EUROPE FAT CARCASS CLASSIFICATION AND EATING QUALITY OF ICELANDIC LAMB MEAT

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Aim: To study the effects of subclasses of EU fat classification of lamb carcases on chemical fat, visual marbling scores and eating quality of loin muscle (*M. longissimus dorsi*)

Introduction

Little is known about the effects of intramuscular fat (IMF) on the eating quality of Icelandic lamb meat. IMF is low and averaged 1,86% in 790 samples of muscle *l.dorsi* in a study in 2016 (4). There is a growing interest in including IMF in breeding programs for sheep in Iceland. Flavour, juiciness, and consumer liking increase with growing marbling. Minimum values from 2,5-5% intramuscular fat have been proposed for guaranteeing consumer satisfaction (1-3).

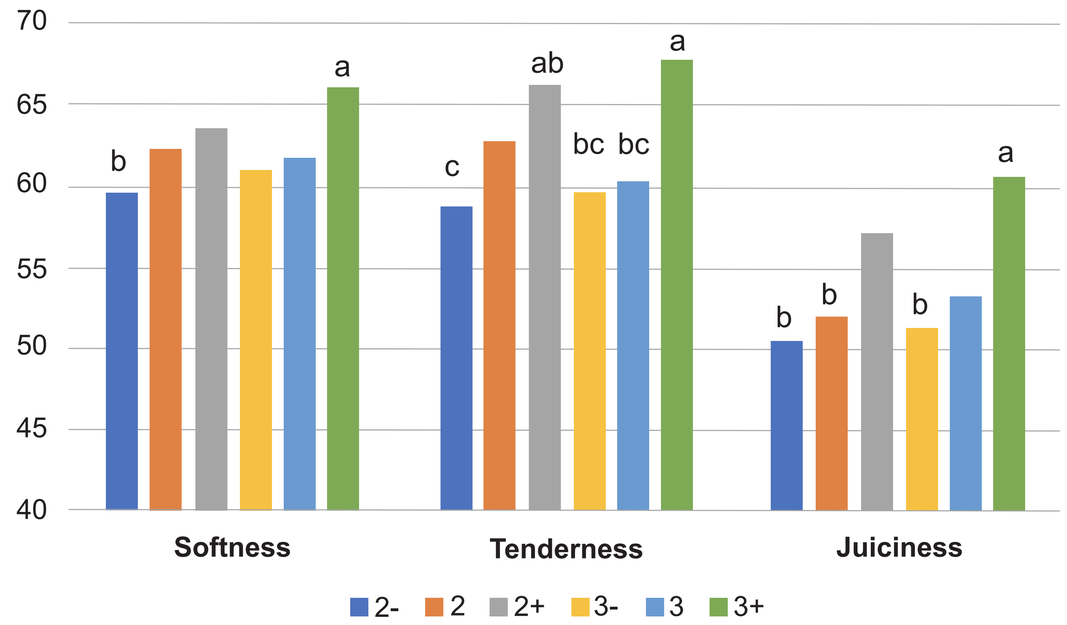
Materials and Methods

- Six lamb carcasses of subclasses 2^-, 2, 2^+, 3^-, 3, 3^+
- *M. Longisimus dorsi* (pH^{24} below 5,8) was vaccum packed and aged for 6 days at 2°C, then kept at -25°C for 5 months until analysis
- Raw muscle was analysed for visual marbling using a 5 point scale and intramuscular fat using acid hydrolysis.
- Cooked muscle (68°C Sous vide) was analysed for odour, flavour and texture attributes.

Results

- The average IMF was 1.92% with a great variation within each class.
- Intramuscular fat was lowest on average in 2^- (1.52%) but ranged from 1.83-2.17 in other groups.
- Correlation coefficients between fat classes, chemical fat content and marbling scores were low or 0.30 and 0.22 respectively.
- 3^+ scored highest in heavy odour (skatole like).
- 3^+ was highest in softness, tenderness and juiciness.
- Meat from leaner carcasses scored lowest for heavy odour/flavour and texture attributes.
- % IMF and visual marbling score correlated moderately with tenderness and juiciness
- Correlation of carcass fat class with sensory attributes was low

The effects of EU fat classes of lamb carcasses on sensory attributes of *M. Longissimus dorsi.*



Sensory attribute	% IMF	Marbling score	EU carcass fat class
Heavy odour	0.26	0.39	0.31
Fatty odour	0.13	-0.28	-0.03
Heavy flavour	0.20	0.29	0.18
Softness	0.21	0.41	0.01
Tenderness	0.44	0.47	0.07
Juiciness	0.46	0.40	0.19

Pearson correlation coefficients with sensory attributes, IMF, marbling score and EU carcass fat class.

Conclusion

EU classification of carcass fat was not a good predictor of IMF and eating quality of M. Longissimus dorsi of Icelandic lambs

Differences in texture between the meat from the leanest and fattest carcasses was not caused by IMF. Could hypothetically be explained by differences in chilling rates.

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