Domestic Grass- and Grain-finished Lamb Study

Introduction: Scientists from USDA and Colorado State University (CSU) collaborated to obtain nutrient data for widely purchased retail cuts of U.S. lamb produced under grass- and grain-finished systems. Current nutrient data for lamb products can support health professionals and consumers who desire access to data for nutritional purposes. Nutrient updates are important to reflect the composition of currently available retail lamb cuts.

Methods: Samples of 11 domestically raised grass- and grain-finished lamb cuts were collected during all four seasons of 2014 from retail suppliers providing most of the domestic market. Grass-finished cuts were obtained from two representative regional sources having seasonal supply: the Intermountain West region and the West Coast region. Grain-finished cuts were obtained from three representative sources: two in the Intermountain West region and one in the West Coast region. CSU meat scientists dissected the retail cuts (n=24 per grain-finished and n=10 per grass-finished cut) and prepared samples for analysis using standardized protocols. Ground lamb was pan-grilled in a preheated non-stick anodized aluminum skillet at a surface temperature of 195° C (383° F. Frenched ribs and chops from lamb shoulder blade, rib, and loin were cooked on a preheated two-sided grill at 195° C. Whole legs were roasted in a rack inside a non-stick anodized aluminum roasting pan in a preheated convection oven at 160° C (320° F). Cuts were cooked to 60° C (140° F) internal temperature. For each raw or cooked grass- and grain-finished cut, a composite was formed for analysis. USDA-approved laboratories analyzed the samples using validated methodology, standard reference materials, in-house control materials, and random duplicates to monitor for quality assurance.

Data Description: These analytical data for 11 grass- and grain-finished lamb cuts represent values for proximate nutrients, B vitamins, minerals, and fatty acids. Individual analytical fatty acid values were summed by respective fatty acid category to obtain total saturated, monounsaturated, polyunsaturated, and trans fatty acids per raw and cooked cut.

Significance: This study generated updated analytical data as a foundational basis for grass- versus grain-finished retail lamb cuts, including data for some cuts that had not previously been available. These data illustrate the need for further research to determine estimates of variability for each cut. The data enable consumers, nutritionists, and researchers to identify nutrient content of domestic raw and cooked lamb cuts to support nutrition monitoring and knowledge for making healthy food choices.

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