

## EFFECT OF AGE AT CASTRATION AND TYPE OF BIRTH ON WEIGHT GAIN OF SAVANNA BROWN GOAT.

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### ABSTRACT

A 10 week study was conducted on twenty four (24) Savanna brown goats (kids) to investigate the effect of castration and type of birth on weight gain of savanna Brown goats. The goats were allocated to 4 treatments ( $T_1 - T_4$ ). Each treatment had 4 replicates comprising of 1 kid per replicate. The treatments were castration at 4 weeks ( $T_1$ ), at 6 weeks ( $T_2$ ), at 8 weeks ( $T_3$ ), and non-castrate ( $T_4$ ). The animals were managed semi-intensively and were supplemented with concentrate, and water was provided ad-libitum. Castration and type of birth (single birth had significant effect ( $p < 0.05$ ) on the body weight than those on the control while the twin birth had no significant difference ( $P > 0.05$ ). Therefore, it was concluded that if castration is desired then late castration is recommended and goats of single birth could be castrated: as goats of 6 (6.45Kg) and 8 weeks (6.61Kg) gave better performance.

### INTRODUCTION

Goat population in Nigeria was estimated to be 34.5 million (Rim 1991). Goat is an important livestock species in Nigeria and other developing countries, because it provides a good source of meat, milk, fiber and skin. It is popularly known as "poor man's cow" (Machugh and Bradly 2001). Goat play important role in ensuring livelihood security to the million of small and marginal farmers, landless labourers and rural folk. Demand for goat meat increases in Nigeria as the population of divers ethnic group increases. Goat meat is an important nutrient source particularly for the people on developing regions, which are situated mainly in the tropics (Macrea *et al.*, 1997). Castration is one of the management activities practiced in different parts of the country as castration in goats has an advantage of eliminating the strong male odour present in bucks. Castration improves meat juiciness and tenderness score, and results in relatively high flavor. Castration at a younger age is rarely practiced, which may become necessary when superior bucks are being used for breeding improvement programs. It may be more convenient for smallholders to castrate young bucks not required for breeding than to keep them from the does until they are sold. Early castration has much beneficial effect on carcass quality especially on marbling degree than has latter castration. Male kids not required for breeding should preferably be castrated at early ages, both to get good quality carcass and to prevent unwanted mating (Adami, 2008). Triple born kids were found heavier at four months of age than twins and singles (Sarma *et al.* 1981). Contrary to this finding, singles were observed to be heavier than twin and triplet (Akpan, 2000). The potential for growth, weight gain and feed utilization in Savanna Brown goat castrates, semi-intensively raised have not been fully documented. Therefore, the present study was aimed to study the effect of castration at different ages and type of birth on weight gain of savanna Brown goat.

### MATERIALS AND METHODS

This study was conducted at the Teaching and Research farm of the School of Agriculture and Agriculture Technology of Federal University of Technology, Minna, Niger State of Nigeria. Twenty (24) Savanna Brown goats (kids) were randomly allocated to four treatments ( $T_1 - T_4$ ).  $T_1$  comprised of goats castrated at 4 weeks,  $T_2$  castrates at 6 weeks,  $T_3$  were castrates at 8 weeks and  $T_4$  were non-castrates. The goats were provided with supplementary feed (concentrates and bean haulms) before and after grazing daily. The goats were routinely treated for internal and external parasites during the course of the study. The birth weight of the animals was taken within 72 hours of birth and subsequently body weight and other body parameters were taken weekly using weighing scale and flexible measuring tape respectively. Each animal was identified with a number tag. Open castration method was used.

### RESULTS AND DISCUSSION

Mean body weight at respective ages and group of Savanna Brown goats at different ages are presented in Table 1. Single castrates shows better performance over the twin castrates signifying the effect of type of birth. This is in line with the findings of Akpan (2000) who observed that singles were heavier than twins and triplets. Similarly castrates at 8 weeks obtained the highest mean values (6.61) in both single and unselected means. This can be attributed to the effect of age at castration. Phad *et al.* (1995) observed a significant different ( $P < 0.05$ ) between castrates and control in favour of castrates in terms of dressing and dressing percentage of the carcass. Tsado and Adama (2003) reported that single non-castrates performed better than single castrates and twins. Although there is no significant difference ( $P > 0.05$ ) between the twin group, Twin non-castrates (control) obtained the highest (5.85kg) mean values. In line with the findings, Solomon *et al.* (1991) reported that castration had no significant

effect ( $P > 0.05$ ) on body weight and that the entire goats had better over all average daily gain than castrates.

Singles castrated at 6 weeks were observed to have recorded the highest mean value (7.89kg). This is in agreement with the findings of Ruvuna (1993) who observed that singles were significantly heavier ( $P < 0.01$ ) than twins and had average higher daily weight gain at weaning (62g v 58g) than twins. The Non-castrate were observed with higher body weight (5.85kg) among the twin group. This is in agreement with Bhushan and Ghei (1994) who reported that German fawn breed of goats grew faster than castrates and live weight at slaughter was higher in controls (uncastrated) than the castrates.

**CONCLUSION AND RECOMMENDATION**

Age at castration had a significant effect ( $P < 0.05$ ) on body weight gain as was observed between the treatments in both unselected and single birth mean values. Castration at 6 weeks (single birth) could be recommended for Savanna Brown goats for optimum growth as shown in this study.

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Table 1: Mean body weight of goats (kid) castrated at 4, 6, 8 weeks and Non castrates of savanna brown kids.

Parameter	Treatments			
	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>
Mean body weight (unselected)	5.69 <sup>ab</sup>	6.45 <sup>bc</sup>	6.61 <sup>c</sup>	5.37 <sup>a</sup>
Mean body weight (singles)	5.74 <sup>a</sup>	7.89 <sup>b</sup>	7.47 <sup>b</sup>	5.06 <sup>a</sup>
Mean body weight (twins)	5.67 <sup>a</sup>	5.73 <sup>a</sup>	5.18 <sup>a</sup>	5.85 <sup>a</sup>

abc- means in the same row with different letters are significantly different (p < 0.05)  
 Key: T<sub>1</sub> - castrates at 4 weeks, T<sub>2</sub> - castrates at 6 weeks, T<sub>3</sub> - castrates at 8 weeks, T<sub>4</sub> - Non-castrates

**Table 2**  
 Composition of Experimental Diet

Ingredient	Percentage
Maize grain	40.5%
Maize offal	46.5%
Soya bean meal	4%
Premix	0.5%
Salt	0.5%
Bone meal	2%
<b>Total</b>	<b>100%</b>