Tropentag- 2011
ID: 410

Effect of ageing time on chemical composition and quality of the desert camel meat (*Camelus dromedarius*)

O.M.A. Abdelhadi [a], S. A. Babiker [b], J.F. Hocquette [c], D. Durand [c], B. Faye [d] and C. Kijora [e]

[a] *Dept. of Animal Prod. University of Kordofan, Sudan,*
[b] *Dept. Meat Prod. University of Khartoum, Sudan,*
[c] *INRA, UR1213, Herbivore Research Unit, 63122 Theix, France,*
[d] *CIRAD, Campus International de Baillarguet, Montpellier France,*
[e] *Humboldt –University in Berlin, Germany.*

The present work aimed to investigate the effect of ageing time on chemical composition and some quality attributes of camel meat. The study was conducted on *Longissimus thoracis* (LT) of she camels, 3-4 years of age. LT muscles were taken between the 5th to 10th rib from the right sides of seven carcasses and were aged for 1, 3, 5, and 7 days at 1-3° C before the analysis.

RESULTS: Ageing camel LT muscle significantly decreased moisture and crude protein with inconsistent effect on intramuscular fat. The separation of different myosine heavy chain (MyHC) isoforms by electrophoresis SDS- PAGE revealed two isoforms (MyHC I and MyHC IIa). In significant differences were found during ageing time in muscle pH, MyHC types I and IIa, color, and WHC , however, drip loss increased significantly with increase of ageing time.

Table 1. Effect of ageing on chemical composition

Parameters (%)	Ageing time (days)			
	1	3	5	7
Moisture	76.0^{a}	75.1^{b}	74.6^{bc}	73.7^{c}
Dry matter	23.9^{c}	25.0^{b}	25.4^{ab}	26.3^{a}
Crude protein	20.6^{a}	20.2^{ab}	19.5^{ab}	19.1^{b}
Intramuscular fat	4.23^{ac}	6.8^{a}	2.86^{c}	5.61^{ab}
Ash	1.12	1.15	1.16	1.18

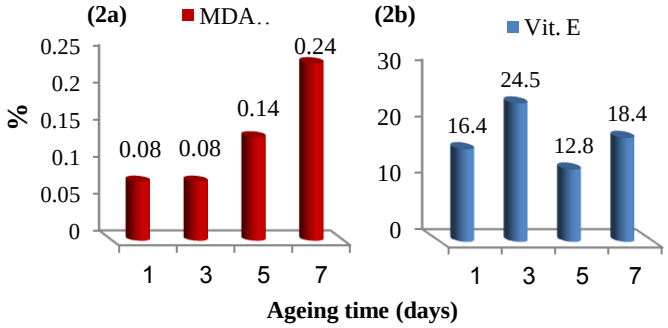


Fig. 2. Development of MDA (Malondialdehyde) (2a) and Vit. E levels (µg/ g muscle) during ageing of camel LT muscle (2b).

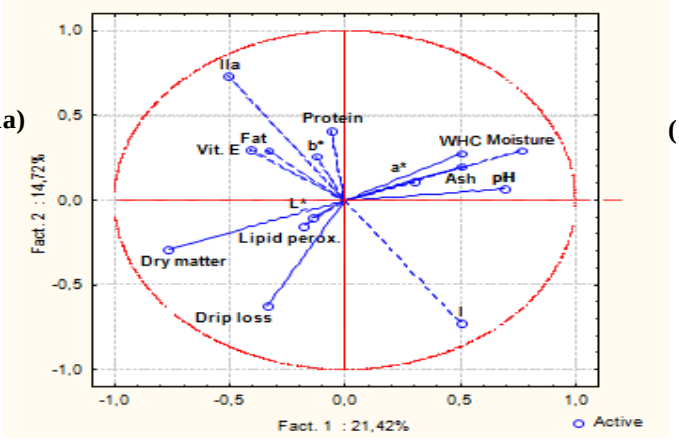
The Principal Component Analysis (Fig. 1a) showed:

- a high correlation coefficient between intramuscular fat and ash (0.90). Negative correlation coeffecient between drip loss and intramuscular fat (-0.73), MyHC I and MyHC IIa and moisture and dry matter (- 1.0). It also showed

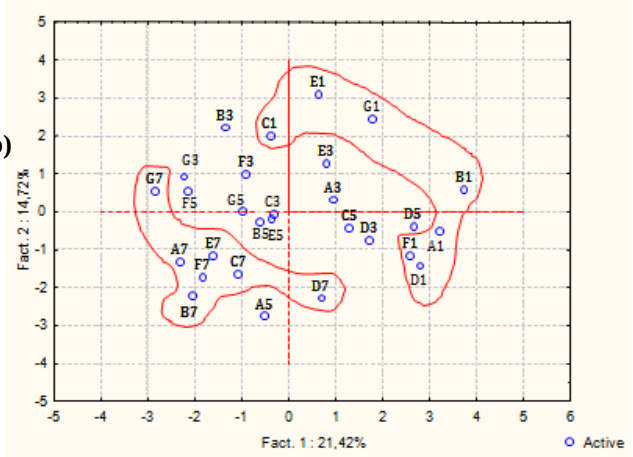
- a clear discrimination of muscles samples aged for 1 and 7 days from those aged for 3 and 5 days being in the middle (Fig. 1b).

The formation of Malondialdehyde (MDA) increased after 3 days of ageing. It could be related to vitamin E which was high up to day 3 (24.5 µg/ g) then decreased in day 7 (18.4 µg/ g). No significant effect of ageing on MDA and Vit. E which could possibly be suggested as an effective antioxidant against fat peroxidation.

(1a)



(1b)



In conclusion, ageing of camel meat decreased moisture and crude protein, improved WHC and increased drip loss, dry matter and lipid peroxidation.