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International Journal of Agricultural Science and Food Technology

ISSN: 2455-815X DOI CC By

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**Dates: Received:** 30 June 2017; **Accepted:** 05 August 2017; **Published:** 07 August, 2017

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**Keywords:** Sokoto Red; Bucks; Carcass yield; Haematology; Organs; Offal components

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Research Article

# Influence of Slaughtering Ages on Carcass Characteristics, Meat Composition and Haematology of Extensively Managed Red Sokoto Bucks Slaughtered In Abeokuta Metropolis, Nigeria

## Abstract

The study was conducted to evaluate the effects of ages at slaughtering on carcass characteristics, meat composition and haematology of extensively managed Red Sokoto bucks slaughtered in Abeokuta Metropolis, South-Western Nigeria. A total of twenty four (24) healthy and intact Red Sokoto bucks were sourced from reputable outlets within the metropolis. The animals were grouped into ≤1year, 1-2years and 2-3years of age by the means of dentition before slaughtering. The animals were slaughtered according to the method of severing the jugular veins of the throat and trachea without stunning, meat samples from various parts of the bucks were taken for proximate composition, while the haematological analysis which include: Haemoglobin, Packed cell volume, red blood cell, white blood cell, mean corpuscular volume, mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration and white blood differentials was carried out. Data obtained were subjected to one-way analysis of variance using General linear model (GLM) procedures of SAS. Level of significance was taken at 5% probability, while means were separated using Duncan's Multiple Range Test of the same statistical package. Results obtained revealed that bucks within 2-3years had highest ($p<0.05$) values for carcass components such as liveweight (14.63%); Slaughter weight (93.16%); Dressed weight (92.96%); and Chest weight (2.6%), while bucks ≤1year had highest ($p<0.05$) values for Empty carcass weight (70.29%); Hot carcass weight (54.77%); and Half carcass weight (23.15%). For organs and offal components, bucks within ≤1year had significantly ($p<0.05$) highest values for all the components except for lungs weight which was highest ($p<0.05$) for bucks within 1-2years. Different primal cuts of the bucks were significantly ($p<0.05$) highest for bucks within 2-3years, except for feet weight that was highest ($p<0.05$) for bucks within ≤1year. For meat composition, meat cuts at different parts from slaughtered bucks within 2-3years had overall best nutritive value. The haematological parameters examined in the study were not significantly ($p>0.05$) affected by the age of the animals and they fell within the range for healthy animals. The result obtained from this study indicated that Red Sokoto bucks between the ages of 2-3years can be slaughtered for high carcass yield with best nutritive value and good health condition.

## Introduction

In general, the global demand for goat meat is growing [1]. This may have been because goat meat is an important part of the national diet and has a special religious significance in Nigeria. It is also an accepted red meat as part of the cultural heritage and tradition in Asia, Africa and some Mediterranean countries [2]. Moreover, goat meat is characteristically lean, thus rich in nutrients that could attract health conscious consumers. However, the product can vary according to genotype, age, gender and nutrition [3,4].

Haematological tests are important tools for evaluation of physiological and health status of farm animals and almost indispensable in organic farming, where permitted veterinary interventions are strictly regulated and limited in scope. Haematological analyses in farm animals have been extensively discussed as an essential part of clinical examination often pointing to a specific differential diagnosis or suggesting a prognosis [5,6]. This haematology have been reported by [7], to be influenced by age groups of different breeds of goats.

