FOETAL WASTAGE IN RUMINANTS AND SUSTAINABLE LIVESTOCK INDUSTRY IN NIGERIA

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ABSTRACT
The study was conducted to ascertain the proportion of pregnant animals slaughtered in Mubi main slaughter house. This is with the view to contribute to the already published information from other parts of the world in order to create more awareness on the dangers of such practice on food security and the sustainable livestock sub- sector of the economy. Data used in this study were obtained from daily records on three classes of animals slaughtered at the Mubi main slaughter house for a period of four years (2005-2008). The number of pregnant animals slaughtered and foetuses wasted in year 2005, 2007 and 2008 did not differ significantly (P>0.05) from one another. However, year 2006 has significantly (P<0.05) higher number of pregnant cows, does and ewes slaughtered and foetal wastage encountered. The number of foetal loss encountered in the does and ewes surpassed that of dams due to twins and triplets recovered. Number of pregnant animals slaughtered and the foetuses wasted differ significantly (P<0.05) between seasons. The number of pregnant cows slaughtered and foetuses wasted were highest during the early dry season. The number of pregnant dams slaughtered and foetal wastage encountered tally because of single birth which is common in cows. Pregnant does slaughtered during the early dry and late dry seasons did not show any significant difference (P>0.05). But fetuses recovered differ significantly (P<0.05) between the two seasons mentioned. Early dry season has the highest number of pregnant ewes slaughtered and foetuses recovered. Late wet season seems to have least number of pregnant animals slaughtered and fetuses wasted. The distribution of general slaughter of female animals on monthly basis revealed that more cows and does were slaughtered in the month of December which were the highest. Highest number of pregnant ewes slaughtered was in the month of November but foetal wastage was highest in the month of April. Slaughter of animals irrespective of specie differs significantly (P<0.05) between months. Abattoir foetal wastage is a monster eating silently and deeply into the life of livestock industry. Unless this bottle neck is checked and eliminated, the sustainability of the livestock industry will just be an illusion.
Keywords: Abattoir, Foetal Wastage, Ruminants, Sustainable, Livestock Industry

INTRODUCTION
In the Guinea Savannah zone, livestock is one of the major potential sources of food and income to almost 75% of the human population (NISER/CBN, 1991; FDLPCS, 1992). Slaughter of pregnant domestic animals vis-à-vis the cows, does, ewes and others will no doubt worsen the already precarious supply of animal protein to the populace (Abdullahi, 1985). In the past, low productivity in farm animals in most parts of the developing nations especially in the sub-Saharan Africa has been blamed on factors like poor/low production traits of the indigenous breeds, inadequate or poor veterinary services, and improper

management, high incidence of diseases and parasites (Hale *et al*., 1997). Contrary to this school of thought, it is observed that one of the major constraints to the growth and sustainability of livestock industry in Nigeria is the indiscriminate slaughter of pregnant animals. This has been attributed to the economic recession witnessed in Nigeria since the 1980s leading to deterioration in the quality and quantity of animal protein in the diet of the citizens. This elicited a new trend in ameliorating the situation. Thus the slaughtering of not only prime breeding males but also pregnant females resulting in foetal wastage (Abiola *et al*., 1999) and consequent loss of increased livestock production.

Several researchers from various part of Nigeria were able to report on the numerical figures of slaughtered pregnant animals and the foetuses wasted. Matthew *et al*.(1982) reported that out of a total of 1948047 cattle slaughtered in Kaduna, Jos, Enugu and Ibadan, between 1975 to 1980, 31797 i.e. 1.6 % were pregnant. Between 1983 and 1987 a total of 127123 cattle were slaughtered in sokoto and out of this number, 4253 foetuses were recovered (Garba et al., 1992). From Maiduguri, 3733, 354, 2510 and 3188 foetuses were recovered from cattle, camel, sheep and goats respectively between 1982 and 1989; (Alaku and Orijuide, 1992).Oyekunle *et al.* (1992) reported that 9630 foetuses were recovered from cows slaughtered in Abeokuta and Ijebu- Igbo abattoirs between 1984 and 1989. From 1991 to 1995, a total of 1125, 2315 and 1078 fetuses were recovered from cattle, goats and sheep in Adamawa state (Hale et al., 1997). A total of 2565 fetuses were wasted due slaughter of pregnant sows in Nsukka between 1991 and 1999 (Onu, 2002). Waba, (2006) reported a total of 1574, 3199, 959 and 293 foetal recovery from slaughtered pregnant cows, goat, sheep and camel in Borno state within the period of 12 months .i.e. January to December 2003. From the few records available, it is crystal clear that the Nigerian livestock industry is in jeopardy of total collapse.

