Abstract

The aim of this study was to assess the feasibility of near-infrared reflectance spectroscopy (NIRS) for predicting lamb meat fattyacid composition. We compared ground *vs.* intact non-ground meat samples to determine whether grinding and homogenisation of meat samples improved the performance of the predictions. We used 76 male lambs, of which 32 were pasture-fed and 44 stall-fed with concentrate and hay. The reflectance spectrum of *Longissimus lumborum* muscle was measured at wavelengths between 400 and 2500 nm. Predictions were better with ground than with intact muscle samples. NIRS accurately predicts several individual fattyacids (FA) (16:0, 18:0, 16:1 Δ9 *cis*, 17:1 Δ9 *cis*, 18:1 Δ9 *cis*, 18:1 Δ11 *cis* and 16:1 Δ9 *trans*) and several FA groups (total linear saturated FA, total branched saturated FA, total saturated FA, total *cis* monounsaturated FA (MUFA), total *trans* MUFA, total MUFA and total polyunsaturated PUFA). These results show the potential of NIRS as a rapid, and convenient tool to predict the major FA in lambmeat.