Small ruminant animal husbandry is the most important



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and often the only living source of livelihood of people inhabiting the forest regions or regions not suitable for crop cultivation and cattle production [8]. They can digest and utilize cellulose and hemicelluloses, household waste and other range of feedstuff that are less important to man and other animals. Small ruminant animals also feed on varieties of edible plants; they make use of non-protein nitrogen (NPN) and synthesize most of the amino acid. They perform well on good forages most especially sown pastures [9]. Goats like other ruminants, play an important role in the livelihood of rural people in communal farming systems. Indigenous goats constitute valuable genetic resources because of their ability to adapt to harsh climatic conditions, to better utilize the limited and often poor quality feed resources and their natural resistance to a range of diseases and internal parasites [10]. Nigeria indigenous goats which include West African dwarf, Sahel goats and Red Sokoto goats are more common in the rural areas, with each of the breeds been adapted to a particular geographical location. The West African dwarf goat is adapted to south-west or forest ecological zone, Sahel goat is common to the Sahelian North-West of Africa ecological zone and found in the northern fringes of the country, while the Red Sokoto goats are found in the North-Western Nigeria and are the most popular breed of goats in Nigeria due to their wide acceptance for chevon production.

The Red Sokoto and the Sahel constitute majority of goats slaughtered in Nigeria. A choice between the meats of these breeds and age-related changes in macromolecular composition of their meats will allow for competitive maximization of nutritional and economic advantage [11]. Meat is one of the most important constituents of the human diet as it provides protein, energy, vitamins and minerals. The demand for meat from goat obviously is increasing as seen in major cities of Nigeria. This probably could be as a result of it characteristics flavour or the advent of several food joints that have them as delicacy in the country. Haematological studies are a useful tool in the diagnosis of many diseases in livestock production and investigation of the extent of damages to the blood. It is important because blood is the major transport system of the body and the evaluation of the haematology parameters will provides vital information on the body response to injuries, cell damage and feed toxicity [12]. The constituent of the haematology usually reflect the physiological responsiveness of the animal to it external and internal environments which includes; feed and feeding [13]. This study therefore was designed to determine influence of ages at slaughtering on carcass characteristics, meat composition and haematology of extensively managed Red Sokoto bucks slaughtered in Abeokuta Metropolis, South-west Nigeria.

## Materials and Methods

### Study area

Abeokuta is the capital of Ogun state in south-west, Nigeria. It is located on latitude 7° 07' 03" N and longitude: 3° 18' 23" E.

### Experimental animals

A total of twenty four (24) Red Sokoto bucks were purchased from reputable sources within Abeokuta metropolis, South-Western Nigeria. The bucks were within age range of <1year, 1-2years and 2-3year. The age ranges of the animals were determined through their dentitions as described by [14]. Each of the age groups had 8 bucks i.e. 8bucks/age group. Before the bucks were purchased, health status examination of the bucks was conducted by a veterinary doctor for presence of diarrhoea on the anus; the whole body for presence of ecto-parasites like ticks, mites and lice; and overall body condition scores of the bucks among others. At the end of the examinations, only bucks found to be in good state of health were purchased for the study. The management of the bucks before purchase at the points of purchase was that the bucks were fed with cowpea haulms and stovers *ad libitum* daily after they have gone round to graze on grasses like *Panicum maximum*; *Pennisetum purpureum*; and *Andropogon* spp which are the most prevalent grass species in the city. Clean and drinkable water was also made available to the bucks unrestricted every day.

### Slaughtering location and method

Slaughtering of the bucks was carried out at the Small Ruminant Unit of the Directorate of University Farms (DUFARMS), Federal University of Agriculture, Abeokuta, Odeda Local government, Ogun State, Nigeria. The animals were starved for 12hours before slaughtering. The liveweight of the animals was determined using spring balance before slaughtering. The animals were slaughtered according to the method of severing the jugular veins of the throat and trachea without stunning as described by [15].

### Carcass evaluation

After thorough bleeding, the hair was scalded from the skin of the bucks by using warm water, evisceration was done to remove the internal organs and the following measurements were taken using Camry weighing scale of 20kg capacity, while the organs and offal weight were taken using sensitive scale of 5kg capacity. Carcass measurements and characteristics determination were carried at the Meat Science Laboratory of Animal Production and Health Department, Federal University of Agriculture, Abeokuta, Ogun State, Nigeria.