Within the past four years, Mubi main slaughter house has witnessed/recorded a substantial number of wasted foetuses among different species of animals slaughtered. It is on the strength of this that this study became imperative in order to assess the extent of foetal wastages in Mubi main slaughter house. The current study ascertained the proportion of pregnant animals slaughtered between 2005 and 2008. This is with the view to contribute to the already published information from other parts of the country in order to create more awareness on the dangers of such practice on food security and the sustainability of the livestock sub- sector of the economy. If this unhealthy, unethical and uneconomical practice is not stopped, the sustainability of livestock production will be a mere dream.

METHODOLOGY
Data used in this study were obtained from daily records on three classes of animals slaughtered at the Mubi main slaughter house for a period of four years (2005-2008). The period under study was divided into four seasons, early dry (October to December), late dry (January to March), early wet (April to June) and Late wet (July to September) (Tizhe, *et al*., 2006). Animals on which data were generated include pregnant cows, goats and sheep. Data obtained were subjected to analyses of variance. Seasonal, yearly and monthly means were computed and compared using LSD Statstix 8.0.

RESULTS AND DISCUSSION

Table 1, shows the slaughter of different species of animals (Cattle, Goats and Sheep) on yearly and seasonal basis. Year 2005, has the highest number of pregnant cows slaughtered followed by 2008, 2006 and 2007 respectively. While year 2008 has the highest number of does slaughtered followed by 2005, 2006 and 2007. Also year 2008 has the highest number of pregnant ewes slaughtered followed by 2005, 2007 and 2006. Seasonal figures shows that early dry season (October to December) has the highest number of cows slaughtered followed by late dry, early wet and late wet respectively. More number of does were slaughtered during early dry followed by late dry, early wet and late wet. Higher number of ewes were slaughtered in the late wet followed by early dry, early wet and late dry. However, there is no significant seasonal influence on slaughter of the three species.

Total number of pregnant animals slaughtered and foetuses recovered are shown in table 2. Yearly slaughter shows a lot of variability. The year 2005 and 2008 have the highest number of total slaughter of animals while year 2006 has the highest number of pregnant animals slaughtered and foetuses wasted respectively. Early dry season has the highest number of total animals slaughtered, pregnant animals and foetal loss encountered, irrespective of specie. While late wet season has the lowest total number of animals slaughtered, those pregnant and foetal loss encountered.

Yearly slaughter of pregnant animals based on species and fetuses wasted are shown in table 3. The number of pregnant animals slaughtered and fetuses wasted in year 2005, 2007 and 2008 did not differ significantly (P>0.05) from each other. However, year 2006 significantly (P<0.05) has higher number of cows, does and pregnant ewes slaughtered and foetal losses encountered. The number of foetal losses encountered in the does and ewes surpassed the number of dams due to twining and triplets among the slaughtered dams. Number of pregnant animals slaughtered and the fetuses wasted differ significantly (P<0.05) between seasons. The number of pregnant cows slaughtered and fetuses wasted were highest during the early dry season (October – December). The figures of pregnant dams slaughtered and foetal losses encountered tally due to single birth which is common in cows. Pregnant does slaughtered during the early dry and late dry seasons did not show any significant difference (P>0.05). But fetuses recovered differ significantly (P<0.05) between the two seasons mentioned. Early dry season has the highest number of pregnant ewes slaughtered and foetal losses encountered. Late wet season seems to have least number of pregnant animals slaughtered and fetuses wasted.

The month which is a finer division of the season and year reveals that, the month of December has the highest number of slaughter of pregnant cows and does. Highest number of pregnant ewes slaughtered was in the month of November but foetal wastage was highest in the month of April. See Table: 4. the distribution of general slaughter of female animals on monthly basis revealed that more cows and does were slaughtered in the month of December which were the highest. While higher numbers of ewes were slaughtered in the month of August. Table 5 shows slaughter of animals irrespective of specie which differs significantly (P<0.05) between months.

