Birth and Weaning Weight of Sudanese Desert Goat as Affected by Management System

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Abstract – The study was conducted in and around EL Obeid city to assess commonly birth weight and weaning weight of desert goats during early lactation under farmers’ management. A total of 40 goat’s owner’s farmer from urban and 40 from peri-urban were selected for the study. Structured questionnaire, secondary data sources and field observations were employed to generate data. The results revealed that the kids born in peri-urban system have higher (P<0.05) birth weight and weaning weight compared with kids born in urban system.

Keywords – Desert Goat, Management, Birth Weight, Body Weight

I. INTRODUCTION

Goat is one of the major livestock of the subcontinent in Sudan. They live mostly on grazing poor natural pastures in arid and semi-arid areas with no supplementary feeding. They live as scavengers in the streets of towns and cities requiring minimum care and attention despite the fact that they play a very important role in the rural economy and provide many poor urban and rural families with milk and meat (Khadiga et al., 2008).

The Sudanese Desert goats are reared under traditional agro-pastoral and pastoral systems in arid and semi-arid areas of western Sudan particularly in Kordofan region where they are well adapted to the local environmental conditions. They are considered as an important integral component in most traditional production systems.

Growth traits are important factors influencing profitability for any goat meat producing enterprise. Rapid growth during early life can minimize the cost of rearing and thus provide more profit to the farmer (Htoo et al., 2015). Reproductive efficiency in does is characterized by the individual and compound parameters. High reproduction rates are essential for profit in meat goat production; therefore an assessment of the general reproductive characteristics of native breeds is necessary prior to developing strategies aimed at improving meat supplies (Alexandre et al., 2000). Management practice by farmers influences the reproductive performance of all animals, and was responsible for a decrease in the overall productivity of goats and sheep (Alexandra et al., 2001). Improvement of goats' management is an effective tool to alleviate poverty and improve food security in rural areas. Good management and care of female kids under intensive system allow them early attainment of puberty. Therefore this work was signed to study the effect of management practice by farmer on some reproductive performance of Sudanese desert goats in North Kordofan state, Sudan.

II. MATERIALS AND METHODS

This study was conducted in and around EL Obeid city (latitude 13° 20’ N, longitude 30° 15’ E, 570 m above sea level). The annual rain fall is 280 – 450 mm in the months from July to September, and the temperature is averaging 37°C in the summer and 18°C in the winter. The pastoralists in the area raise cattle, goats and sheep, moving all the year searching for ranges, fodder and water (El Obeid Meteorological Station, 2015).

2-1. Data collection

For this study a total of 80 goat owners, of which 40 were from urban and the remaining 40 were from peri-urban goat systems were purposively selected. A structured questionnaire was prepared and pre-tested for its applicability before its administration. Interviews were carried out at the farmer’s home to enable counterchecking of the farmer’s response with respect to the management practices.

2-2. Statistical analysis

The collected data was analyzed using the General Linear Model procedures of the Statistical Package for the Social Sciences, software package (SPSS, 1999). Mean comparison was done using the Least Significant Difference (LSD) for parameters with significant difference. Differences were considered statistically significant at 5% level of significant. Response variable in the analysis were birth weight and weight at weaning.

III. RESULTS

Effect of systems of production on body weight at birth

Birth weight of kids was significantly by management system are shown in Table (1). The kids born to peri-urban system had high significant (P<0.05) birth weight compared to kids in reared in urban system.

| Table 1. Effect of management practice on birth weight of Sudanese desert goat |
|-------------------------|------------------|
| Production systems      | Birth wt (kg)    |
| Urban                   | 1.92±0.44ab     |
| Peri-urban              | 2.13±0.64ab     |

ab Values in the same column followed with different letters are significant at P<0.05

Effect of systems of production on body weight at weaning and weaning time

Weaning weight of kids data as affected by management type are shown in Table (2). Peri-urban system kids had high weaning weight and long time for weaning compared.
to kids in reared in urban system, thus there was significant (P<0.05) differences were found between two systems.

<table>
<thead>
<tr>
<th>Production systems</th>
<th>Weaning wt (kg)</th>
<th>Time of weaning/month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>5.73±0.85b</td>
<td>3.29±1.23</td>
</tr>
<tr>
<td>Peri-urban</td>
<td>6.63±0.90a</td>
<td>3.63±0.85</td>
</tr>
</tbody>
</table>

### IV. DISCUSSION

Information on goat kid growth rate is important for breeding and production and sustainability of any goat enterprise depends upon the successful raising of kids for replacement stock. Several studies, have shown that among the factors that affect goat kid growth rate are sex, type of birth, parity order, plane of nutrition, season of kidding and husbandry practice (Berhane and Eik, 2006). In study the management practice had significant affect on birth weight this agree with results of Gbangboche et al (2006), and lower of the results of James et al., (2011) who studied the birth weight of kids under intensive management system (1.55±0.37kg) and extensive management system (1.09±0.30kg). The high birth weight in peri-urban system can be due to that animal had ability to graze a wide range land looking for good pasture with highly nutritive value compared with goat reared under urban system which just depends on scavenging with or without supplementation of diets. In tropical areas grazing a lone might not be sufficient for optimizing live weight gain, therefore if scavenging can be supplemented with minimum level of concentrates as an additional source of dietary energy or protein than the level of production can be increased at minimum cost (Kabir et al., 2002).

The weaning weight at 90 days of age in both groups (urban & peri-urban) was significantly (p<0.05) effected by management practice and found to be heavier for peri-urban compared with urban group. This result in lines with Ogebe et al., (1995) and Chowdhury et al (2002) who said that the heavier birth weight is indication of better nutrition and health which increase of growth rate of the kid. James et al., (2011) studied the weaning weight under intensive management system was 5.47±0.88kg while under extensive management system was 4.71±0.77kg.

Weaning age of kids vary widely because of the diversity of feeding and management practices and the various genotypes of kids. Weaning time, as it is considered in this paper, does not conform to the definition of the term, since weaning was allowed to occur naturally. Under improved management conditions, weaning is accomplished at more than 90 days. In addition, weaning at different ages would result in different types of weaning stress, which would affect subsequent growth and health of lambs. It is necessary to find the optimal weaning age for the specific lamb under a specific feeding and management condition (Chai et al., 2015).

The nutrition factor likely to be the cause for observed variability between two systems of goat production, as animal in peri-urban system had good nutrition which reflected in their high body weight at weaning. Weaning weights are crucial and indicate the milking ability of the herds as well as the growth potential of the kids (Bushara et al., 2015).

### V. CONCLUSIONS

It could be concluded that management practice by farmer that positive effect on birth weight and subsequent growth rate of kids.

### REFERENCES


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