EAAP 2009

Relative growth of body fat depots and carcass composition in Churra da Terra Quente ewes with different body condition score

Silva, S.R., Guedes, C., Santos, V., Mena, E., Lourenço, A., Gomes, M. Azevedo, J. and A. S. Santos
CECAV, UTAD, PO Box 1013, 5001 – 801 Vila Real, Portugal
(e-mail: ssilva@utad.pt)

INTRODUCTION

The autochthonous Churra da Terra Quente (CTQ) sheep breed (Figure 1) is reared in Northeast of Portugal under extensive production systems. These systems frequently involve expressive body composition changes due to storing and mobilization of body reserves.

OBJECTIVES

The objectives of this study were to examine carcass composition variation and to understand fat depots distribution in ewes with different Body Condition Score (BCS).

Figure 1. Churra da Terra Quente ewe in extensive production system

RESULTS

Both, carcass and internal fat, show an important variation with the increase of BCS. For muscle the variation observed was low. This finding reflects the variation of BW and clearly show that fat is the most variable tissue. Variation of carcass (subcutaneous and intermuscular) and internal fat depots (omental, mesenteric and perirenal&pelvic) with BCS and the allometric value for each depot are shown in Figure 3. All fat depots except mesenteric fat, exhibit a large variation with BCS. The allometric analysis show that all fat depots, except mesenteric fat, have a late development ($b>1$, $P<0.05$).

MATERIAL AND METHODS

- Forty seven non-lactating and non-pregnant CTQ ewes with 42.3±7.5kg body weight (BW) and a BCS range from 1.5 to 4.5 were used.
- After slaughter internal fat depots (omental, mesenteric and perirenal&pelvic) were obtained.
- Carcasses were entirely dissected into muscle, subcutaneous fat, intermuscular fat and bone.
- Allometric coefficients of the different fat depots relative to BW or total fat weight were established using the Huxley model.

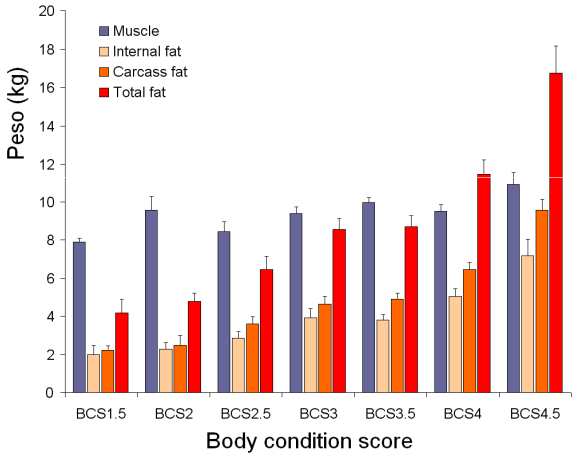

Figure 2. Muscle, internal fat, carcass fat and total fat variation with BCS

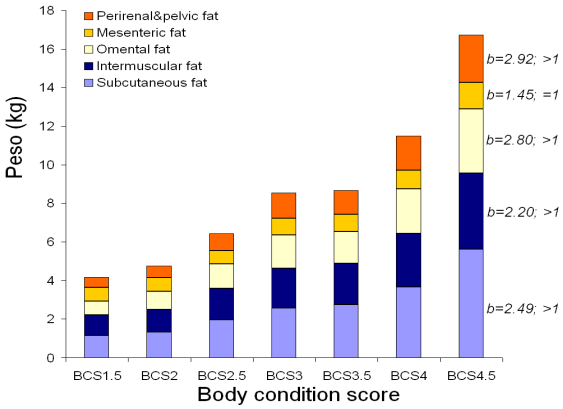

Figure 3. Fat depots variation with BCS and allometric b value relative to BW for each depot

CONCLUSIONS

This study indicates that fat depots show important variations with BCS. All fat depots exhibit an allometric b value higher to 1 with the only exception of mesenteric depot.