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COMPARATIVE STUDIES ON SLAUGHTER PERFORMANCE AND SKELETAL MUSCLE FIBRE TYPE OF ALXA GOBI CAMEL AND DESERT CAMEL

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ABSTRACT

Alxa Gobi camel has higher meat production than desert camel. In order to explore the difference of meat production between Gobi camel and desert the present study, their slaughter performance, skeletal muscle fibre type and histological characteristics were studied. In this paper, out of 36 camels, each 6 camels were randomly taken from 3 age groups, 6, 8 and 10-tooth-age group from the Alxa Gobi camel and desert camel to measure the slaughter performance. The triceps muscle of arm, musculus longissimus dorsi and biceps femoris were taken and the tissue slice was stained with ATP enzyme. LAS 4.0 softwwere was used to analyse the image and determine the percentage of MyHC I, MyHC II a and MyHC II b muscle fibres, and SAS softwwere was used to do variance analysis. The results showed that the live weight, carcass weight and net meat weight of Gobi camel were about 60 kg, 80 kg and 90 kg, respectively. There were significant differences ($p < 0.01$; $p < 0.05$). MyHC II b muscle fibre was the main component of two camels' muscle fibres, the percentage of MyHC II b muscle fibre of the Gobi camel (39.6%) was significantly lower than that of the desert camel (48.7%) ($p < 0.05$); the fibre diameter and the cross sectional area of MyHC II b of the Gobi camel (115 μm, 8704 μm²) were significant lower than that of the desert camel (162 μm, 16743 μm²) ($p < 0.01$), and the fibre density (124 n/μm²) was significant higher than that of the desert camel (48 n/μm²) ($p < 0.01$). The meat production of Gobi camel was higher than that of the desert camel, and the difference in fibre diameter and density was related to the difference of muscle fibre composition. MyHC II b muscle fibre has the greatest effect on meat production. The content of muscle fibre in Gobi camel was about 40% and its diameter was the smallest and the density was the largest. MyHC II b muscle fibre in skeletal muscle fibre of desert camel accounts for about 50% and this muscle fibre has the larger diameter and its density was the smallest. Therefore, the meat production of desert camel was significantly lower than that of Gobi camel, which was related to its the highest MyHC II b muscle fibre content and the lowest density.

Key words: Alxa gobi camel, desert camel, skeletal muscle fibre type, slaughter performance