### Carcass analysis procedure

a) Slaughter weight is the weight of the animal after bleeding;

b) Dressed weight was determined after scalding of the slaughtered animal;

c) Empty carcass weight was determined after scalding and removal of internal organs;

d) Hot carcass weight was estimated by subtracting the weight of the head and the weight of the four limbs from the empty carcass weight

e) The internal organs (spleen, kidney, liver, heart, lungs, gut and empty gut) were carefully removed and weighed;



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f) The carcass was divided into two equal parts along the backbone to get the half carcass weight;

g) Also the ribs, forelimbs, hind limbs, chest and scrotum were carefully removed and measured.

### Proximate composition of meat collected

Boneless meat cuts were taken from different parts of the carcass such as loin, rib, thigh and flank, of the bucks grouped according to ages of the animals as ≤1year, 1-2years, 2-3 years. The meat samples were taken to Meat Science Laboratory of the Department of Animal Production and Health, Federal University of Agriculture, Abeokuta, Nigeria for meat composition analysis. The following parameters were determined according to the procedure of [16], Moisture Content, Dry Matter, Crude Protein (CP), Crude Fiber (CF), Crude Fat (Fat) and Ash, while the Nitrogen Free Extract (NFE) was determined using the formula:

%NFE = 100-(%Moisture+%CF+%CP+%Fat+%Ash).

### Collection of blood samples and chemical analysis

Blood samples were collected from each of the goats via the external jugular vein punctured with a 5ml gauge syringe into bottles containing the anti-coagulant (Ethylene Diamine Tetra-acetic Acid (EDTA)) for haematological analysis. Blood samples were collected before the commencement of the slaughtering procedure. The blood samples were then analysed for haematological parameters which included; Red blood cell count (RBC), white blood cell count, haemoglobin (HB), lymphocytes, monocytes, neutrophils, eosinophil basophils and Packed Cell Volume (PCV) using the method described by [17]. While the Mean Corpuscular Volume (MCV), Mean Corpuscular Haemoglobin (MCH) and Mean Corpuscular haemoglobin Concentration (MCHC) were calculated from the from the value of RBC, PVC and HB.

### Data analysis

The experimental design adopted for the experiment was completely randomized design (CRD). Data generated were subjected to one-way analysis of variance using the General linear model (GLM) procedures of Statistical Analysis System [18] to test the effects of age on the carcass characteristics, meat composition and haematological parameters. Level of significance was taken at 5% probability, while means were separated using Duncan's Multiple Range Test of the same statistical package.

## Results and Discussion

Table 1 shows characteristics of carcass component of Red Sokoto bucks slaughtered in Abeokuta metropolis. There were significant differences ($p<0.05$) between liveweights of the different age groups which corroborate the findings of [14], for South African indigenous goats slaughtered at different age groups. Carcass components such as liveweight, slaughter weight, dressed weight and chest weight of the bucks within 2-3years were significantly ($p<0.05$) highest, while empty carcass weight, hot carcass weight and half carcass weight were significantly ($p<0.05$) highest for bucks of ≤1year. The liveweight tended to increase drastically from ≤1year to 2-3years which corresponded with the findings of [19], for Matebele goats slaughtered at different stages of permanent incisors eruption. In the same vein, the liveweight was observed to be small compared to other breeds of goats of lesser or the same age like the Spanish meat-type goat, South Africa indigenous goats and Karayaka lambs reared under feedlot management [20,14,21]. The results obtained for this study are in agreement with the ones obtained by [15] for the same parameters for sheep fed varying levels of maize and cassava hay under feedlot management.

