

ASSESSING QUALITY CHARACTERISTICS OF ARABIAN CAMEL (*CAMELUS DROMEDARIUS*) MEAT SUBJECTED TO POSTMORTEM AGING

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Abstract – The objective of this study was to assess quality characteristics of Arabian camel meat exposed to post mortem aging. Eighteen Najdi camels of three age groups (12, 18 and 24 months) were used in this research. The *Longissimus dorsi* muscles of the experimental animals were subjected to three (0, 5 and 10 days) post mortem aging times at 2° C. The treatment groups were significantly ($P < 0.05$) different in cooking loss (CL), shear force (SF), myofibril fragmentation index (MFI) and expressed juice (EJ). It is noticed that tenderness of camel meat in this study was improved with increasing days of post-mortem aging. This was projected clearly in MFI trend. It is concluded that post mortem aging has a positive impact on increasing the tenderness and acceptability of camel meat.

Key Words – Najdi, tenderness, meat aging.

INTRODUCTION

Camel regarded as a good source of meat in climatic conditions where high temperatures, low precipitation, and scarcity of feed are dominant. No doubt that a high demand for meat protein sources is increasing with increased world population. The camel meat represents a valuable option as a source of animal protein. Although there is a common opinion that camel meat is tough; however, this is may be greatly due to traditional systems of production in which the primary roles of camels are to provide transportation or milk, rather than meat (Kadim *et al.*) [1]. Generally, camels in most of the Arab countries tend to be slaughtered at an older age than may be ideal for meat production. Understanding the factors that affect camel meat acceptability to consumers is a very important component in improving the competitiveness of camel meat as a food source. It is highly

recommended to develop and implement new management and nutritional practices as well as new technologies to improve old camel meat attributes. The objective of this study was to assess quality characteristics of Arabian camel meat subjected to postmortem aging.

I. MATERIALS AND METHODS

Eighteen (18) Arabian one-humped Najdi (N) camels from three age groups (12, 18, and 24 months) were used in this study. Following harvest, the entire *Longissimus dorsi* muscle was removed and aged at 2°C for 0, 5, or 10 days. At the end of the appropriate aging period, the muscles were cut into one-inch steaks vacuum packaged and stored at -20°C for later analyses. Cooking loss and shear force measurements were conducted as described by Al-Owaimer *et al.* [2]. Thereafter, the cooked sample was used to evaluate shear force (SF), according to the procedure described by Wheeler *et al.* [3] using Texture Analyzer (TA-HD-Stable Micro Systems, England) fitted with a Warner-Bratzler attachment. Myofibril Fragmentation Index (MFI) assay was conducted as described by Beitz *et al.* [4]. The expressed juice (EJ) test was done following a technique reported by a modified method by Wilhelm *et al.* [5].

II. RESULTS AND DISCUSSION

The results of cooking loss percentage (CL), shear force (SF), myofibril fragmentation index (MFI) and expressed juice (EJ) are given in Table 1. The meat samples obtained from the three age groups (12, 18 and 24 months) of Najdi camels showed significant ($P < 0.05$) differences in all tested parameters (CL, SF, MFI and EJ) when subjected to post-mortem

aging. Generally, tenderness of camel meat was improved with increasing days of post-mortem aging. The results obtained in this study expressed clearly this trend, specifically that of MFI. Cooking loss and shear force did not show any significant ($P > 0.05$) differences between the aging treatments within each age group. On the other side, MFI and EJ showed different trends.

Table 1 Cooking loss, shear force, myofibril fragmentation index and expressed juice of Najdi camel meat subjected to post mortem aging

Groups	Aging (Day)	C L%	S F (kg)	MFI	E J
N12	0	28.55 ^{ab}	2.49 ^{ac}	62.57 ^a	0.40 ^d
	5	26.61 ^a	1.79 ^a	74.42 ^b	0.36 ^c
	10	27.96 ^{ab}	1.84 ^a	79.02 ^{bc}	0.32 ^{bc}
N18	0	34.59 ^b	2.19 ^{ac}	80.85 ^{bc}	0.32 ^{abc}
	5	30.68 ^{ab}	2.97 ^{bc}	87.10 ^{cd}	0.32 ^{bc}
	10	31.65 ^{ab}	2.35 ^{ac}	93.90 ^d	0.28 ^a
N24	0	26.19 ^a	2.31 ^{ac}	70.85 ^{ab}	0.33 ^{bc}
	5	33.55 ^{ab}	2.30 ^{ac}	88.02 ^{cd}	0.31 ^{ab}
	10	30.92 ^{ab}	3.10 ^{bc}	95.25 ^d	0.31 ^{ab}
SE		0.8	0.11	1.76	0.01

a, b, c, d Means in the same column with different superscripts are significantly different at ($P < 0.05$)

III. CONCLUSION

The results obtained from this experiment indicate that aging camel meat has a significant impact on increasing the tenderness and acceptability of camel meat, indicating the potential value of this technique in current camel meat production.

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