Findings on individual species contribution as source of meat in the guinea savannah zone is seriously linked to the indiscriminate slaughter of pregnant animals leading to huge foetal loss. Earlier work by (Butswat, 1994; Adewole, 1995 and Halle et al., 1997) revealed that cattle, goats, and sheep are good sources of meat in most settlements in the Guinea savannah zone. From this study, it is evidenced that goats were more favored in terms of number of livestock consumed as source of meat. This is in agreement with the findings of Jal and Padda (1984) in India that goats contribute about 35% of the meat consumed and as well the report made by Waba (2006) where about 70,408 goats were slaughtered within the period of one year against 20,450 cattle, 7,105 sheep and 2,742 cattle in Borno state. The high slaughter of goats could be due to its wholesomeness and its being relished by the local people (Uguru, 1984), its high demand, particularly for festivities and religious occasions (Adu and Lakpini, 1983) and Gefu *et al (1994).*

There seems to be some seasonal variability in the pattern of cattle and goat slaughter. This could be due to factors like feed availability and the husbandry pattern that facilitates the availability of the animals offered for sale more especially the cattle. However, contrary to the findings of Alaku and Orijuide (1991) who reported more slaughter of goats during the rainy season, more goats were slaughtered during the cold dry (early dry season) in this studies. This is in agreement with the report of Waba (2006)from Borno state that it is linked to the farmers' demand for finance to meet up with family obligations during Muslim and Christian festivities. Similar to the findings of Waba (2006), there was non-significant difference in sheep slaughtered between the four seasons. Though numerical value indicates that late wet season has the highest number of ewes slaughtered (2222.22 ± 101.9). The possible reasons for this could be attributed to farmers retaining the rams and fattening them against Muslim and Christian festivals. Similar report was made by Okunlola (1991).

The rate of foetal wastage in this study increased with increase in number of dams slaughtered. The yearly, seasonal and monthly slaughters of dams revealed that the higher the number of dams slaughtered for all species, the higher the foetal wastage. This agrees with the findings of Noakes (1979), Ojo (1992), Ataja and Uko (1994) and Hale *et al*. (1997) but it is contrary with the report of Garba *et al*. (1992) from Kano, Onu (2002) from Nsukka and Ayodele *et al.* (2003) all in Nigeria that the numbers of females slaughtered supersedes that of males. The variability of slaughter among sex of animals depends on preference among consumers in different locations. In the southern part of Nigeria, there is high demand for meat from intact un-castrated bucks (He-goat) especially among the Igbos and Bendelites. Unlike their counterparts in the south, the Hausa/ Fulanis in the north have no choice.

From all the records available based on past and current studies from different parts of Nigeria, foetal wastage as a result of indiscriminate slaughter of pregnant animals, though noted, seldom skip mentioning as one of the major limiting factors hindering the development and sustainability of the livestock industry in Nigeria and a larger portion of the sub-Saharan African countries. Time without number, researchers and other stake holders in the livestock industry have been pointing at factors like poor genetic potentials of the

indigenous breeds, long generation interval, poor management and veterinary services, incidence of disease and parasite and low plane of nutrition as being the major factors militating against the development of the livestock industry in Nigeria, not mindful of the detrimental effect of killing pregnant animals for food. Ethically, religiously and economically, slaughtering of pregnant female animals resulting to foetal wastage poses a serious threat to the ailing/dwindling economy and the poorly nourished human populace of the developing third world countries especially the sub -Saharan African countries. It is on the strength of this reason that this work was conducted to unveil the extent of damage done to the livestock sector of the Nigerian economy, its sustainability and food security.

CONCLUSION

Abattoir foetal wastage is a monster eating silently deep into the life of the livestock industry. Unless this bottle- neck is checked and eliminated, the sustainability of the livestock industry will just be an illusion.

RECOMMENDATIONS

To achieve high production and have a sustainable livestock industry capable of meeting the nutritional demands of Nigerians, remedial measures have to be taken to stop liquidation of pregnant female animals through slaughtering of pregnant animals. This will only be feasible if: The government can come out with a clear policy and legislation prohibiting the slaughter of any pregnant animal; government should empower some agencies by giving them the power to prosecute persons found slaughtering pregnant animal; government should sponsor media propaganda on the merit and demerit of killing pregnant animals to sensitize all stake holders in the livestock sector; Animal Scientists and Veterinarians should come to terms and put behind them their differences along disciplinary lines and work for the progress of this sector. These two bodies should ensure that proper antimortem inspections are conducted on every animal at the lairage before slaughter. Through this process, pregnant animals can be detected and stopped from being slaughtered. The extension agents should be used to educate the farmers and butchers on the danger posed by slaughtering pregnant animals and the benefits to be reaped thereafter if the animal is allowed to give birth to the foetus. This could be achieved through mass mobilization and enlightenment campaigns.