Table 2 shows characteristics of organs and offal of Red Sokoto Bucks slaughtered in Abeokuta metropolis. It was observed that slaughter age had significant effects ($p>0.05$) on most of the organs and offal weights such as: kidney, lungs, heart, spleen, scrotum and full gut of the bucks between the age groups which may be due to the fact that these organs are early maturing and may not be affected by the age of the animal which is in accordance with the findings of [15] on sheep. Bucks within ≤1years of age had highest ($p<0.05$) values for all the organs and offals examined, except for lungs weight where bucks within 1-2years recorded highest ($p<0.05$) value. The difference in gut weights among the age groups may be due to the fact that the capacity of the rumen differs with age and the

**Table 1:** Carcass Components of Red Sokoto Bucks Slaughtered in Abeokuta Metropolis.

| Parameters | ≤1year | 1-2year | 2-3year | SEM | P-value |
|---|---|---|---|---|---|
| Liveweight (kg) | 8.38$^{c}$ | 10.88$^{b}$ | 14.63$^{a}$ | 0.68 | 0.01 |
| Slaughter weight (% LW) | 88.07$^{b}$ | 88.51$^{b}$ | 93.16$^{a}$ | 6.90 | 0.01 |
| Dressed weight (% LW) | 87.95$^{b}$ | 88.42$^{b}$ | 92.96$^{a}$ | 6.80 | 0.01 |
| Empty carcass weight (% LW) | 70.29$^{a}$ | 63.69$^{ab}$ | 59.19$^{b}$ | 3.90 | 0.04 |
| Hot carcass weight (% LW) | 54.77$^{a}$ | 52.02$^{b}$ | 52.02$^{b}$ | 4.80 | 0.03 |
| Half carcass weight (% LW) | 23.15$^{a}$ | 19.67$^{b}$ | 21.94$^{ab}$ | 1.60 | 0.01 |
| Chest weight (% ECW) | 2.49$^{a}$ | 2.25$^{b}$ | 2.60$^{a}$ | 0.01 | 0.02 |

$^{abc}$ Means values in the same row with different superscripts differ significantly ($p<0.05$).
LW is *Liveweight* ECW is *Empty carcass weight*

**Table 2:** Characteristics of organs and offals of Red Sokoto Bucks slaughtered in Abeokuta metropolis.

| Parameters | ≤1years | 1-2years | 2-3years | SEM | *P*-value |
|---|---|---|---|---|---|
| Kidney weight (% DW) | 0.76$^{a}$ | 0.52$^{b}$ | 0.44$^{b}$ | 0.04 | 0.68 |
| Liver weight (% DW) | 3.09 | 2.31 | 2.11 | 0.05 | 0.14 |
| Lungs weight (% DW) | 1.99$^{a}$ | 2.14$^{a}$ | 1.63$^{b}$ | 0.04 | 0.04 |
| Heart weight (% DW) | 1.06$^{a}$ | 0.58$^{b}$ | 0.46$^{b}$ | 0.04 | 0.21 |
| Spleen weight (% DW) | 0.51$^{a}$ | 0.32$^{b}$ | 0.23$^{b}$ | 0.02 | 0.61 |
| Scrotum weight (% DW) | 2.80$^{a}$ | 1.92$^{b}$ | 1.86$^{b}$ | 0.06 | 0.15 |
| Empty gut (% DW) | 11.94 | 11.02 | 11.62 | 0.09 | 0.16 |
| Full-gut (% DW) | 28.63$^{a}$ | 26.40$^{ab}$ | 20.07$^{b}$ | 0.11 | 0.04 |

$^{ab}$ Means values in the same row with different superscripts differ significantly ($p<0.05$).
DW is *Dressed weight*



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ability of the animal to consume forages and other household waste. Likewise, values obtained for the lungs weight among the age groups contradict the result of [19] for Matebele goats slaughtered at different stages of permanent incisors eruption and [22] for West Africa Dwarf goats fed cassava peel–cassava leaf meal based diets. This may be due to the fact that apart from age, the carcass characteristics can also be affected by breed of the animal. The liver and empty gut weights were not significantly different ($p>0.05$) across the age groups which may be an indication of their early maturing in the life cycle of the animals.

