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P-12-01

Health implication of Biellese lamb meat consumption (#50)

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Introduction

Consumer interest in meat fat, cholesterol content and fatty acid composition has grown in recent years due to their implications for human health. The high red meat consumption is considered a dietary risk factor for cardiovascular diseases, because it has been related to saturated fatty acids (SFA) and cholesterol content. However, red meat is also a good source of monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids that have positive effects on human health. The Biellese sheep is an autochthonous Piemontese breed specialized for meat production due to its purported high quality. However, there is only limited information regarding Biellese meat quality. Therefore, the aim of this study was to examine the lipid fraction of meat in relation to the recent dietary recommendation for healthy intake.

Methods

Nine males lambs were reared in the same environmental conditions at the experimental farm of the Department of Veterinary Science of the University of Torino. The lambs were initially fed on their mother's milk and then on good quality hay until the animals were weaned. From the 30th day they were fed with a commercial concentrate which was gradually increased to 1 kg/head/day while hay was given *ad libitum*. The lambs were slaughtered at 5 months of age and an average live weight of 37 kg. After 7 days of ageing at 4°C, a portion of *Longissimus dorsi* was taken and used to determine the intramuscular fat content, the fatty acid (FA) composition and the cholesterol content. The FA composition was expressed both as percentage of total FAs and as mg/100 g of edible portion, calculated using the total fat conversion factor reported by Greenfield and Southgate (1992). The fat energy value (kcal) was calculated by multiplying the amount of fat by the conversion factor 9. Finally, the PUFA/SFA and n-6/n-3 ratios and the atherogenic (AI) and thrombogenic (TI) indices (Ulbricht and Southgate, 1991) were calculated. Values were expressed as arithmetic mean.

Results

The fat content of meat was lower than that reported in the CRA-NUT dataset (http://nut.entecra.it/646/tabelle_di_composizione_degli_alimenti.html?idalimento=104040&quant=100) for lamb (1.8 *vs* 2.7%). According to EFSA (2017), the intake of fat should range between 20 to 35% of total daily energy intake. Therefore, for a 2200 kcal/day diet, the recommended daily fat intake ranges from 49 to 86 grams. One serving (100 g) of Biellese meat provides around 3% and 1% of fat and energy, respectively. With regards to cholesterol, the meat supply a modest content (75 mg/100g) which nts around 25% of the recommended daily cholesterol intake in adults ng/d). This value was similar to CRA-NUT value for lamb (74.82 mg/ or the prevention of cardiovascular diseases, an adequate intake c nd 0.5% of the total dietary energy intake should be derived from lino) and ⍰-linolenic acids (ALA), respectively (EFSA, 2017). This corre to a daily intake of approximately 10 g/day of LA and 1 g/day of AL serving of Biellese meat provides only 0.090 g of LA and 0.025 g o n addition, EFSA (2017) recommends a minimum of 250 mg/day of pentaenoic (EPA) + docosahexaenoic acid (DHA). In this trial, EPA + concentration was around 20 mg/100 g of edible meat, therefore it be considered as a source of EPA and DHA. In general, PUFA/SF above 0.45 and n-6/n-3 below 4.0 are required in the diet to combat " e diseases". In the present study, the PUFA/SFA ratio (0.23) was consi lower than the recommended values, whereas the n-6/n-3 ratio (2.2 within the recommended value. Atherogenic and thrombogenic in which indicate the global dietetic quality of the lipids and their poter pact on the development of coronary heart disease, averaged 1.0 an spectively. According to Ulbricht and Southgate (1991), these value within the recommended values for lambs (<1.0 and <1.58 for AI and pectively).

Conclusion

Considering the obtained results, Biellese lamb meat mig a positive role for human health if consumed according to nutritiona ines.

Acknoledgements

Authors acknowledge funding provided by ERA-Net Cof sAn (grant no 696231) for EcoLamb project.

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