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Table 1: Means ± SE by season and year of slaughter of different species

Variables	n	No. COWS	No. Does	No. Ewes
Overall mean		1184 ± 140.35	1613.0 ± 122.1	1689 ± 120.4
Year		NS	*	*
2005	12	1307.7 ± 126.1^a	1697.7 ± 116.9^{ab}	1573.9 ± 129.2^{ab}
2006	12	1172 ±118.8^a	1541.2 ± 95.4^{bc}	1162.9 ± 90.2^b
2007	12	1069.6 ± 63.3^a	1457.7 ± 54.1^c	1372.4 ± 51.2^{ab}
2008	12	1185.9 ± 122.2^a	1755.7 ± 78.8^a	2646.6 ± 977.9^a
Season		* *	* *	NS
Early dry	3	1539.8 ± 123.2^a	1867.7 ± 126.9^a	1790.0 ± 144.9^a
Late dry	3	1098.0 ± 104.9^b	1654.2 ± 36.9^b	1338.8 ± 64.6^a
Early wet	3	1097.6 ± 85.2^b	1555.5 ± 62.9^{bc}	1404.8 ± 90.9^a
Late wet	3	1000.7 ± 46.7^b	1374.8 ± 64.4^c	2222.2 ± 101.9^a

Means±SE within a row bearing the same superscript do not differ significantly P<0.05
*= Significance level   n= Number

Table 2: Means ± SE by year and season of total animals slaughtered, total pregnant and foetuses recovered.

Variables	TNAS	TNPA	TNFWAS
Overall means	4236.1 ± 18.5	783.8 ± 30.7	947.5 ± 31.6
Year	*	* * *	* * *
2005	4579.4 ± 350.5^a	718.8 ± 53.4^b	886.7 ± 61.9^b
2006	3877.2 ± 261.2^b	1086.8 ± 124.9^a	1288.8 ±160.2^a
2007	3899.7 ± 143.9^b	682.1 ± 52.2^b	847.3 ± 60.4^b
2008	4588.2 ± 299.3^a	647.4 ± 51.1^b	767.3 ±60.0^b
Season	***	**	*
Early dry	5197.4 ± 383.4^a	939.6 ± 98.4^a	1083.6 ± 101.3^a
Late dry	4091.2 ± 149.9^b	862.2 ± 96.0^a	1098.7 ± 139.4^a
Early wet	4057.9 ± 169.6^b	740.4 ± 89.7^{ab}	88.6 ± 103.5^{ab}
Late wet	3597.7 ± 145.9^b	592.8 ± 44.6^b	721.2 ± 48.9^b

Means ± SE within a row bearing the same superscript do not differ significantly P<0.05
TNAS= Total number of animals slaughtered
TNPA= Total number of pregnant animals
TNFWAS= Total number of foetuses wasted
*= (P<0.05),   **= (P<0.01),   ***= (P<0.001)

Table 3: Means ± SE by Season and Year of Slaughter of pregnant Animals and Foetuses wasted

Variable	NoCSPreg	No Fwas C	No Does Preg	No FwasD	No ewePreg	No FwasE
Year	*	*	***	***	*	*
2005	213.67±24.81^{ab}	213.67±24.81^{ab}	269.33±22.60^b	364.83±28.86^b	236.25±20.94^b	308.17±23.97^b
2006	295.50±48.03^a	295.50±48.03^a	438.50±55.41^a	555.50±75.14^a	352.75±51.43^a	437.83±63.63^a
2007	170.33±19.65^b	170.33±19.65^b	258.75±25.71^b	350.67±31.90^b	253.00±22.09^b	325.50±23.49^b
2008	168.50±20.99^b	168.50±20.99^b	258.50±21.57^b	318.08±24.55^b	220.42±15.51^b	280.67±23.33^b
Season	*	*	*	**	*	*
Early dry	270.17±39.87^a	270.17±39.87^a	352.25±32.26^a	427.00±34.25^{ab}	317.17±44.96^a	385.87±45.44^a
Late dry	233.33±34.44^{ab}	223.33±34.40^{ab}	354.00±48.41^a	492.42±70.34^a	274.50±27.99^{ab}	372.92±47.23^a
Early wet	170.17±29.81^b	170.17±29.81^b	291.25±39.94^{ab}	367.25±47.66^{bc}	279.83±31.68^b	349.17±37.80^{ab}
Late wet	174.33±20.35^b	174.33±20.35^b	227.67±29.46^b	302.42±32.27^c	190.92±14.07^c	244.42±13.06^b
O. means	212.00±40.20	212.00±40.20	306.29±36.83	397.27±33.15	265.60±28.88	338.04±38.62