Characteristics of primal cuts of Red Sokoto Buck slaughtered in Abeokuta metropolis is presented in table 3. The primal cuts such as head weight, hind-leg, fore-leg, rib weight and feet weights were significantly influenced ($p<0.05$) by age groups of the bucks. As the age at slaughter increases, the primal parts also increase. Primal cuts of bucks within 2-3years were highest ($p<0.05$) except for the feet weight which was highest ($p<0.05$) for bucks within ≤1year age group. Neck weight did not vary significantly ($p>0.05$) as the age at slaughter increases. This result is in agreement with the report of [15].

Table 4 shows the effect of age on the meat composition of Red Sokoto goats slaughtered in Abeokuta metropolis. The table presents meat composition from different parts of the carcass which include; thigh, loin, rib and flank. The dry matter from all the parts was significantly different ($p<0.05$) across all the age groups apart from the flank cut. The dry matter content was high within the age group of 2-3years for all parts examined except for the flank that had the highest dry matter content in the age group of ≤1year which is in agreement with [23]. The crude protein from the thigh cut was not significantly different ($p>0.05$) across the age groups while the crude protein from the rib, loin and flank were significantly different ($p<0.05$) across the age groups which is in agreement with the report of [24]. The crude fat was significantly different ($p<0.05$) for all the parts examined across the different age groups with the lowest value (0.36%) found in age group 1-2years from the loin and the highest value (0.84%) found in age group 1-2years. Total ash from the loin was not significantly different ($p>0.05$) across the age groups, while the total ash from thigh, rib and flank cuts were significantly different ($p<0.05$) across the age groups. 2-3years age group had 1.15% from the thigh cut while lower value of 0.65% was found in the thigh. The NFE was also found to be significantly different ($p<0.05$) across the age groups for all the cuts.

Table 5 shows haematological analysis of blood collected from Red Sokoto bucks with respect to packed cell volume (PCV), haemoglobin concentration (Hb), red blood cell counts (RBC), white blood cell differentials, Mean Corpuscular Volume (MCV), Mean Corpuscular Haemoglobin (MCH) and Mean Corpuscular haemoglobin Concentration (MCHC). All the haematological indices examined in this present study were not significantly ($p>0.05$) influenced by age of the bucks at slaughter. This is an indication that the bucks were in good state of health before slaughtering. The PCV is the measure

**Table 3:** Characteristics of primal cuts of Red Sokoto Buck slaughtered in Abeokuta metropolis.

| Parameters | ≤1year | 1-2years | 2-3years | SEM | P-value |
|---|---|---|---|---|---|
| Head weight (%ECW) | 13.24$^{b}$ | 11.98$^{a}$ | 12.93$^{a}$ | 0.08 | 0.01 |
| Hind-leg (kg) | 18.51$^{b}$ | 17.75$^{b}$ | 19.40$^{a}$ | 0.07 | 0.01 |
| Fore-leg (kg) | 17.32$^{b}$ | 16.30$^{b}$ | 19.63$^{a}$ | 0.09 | 0.01 |
| Neck weight (g) | 6.05 | 6.00 | 5.70 | 0.03 | 0.15 |
| Rib weight (kg) | 18.00$^{b}$ | 17.60$^{b}$ | 18.82$^{a}$ | 0.07 | 0.04 |
| Feet weight (g) | 6.31$^{a}$ | 6.27$^{ab}$ | 5.66$^{b}$ | 0.02 | 0.03 |

$^{ab}$ Means values in the same row with different superscripts differ significantly ($p<0.05$).
ECW is *Empty carcass weight*

