipments at abattoirs and laws should be imposed in such a way that all adult females to be slaughtered must undergo ultrasound scan to ascertain whether there are pregnant or otherwise.

### REFERENCES

Abassa F. S. Tambi, N.E. and Agharih 1995 Implication of slaughter of pregnant Ewes and Does to future Stocks in the Semi-Arid Urban Abattoir. In *Medwell Journal of Animal and Veterinary Advances*, 6(6): 819-822.

Abiola S. A. (1999). Evaluation of slaughter facilities, management and conditions for the production of wholesome meat in Nigeria. A case study of Afoajala modern slaughter house in Abo Mbaise L.G.A. of Imo State.....

Ajala, M. K. (2004). Household Decision-Making in the production of small ruminants in Giwa L.G.A of Kaduna State. *Proceedings of the 29<sup>th</sup> Annual Conference of the Nigeria Society of Animal Production. Sokoto, Nigeria: 399-402.*

Garba, H.S., Hassan, W.A and Akinbemi, B.T. (1992). Foetal wastage through slaughtering of pregnant cattle at Sokoto Abattoir. *Journal of Tropical Veterinary Sciences* 25 (3) pp 27-30

Hake L.A., J. K. Loosli, H.F. Hintz, and R.G. Warner (1997) Number of livestock reported inspected and slaughtered by states. In *Annual Abstracts of Statistics. 2001 edition 1995–1999. 376–80. Abuja, Nigeria: Federal Office of statistics.*

Katie S. Wekhe, S.N., and N.A. Berepubo. 1997. Prevalence and implication of pregnant ruminants in Port Harcourt, Nigeria. *Delta Ministry of Agriculture* 1: 43–5.

Kudi, A., Alade, C., Bamgbose, S.M., Abubaka, A.M and Muhammad, S. (1996) Foetal losses resulting from the slaughter of pregnant cattle, sheep and goats in Bauchi Abattoir, Book of Abstract: 21st con, Nigerian Society for Animal Production (NSAP) 24th-28th march. 1996.

Kwali, S. A (2005). Studies on prospects and constraints to small scale Youghurt production in Bauchi state Nigeria. Proc . Proceeding 31<sup>st</sup> Annual. Conference Nigerian. Soceity of Animal. Production., (NSAP) 12<sup>th</sup> 15<sup>th</sup> march 2006. PP 122-125.

Muhammad, I.R. Muhammad B.F. and Fatima, B.F. (2005). Application of Appropriate Technology in Over Coming Environmental Barriers in Animal Agriculture in Nigeria. Proceeding 31<sup>st</sup> Annual. Conference Nigerian. Soceity of Animal. Production., pp 102-106

Muhammad, I.R. Ashiru, R.M and Abdullahi, A.Y. (2007). Implication of slaughter of pregnant Ewes and Does to future Stocks in the Semi-Arid Urban Abattoir. In *Medwell Journal of Animal and Veterinary Advances*, 6(6): 819-822.

Muhammad, B.F and Kwali, R. (2005): Studies on prospects and constraints to small scale Youghurt production in Bauchi state Nigeria. Proceeding 31<sup>st</sup> Annual. Conference Nigerian. Society of Animal. Production., (NSAP) 12<sup>th</sup> 15<sup>th</sup> march 2006. PP 122-125.

Muhammad, I.R. Muhammad B.F. and Fatima, B.F.(2006) Application of Appropriate Technology in Over Coming Environmental Barriers in Animal Agriculture in Nigeria Proceeding 31<sup>st</sup> Annual. Conference Nigerian. Society of Animal. Production. (NSAP) 12<sup>th</sup> 15<sup>th</sup> march 2006. PP 140-142.

Ndi, C., Tambi, N.E. and Agharih, N.W. (1995). Reducing calf wastage from the slaughter of pregnant cows in cameroun institute of animal research (IRZ). *Journal of Tropical Veterinary Sciences* 23(3) pp 127-131

Ogaïke, F. A. (2011) Slaughter figures in Rivers State from 2003–2005. Department of Livestock and Veterinary Services, Ministry of Agriculture, Port Harcourt, Nigeria

Sunusi, M., Abubakar, M. and Luka, B. (2006). Incidence of foetal wastage in small ruminant slaughtered at Bauchi and Jos Abattoirs. In:

Taiwo, B. B A, Aluko, F.A and Olufowobi, A.O. (2006). Reproductive Wastage in some urban abattoirs in Ogun state. In: *Medwell Journal of Animal and Veterinary Advances*, 5(5): 231-236

Wekhe, S. B. and Wekhe, S. N.. (1999). Incidence of reproductive Abnormalities among slaughter house animal in Port-harcourt Tropical journal of Animal science 1(2): 175-180Wekhe

S. B. Aniebo, A. O. , Wekhe, S. N. and Okoli, I. C.( 2002) Abattoir blood waste generation in Rivers State and its environmental implications in the Niger Delta Toxicological & Environmental Chemistry, 91: 4, 619-625 DOI: 10.1080/02772240802343404 URL: <http://dx.doi.org/10.1080/02772240802343404>  
**http://www.wikipedia:** The free encyclopedia, 2010



©2021 This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International license viewed via <https://creativecommons.org/licenses/by/4.0/> which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is cited appropriately.