Means±SE within a row bearing the same superscript do not differ significantly P<0.05
*=(P<0.05),   **=(P<0.01),   ***= (P<0.001)
NoCSPreg = Number of cows pregnant, NoFwasC = Number of foetuses wasted from cow,
NoDoespreg= Number of Does pregnant, NoFwasD = Number of Foetuses wasted from Does
NoewePreg = Number of ewes pregnant, NoFwasE = Number of Foetuses wasted from ewes.
O.means = Overall means

Table 4: means ± SE by month of slaughter of pregnant animals and foetuses wasted

Variable	NoCSPreg	No Fwasted	No Does Prg	No Fwasted	No ewePreg	No Fwasted
Month	**	**	**	**	*	***
January	306.25±89.30	308.25±89.30	382.0±136.45	511.25±175.46	283.0±46.55	425.50±84.26
February	225.75±27.19	225.75±27.19	348.75±71.79	504.00±139.77	306.00±70.66	397.25±115.43
March	168.00±32.98	168.00±32.98	331.25±39.50	426.00±2.03	234.50±23.91	296.00±31.99
April	265.75±33.92	265.75±33.92	355.5±81.72	452.00±107.16	384.00±64.15	475.75±76.25
May	160.75±51.18	160.75±51.81	240.75±60.45	324.25±82.32	225.25±32.96	277.50±41.65
June	84.00±21.32	84.00±21.32	277.50±70.21	325.50±55.97	230.25±20.18	294.25±10.36
July	182.50±49.39	182.50±49.39	250.00±25.50	349.25±44.11	210.00±27.99	270.50±20.17
August	135.75±20.79	135.75±20.79	171.75±44.52	236.75±54.60	198.50±18.86	247.00±18.27
Sept.	204.75±29.26	204.75±29.26	261.25±72.99	321.25±65.15	169.2527.54	215.75±25.15
Oct.	201.75±45.47	201.75±45.47	264.25±51.22	321.50±45.37	196.50±5.22	263.75±21.55
N0v.	238.50±43.58	328.50±50.58	338.25±30.49	436.00±57.66	404.25±117.35	454.75±120.46
Dec.	370.25±91.04	370.25±91.04	454.25±43.00	523.50±26.09	350.75±26.04	438.50±16.22

*= (P<0.05),   **= (P<0.01),   ***= (P<0.001)

NoCSPreg = Number of cows pregnant, NoFwasC = Number of foetuses wasted from cow,
NoDoespreg= Number of Does pregnant, NoFwasD = Number of Foetuses wasted from Does
NoewePreg = Number of ewes pregnant, NoFwasE = Number of Foetuses wasted from ewes.
O.means = Overall means

Table 5: Means±SE by Month of slaughter of species of animals

Variable	No Cows slaughtered	No does slaughtered	No ewes slaughtered
Month	*	*	*
January	1274.3±279.2[d]	1687.8±82.9[c]	1375.3±138.6[ef]
February	979.8±123.9[h]	1624.3±49.2[d]	1343.3±29.2[f]
March	1040.0±108.6[f]	1650.5±70.8[c]	1316.0±159.7f
April	1436.5±78.3[c]	1616.8±104.3[d]	1618.5±123.2[d]
May	1041.0±77.1[f]	1491.5±160.2	1171.2±102.1[h]
June	815.3±42.3[i]	1558.3±66.2[d]	1424.8±178.5[e]
July	887.8±28.9[gh]	1410.3±169.7f	1188.0±122.1[g]
August	1339.3±85.2[g]	1304.0±111.1g	4164.0±306.1[a]
September	1075.0±96.5[e]	1411.2±43.9f	1314.5147.3[f]
October	1148.0±118.9[e]	1538.8±97.9[e]	1333.0±184.5[f]
November	1487.5±85.6[b]	1769.5±75.5[b]	1854.8±159.5[c]
December	1983.8±166.6[a]	2294.8±284.5[a]	2184.3±275.0[b]

*= Level of significance   No = Number