**Table 4:** Effect of Age on Meat composition from different parts of Red Sokoto buck carcass.

| Parameters | | <1year | 1-2years | 2-3years | SEM | P. value |
|---|---|---|---|---|---|---|
| Dry matter | Thigh | 23.64$^{b}$ | 22.31$^{c}$ | 25.87$^{a}$ | 0.53 | 0.000 |
| | Loin | 26.25$^{a}$ | 24.85$^{b}$ | 26.83$^{a}$ | 0.33 | 0.006 |
| | Rib | 21.67$^{a}$ | 23.37$^{b}$ | 24.60$^{a}$ | 0.43 | 0.000 |
| | Flank | 24.40$^{a}$ | 23.85$^{b}$ | 23.47$^{b}$ | 0.15 | 0.011 |
| Crude Protein | Thigh | 18.98 | 19.00 | 19.38 | 0.19 | 0.695 |
| | Loin | 18.39$^{c}$ | 20.01$^{a}$ | 19.13$^{b}$ | 0.25 | 0.001 |
| | Rib | 18.28$^{c}$ | 19.41$^{a}$ | 20.43$^{b}$ | 0.32 | 0.001 |
| | Flank | 19.06$^{b}$ | 20.27$^{a}$ | 19.31$^{b}$ | 0.19 | 0.000 |
| Crude Fat | Thigh | 0.49$^{b}$ | 0.52$^{b}$ | 0.78$^{a}$ | 0.05 | 0.015 |
| | Loin | 0.48$^{a}$ | 0.36$^{b}$ | 0.56$^{a}$ | 0.04 | 0.068 |
| | Rib | 0.49$^{ab}$ | 0.69$^{a}$ | 0.44$^{c}$ | 0.49 | 0.059 |
| | Flank | 0.56$^{b}$ | 0.84$^{a}$ | 0.58$^{b}$ | 0.05 | 0.021 |
| Total Ash | Thigh | 0.65$^{b}$ | 1.03$^{a}$ | 1.15$^{a}$ | 0.08 | 0.001 |
| | Loin | 0.92 | 0.95 | 1.03 | 0.03 | 0.324 |
| | Rib | 1.07$^{b}$ | 1.34$^{a}$ | 1.35$^{a}$ | 0.05 | 0.001 |
| | Flank | 1.15$^{b}$ | 1.27$^{a}$ | 1.13$^{b}$ | 0.03 | 0.037 |
| NFE | Thigh | 3.52$^{a}$ | 1.75$^{b}$ | 4.56$^{a}$ | 0.48 | 0.020 |
| | Loin | 6.68$^{a}$ | 3.12c | 6.21$^{b}$ | 0.56 | 0.000 |
| | Rib | 1.28$^{b}$ | 0.09c | 2.37$^{a}$ | 0.34 | 0.001 |
| | Flank | 3.09$^{a}$ | 0.84$^{c}$ | 1.92$^{b}$ | 0.33 | 0.000 |
| | Flank | 3.09$^{a}$ | 0.84$^{c}$ | 1.92$^{b}$ | 0.33 | 0.000 |

**Table 5:** Haematological analysis of blood collected from Red Sokoto bucks slaughtered in Abeokuta metropolis.

| | Age | | | *Normal | | |
|---|---|---|---|---|---|---|
| Parameters | ≤1year | 1-2years | 2-3years | Range | SEM | P-value |
| PCV (%) | 31.25 | 29.75 | 31.25 | 21- 35 | 1.69 | 0.93 |
| Haemoglobin(g/dl) | 8.88 | 8.30 | 8.85 | 7 – 15 | 0.34 | 0.77 |
| RBC($*10^{12}$/l) | 14.33 | 13.58 | 14.38 | 9.2 -13.5 | 0.73 | 0.90 |
| MCV (fl) | 20.00 | 21.85 | 21.73 | 16–25 | 0.60 | 0.40 |
| MCH (pg) | 6.20 | 6.20 | 6.23 | 5.2–8.0 | 0.11 | 0.99 |
| MCHC(g/dl) | 28.63 | 28.35 | 28.50 | 32 - 34.6 | 0.54 | 0.98 |
| $WBC_s$ Diff. ($\times10^{9}$/l) | | | | | | |
| Lymphocytes (%) | 62.00 | 60.50 | 63.50 | 47 – 82 | 1.61 | 0.79 |
| Neutrophils (%) | 36.75 | 36.00 | 33.75 | 17 – 52 | 1.49 | 0.74 |
| Monocytes (%) | 1.00 | 1.50 | 1.75 | 0 – 1 | 0.23 | 0.44 |
| Eosinophils (%) | 025 | 0.50 | 0.75 | 1 – 7 | 0.20 | 0.62 |

PCV is Packed cell volume; RBC is Red blood cells; MCV is Mean corpuscular volume; MCH is Mean corpuscular haemoglobin; MCHC is Mean corpuscular haemoglobin concentration; WBC is White blood cells; Diff is Differentials.



