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There is a need to understand the factors which may influence the eating and nutritional quality of Protected Geographical Indication (PGI) Welsh Lamb meat. PGI Welsh Lamb is an important part of the Welsh economy, representing a total value of £171.5 million of Welsh Lamb exports in 2022 (Hybu Cig Cymru, 2022). The Welsh Lamb Meat Quality project was part of the Red Meat Development Programme. Hybu Cig Cymru – Meat Promotion Wales. This work researched on-farm and processing factors influencing meat eating and nutritional quality of PGI Welsh Lamb.

Representative PGI Welsh Lamb samples were sourced from across Wales (n=624 lambs). Four trials investigated on-farm factors including breed type, lamb gender, muscle cut, lamb finishing diet, daily liveweight gain, seasonality and processing factors including meat ageing period, carcase hanging and packaging. All samples were also assessed for intramuscular fat content and individual fatty acid composition. Nearly 2,000 consumers rated the sensory quality of 13,400 samples in trials. Panels were held at 12 locations across the UK with consumers testing seven samples, rating them on aroma liking, tenderness, juiciness, flavour liking, and overall liking.

Over the whole project, eating quality results indicated that muscle cut and season had the greatest effect on eating quality scores (P<0.001), with lambs slaughtered in August and November having better eating quality than those slaughtered the following February. Lamb finishing diet and lamb gender had no effect on eating quality. Individual farm influenced on all eating quality attributes (P<0.001, except Aroma Liking P=0.011) and nutritional measures (P<0.001) and this could not be explained by the factors recorded. Slaughter age impacted eating quality, with younger animals having higher consumer sensory scores (P<0.001). Where consumers were from (i.e. region) also effected sensory scores (P<0.001). Intramuscular fat (IMF) content was associated with increased consumer scores (P<0.001). The average omega-6:omega-3 ratio was below 2.0 for all diets, which is considered healthy. The healthiest (lowest) omega-6:omega-3 ratio was derived from the grass finished lambs and the ratio was 0.94 (P>0.001).

PGI Welsh Lamb meat is healthy, nutritious, and the eating quality was good. Some effects were observed with on-farm and processing factors influencing eating and nutritional quality. Those lambs that were finished on grass and/or forage had higher levels of beneficial omega-3 fatty acids.

Hybu Cig Cymru, 2022. <https://meatpromotion.wales/en/news-industry-info/welsh-red-meat-exports-hit-250m-as-industry-leaders-look-to-grow-new-markets>