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*Short Communications*

# CARCASS CHARACTERISTICS OF MALE DORPER SHEEP WEANED AT DIFFERENT AGES

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## SUMMARY

The aim of this study was to assess the carcass characteristic of male Dorper sheep weaned at three different ages. A total of 27 newborn male Dorper sheep (average body weight, 3.06 ± 0.74 kg) were selected randomly and divided into three groups. Animals in group 1 (n=9) were weaned at day 30, while animals in group 2 (n=9) and 3 (n=9) were weaned at day 60 and 90, respectively. Group 3 was acted as a control group. Creep feed and grower feed were given to the animals based on 3.5% of body weight. There were no significant differences (P<0.05) between treatment groups in dressing percentage and meat to bone ratio. Therefore, it was concluded that the age of weaning does not influence the carcass characteristics of male Dorper sheep.

*Keywords: Dorper sheep, different weaning age, carcass weight, dressing percentage, meat to bone ratio.*

## INTRODUCTION

Local mutton consumption increased by almost 30% from 19,309 tonne in 2009 to 43,703 tonnes in 2014. However, the increased mutton consumption was not reflected in the local population of sheep which only increased by about 3% from 136,285 heads in 2009 to 139,670 heads in 2014 (Department of Veterinary Services, 2015). The increase in meat demand was partially supplemented by the importation of live sheep, whereby 34,554 heads of live sheep were imported in 2014 compared to 20,187 in 2009.

Several years ago, improved breed of sheep have been introduced to Malaysia to enhance local sheep production. These include Dorset, Wiltshire horn, Suffolk, Bali-Bali, Barbados Black Belly and St. Ines whereby crossbreeding programme were carried-out. In 2006, Dorper sheep from South Africa were imported to Malaysia for evaluation as terminal meat sire breed by crossbreeding to ewes of local breed (Malin).

Dorper is a sheep breed suitable for the Malaysian environment due to its hardiness and adaptability (Marais and Schoeman, 1990) as well as its fast-growth for meat production. Early weaning offers many advantages such as allowing ewes to return to breeding condition earlier thus, accelerating lambing programs. Therefore, this study aim to assess the carcass characteristic of male Dorper sheep weaned at three different ages.

## MATERIALS AND METHODS

### *Sampling groups*

A total of 27 newborn Dorper lambs (average body weight, 3.06 ±0.74kg) were randomly divided into three equal (n=9) experimental groups namely, Group 1, Group 2 and Group 3, weaned at day 30, 60 and 90, respectively. Creep and grower feeds were fed at 3.5% of their mean body weight before and after weaning respectively. Three animals from each group were slaughtered at 9 months of age for carcass analysis.

### *Statistical analysis*

The data collected was analysed using SPSS statistical software program 16.0 (SPSS Inc., Chicago, IL, USA). The groups were compared using analysis of variance (ANOVA) and the differences between means were tested by Turkey's test at P<0.05.

## RESULTS

The live weight before slaughter and the meat to bone ratio were not significantly different between the treatment groups (Table 1). Although not significantly different, lambs weaned at 90 days (Group 3) were 2.8 kg heavier than those weaned at 30 days (Group 1). In general, all carcass parameters were not different between the three treatment groups (Table 1).

## DISCUSSION

Carcass yield is an important element in meat production from an animal. Some of the factors effecting carcass yield are age, breed, nutrition, body weight and physiological condition (Visser *et al.,* 2004). The time of weaning is particularly important in lambs performance, since it affects feed consumption, growth performance and carcass characteristics of lambs. Based on this results, even though group 3 showed greatest live weight as compared to other groups but greatest carcass weight and carcass length were recorded in group 2. The heavier live weight could be attributed to the fat deposition as found in the lambs in group 3. Fat is a late maturing body tissue, thus achieving its highest proportions at higher body weights (Kadim *et al.,* 2003). The current results are also

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**Table 1: Carcass yield of Dorper at 9 months of age**

| Parameter | Treatments | | |
|---|---|---|---|
| | Group 1 | Group 2 | Group 3 |
| Live weight, kg | 42.17±8.01[a] | 43.83±3.33[a] | 45.00±6.25[a] |
| Carcass weight, kg | 19.17±4.65[a] | 20.63±4.37[a] | 19.83±2.84[a] |
| Carcass length, cm | 82.83±6.05[a] | 84.00±1.00[a] | 83.33±10.87[a] |
| Dressing, % | 45.14±3.61[a] | 46.79±6.98[a] | 44.16±3.23[a] |
| Meat, kg | 7.18±1.52[a] | 7.94±1.39[a] | 7.65±1.27[a] |
| Bone, kg | 1.82±0.37[a] | 1.86±0.23[a] | 1.64±0.33[a] |
| Meat to bone ratio | 3.94±0.01[a] | 4.27±0.06[a] | 4.66±0.01[a] |

Note:
G1:Group 1 (weaned at 30 days), G2:Group 2 (weaned at 60 days), G3:Group 3 (control - weaned at 90 days).

*Means with different superscripts differ significantly (P<0.05)*

**(Mean±SD).**

in agreement with Coates and Penning (2000), that late maturing animals recorded higher live weight than those early maturing animals at the same energy accretion.

Dressing percentage (DP) is an important tool for evaluating carcass merit between the sheep breeds (Ruvuna *et al*., 1992). According to Priolo *et al.,* (2002), the difference in DP between intensively and extensively raised lambs can be ascribed to the fully developed digestive tract of lambs reared in extensive conditions. As discussed, digestive tract of group 3 was considered fully developed due to late weaned. In the current study, the dressing percentage was 44.16% to 46.78%, within the range reported by Noraida *et al.,* (2013), except for the meat to bone ratio, which was higher. Although group 3 was heavier in live weight at slaughter, highest DP was found in group 2. The fully developed digestive tract along with the thin subcutaneous fat layer found in extensively produced lambs, would lead to a lower DP when compared to intensively produced lambs (Borton *et al.,* 2005).

## CONCLUSION

The present study shown that the age of weaning does not influence the carcass characteristics of male Dorper sheep. Therefore, wean Dorper lambs as earlier as 60 days can be considered as an approach to maximize the yield of carcass compared to the conventional period of 90 days of age, which is being practiced in Malaysia and other countries. With this new knowledge, ewe also can maximize the ability of lambing so that more animals can be produced every year to meet the market demand.

## CONFLICT OF INTEREST

All authors declare no conflict of interest. There are no directly related manuscripts or abstracts, published or unpublished, by any authors of this paper.

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