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of the ratio of the volume occupied by the red blood cells to the volume of the whole blood in a sample of capillary or arterial blood. The result of the analysis showed that PCV ranged from 29.75 to 31.2%, this is within normal ranges of 21 to 35% [25]. The haemoglobin content in g/dl ranged from 8.30 to 8.88 which was within the normal ranges of 7.0 to 15.0 reported by [25]. The aim of estimating the Hb content is to assess the oxygen carrying capacity of the goats' circulatory system. Having a low oxygen carrying capacity indicates that such animal can easily succumb to stress factors that may lead to respiratory problems, while those with high level of Hb content can be regarded as having high level of oxygen capacity and therefore, likely to withstand respiratory stress [26].

The RBC value obtained in this study ranged from 13.58 -14.38×$10^6$ /ul, which was slightly above the normal ranges of 9.2-13.5×$10^6$/ul [25]. Since it is the red blood cells that carry the respiratory pigments (haemoglobin), a decrease in the quantity of the circulating RBC imply a decrease in the quantity of haemoglobin and thus decrease in the oxygen carrying capacity of the animal while increase in quantity indicate that the animal is going through some level of stress. The result obtained in this study may be as result of stress or the goats are just recovering from a particular illness. All the values of the $WBC_s$ differentials obtained from this study falls within the normal range except for monocytes which was above the range of 0-1% reported by [25]. In the vein, the value of the Mean Corpuscular Volume (MCV), Mean Corpuscular Haemoglobin (MCH) and Mean Corpuscular haemoglobin Concentration (MCHC) were all not significantly affected by the age of the animal but fall within the normal range for healthy goats [25,27,28].

## Conclusion

It could be concluded from the results obtained from this study that carcass characteristics, meat composition and haematology of Red Sokoto bucks are affected by age. Red Sokoto bucks between the ages of 2-3years can be slaughtered for high carcass yield with best nutritive value and good health condition. Bucks within 2-3years had overall highest ($p<0.05$) values for carcass components such as liveweight (14.63%); Slaughter weight (93.16%); Dressed weight (92.96%); and Chest weight (2.6%), while bucks within ≤1year had highest ($p<0.05$) values for Empty carcass weight (70.29%); Hot carcass weight (54.77%); and Half carcass weight (23.15%). Similarly, slaughtered bucks within 2-3years had overall highest values for primal cuts such as the Head weight, Hind-leg, Fore-leg, and Rib weight. For organs and offal components, bucks within ≤1year had overall highest values for all the components except for lungs weight which was highest for bucks within 1-2years. For meat composition, meat cuts at different parts from slaughtered bucks within 2-3years had overall best nutritive value. Age of the bucks had no effect on the haematology of the animals but were within the normal range reported for healthy goats.

**Statement of Animal Rights**: All applicable International, National, and Institutional guidelines for the care and use of animals were followed in the conduct of this research.

**Informed Consent**: Informed consent was obtained from all individual participants included in this study.

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**Citation:** Amosu SD, Oderinwale OA, Jolaosho OO, Sanusi GO, Oluwatosin BO (2017) Influence of Slaughtering Ages on Carcass Characteristics, Meat Composition and Heamatology of Extensively Managed Red Sokoto Bucks Slaughtered In Abeokuta Metropolis, Nigeria. Int J Agric Sc Food Technol 3(3): 049-054. DOI: http://doi.org/10.17352/2455-815X.000022

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